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Spanish and Portuguese .............................. 596
Statistics and Actuarial Science ................... 613
Theatre Arts .................................................... 625
Translation ..................................................... 635
Translation for Global Literacy ..................... 637
The University of Iowa 2015-16 General Catalog

The General Catalog provides information about academic programs at the University of Iowa, one of three universities governed by the Board of Regents, State of Iowa. The Catalog also provides links to supporting offices at the University, a list of administrative officers, an A-Z list of University of Iowa faculty members, a University calendar, and a link to the Code of Iowa for information regarding admission requirements and Iowa resident/nonresident standing.

The General Catalog is published for informational purposes and should not be construed as the basis of a contract between a student and the University of Iowa. Every effort is made to provide information that is accurate at the time of publication. However, information on courses, curricula, fees, policies, regulations, and other matters is subject to change any time during the period for which the Catalog is in effect.

For PDF versions of archived back editions, visit Office of the Registrar/General Catalog and use the drop-down menu under "Catalog Snapshots."

The General Catalog is produced by the Office of the Registrar. Your comments and suggestions are welcome. Questions concerning the Catalog may be directed to the Office of the Registrar at registrar-publications@uiowa.edu.

The University of Iowa has been accredited by the North Central Association of Colleges and Schools since the association’s organization in 1913. The University is a member of the Association of American Universities and is associated with Indiana, Michigan State, Northwestern, Ohio State, Pennsylvania State, Purdue, and Rutgers Universities and the Universities of Illinois, Maryland, Michigan, Minnesota, Nebraska, and Wisconsin in the Big Ten Conference. Along with the Big Ten universities, it also is associated with the University of Chicago in the Committee for Institutional Cooperation (CIC).

The University of Iowa prohibits discrimination in employment, educational programs, and activities on the basis of race, creed, color, religion, national origin, age, sex, pregnancy, disability, genetic information, status as a U.S. veteran, service in the U.S. military, sexual orientation, gender identity, associational preferences, or any other classification that deprives the person of consideration as an individual. The University also affirms its commitment to providing equal opportunities and equal access to University facilities. For additional information on nondiscrimination policies, contact the Director, Office of Equal Opportunity and Diversity, The University of Iowa, 202 Jessup Hall, Iowa City, IA 52242-1316; 319-335-0705 (voice), 319-335-0697 (TDD), diversity@uiowa.edu.
Academics at Iowa

The University of Iowa offers academic degree and nondegree programs at the undergraduate and graduate levels. It also offers postdoctoral study and other opportunities for nondegree study and research. The General Catalog describes the University's degree and nondegree programs at the undergraduate and graduate levels.

The following pages provide global information about undergraduate, graduate, and professional study across the University. They include lists of all undergraduate majors (including tracks, concentrations, emphases, or subprograms), certificates, and minors, with links to the relevant Catalog sections; a link to the College of Liberal Arts and Sciences' undergraduate General Education Program; information about the undergraduate Four-Year Graduation Plan; information about graduate and professional study; descriptions of the University's course numbering and grading systems; and contact information for supporting offices (admissions, registrar, housing, student financial aid, and equal opportunity).

- Undergraduate Study (p. 6)
  - Undergraduate Majors and Pre-majors (p. 7)
  - Undergraduate Certificates (p. 11)
  - Undergraduate Minors (p. 12)
  - General Education Program (p. 13)
  - Four-Year Graduation Plan (p. 15)
  - Iowa Degree in Three (p. 14)
- Graduate and Professional Study (p. 16)
- Course Numbering (p. 17)
- Grading (p. 21)
- Supporting Offices (p. 22)

For information about degree and nondegree programs in specific disciplines and interdisciplinary areas, including graduation requirements and courses offered, see the links under Colleges and Other Academic Units (p. 23) in the Catalog.

To find the Catalog section for a specific academic department or program, use the Catalog's A-Z Directory or the Catalog Contents index.
University of Iowa undergraduate students may earn majors, certificates, and minors in more than 100 subject areas. Many majors have varied subprograms, tracks, or concentration areas, which students may choose according to their own educational goals and interests. Each program is described in the 2015-16 General Catalog, with information on courses and other graduation or completion requirements. Click on the program links under "Undergraduate Majors and Pre-majors," "Undergraduate Certificates," and "Undergraduate Minors."

- Undergraduate Majors and Pre-majors (p. 7)
- Undergraduate Certificates (p. 11)
- Undergraduate Minors (p. 12)

Students enrolled in the College of Liberal Arts and Sciences must complete the college's General Education Program in order to earn an undergraduate degree; other colleges also require General Education course work as part of their undergraduate curricula. For a detailed description of the program and its requirements, use the following link.

- General Education Program (p. 313)

Undergraduate students may participate in the Four-Year Graduation Plan, in which students agree to certain conditions that guide their study, and the University ensures availability of courses that students need in order to graduate in four years or provides remedies for delays in graduation due to lack of a course.

- Four-Year Graduation Plan (p. 15)

The Iowa Degree in Three is a new program that undergraduate students can choose so that they can complete their major in three years. There are five majors that now offer this accelerated program.

- Iowa Degree in Three (p. 14)
Undergraduate Majors and Pre-majors

The University of Iowa offers the following undergraduate majors, pre-majors, interest areas, and preparatory course work for selected degrees. Some majors offer Teacher Education Programs or the opportunity to earn a degree with teacher licensure, as indicated below. Each major links to the appropriate section of the 2015-16 General Catalog. Additional information about all majors is available on the Office of Admissions web site under Undergraduate Areas of Study.

Majors and Tracks

Accounting (p. 648) (B.B.A.)

Actuarial science (B.S.): see Statistics and Actuarial Science (p. 613)

African American studies (p. 28) (B.A.)

American studies (p. 44) (B.A.)

Ancient civilization (B.A.): see Classics (p. 149)

Ancient Mediterranean Religions

Egypt and the ancient Near East track

Anthropology (p. 55) (B.A., B.S.)

Anthropology for the health professions track (B.S.)

Cultural resource and heritage management specialization

Gender and culture specialization

Environmental anthropology specialization

Medical anthropology specialization

Teacher licensure

Applied physics (B.S.): see Physics and Astronomy (p. 507)

Art (B.A., B.F.A.): see Art and Art History (p. 74)

Ceramics concentration (B.F.A.)

Drawing concentration (B.F.A.)

Graphic design concentration (B.F.A.)

Intermedia concentration (B.F.A.)

Jewelry and metal arts concentration (B.F.A.)

Painting concentration (B.F.A.)

Photography concentration (B.F.A.)

Printmaking concentration (B.F.A.)

Sculpture concentration (B.F.A.)

Three-dimensional design concentration (B.F.A.)

Teacher licensure (B.A., B.F.A.)

Art history (B.A.): see Art and Art History (p. 74)

Teacher licensure

Asian languages and literature (B.A.): see Asian and Slavic Languages and Literatures (p. 100)

Chinese track

Hindi track

Japanese track

Sanskrit track

Teacher licensure

Astronomy (B.A., B.S.): see Physics and Astronomy (p. 507)

Athletic training (B.S.): see Health and Human Physiology (p. 349)

Bachelor of Applied Studies (p. 1192) (B.A.S.)

Creative writing emphasis

Human relations emphasis

Justice studies emphasis

Political science emphasis

Bachelor of Liberal Studies (p. 1195) (B.L.S.)

Global studies track

Health and human studies track

Organizational studies track

Biochemistry (p. 1021) (B.A., B.S.)

Biology (p. 119) (B.A., B.S.)

Cell and developmental biology track

Comprehensive biology track

Evolutionary biology track

Genetics and biotechnology track

Neurobiology track

Plant biology track

Teacher licensure

Biomedical engineering (p. 851) (B.S.E.)

Bioinformatics/computational biology track

Biomimetics track

Biomaterials track

Cardiovascular biomechanics track

Cellular engineering track

Musculoskeletal biomechanics track

Pre-medicine track

Biomedical sciences (p. 133) (B.S.)

Business administration (B.B.A.): see Business (p. 642)

Business analytics and information systems (B.B.A.): see Management Sciences (p. 687)

Chemical engineering (B.S.E.): see Chemical and Biochemical Engineering (p. 861)

Biochemical engineering track

Business track

Chemical process engineering track

Entrepreneurship track

Energy and environmental engineering track

Pharmaceuticals track

Polymers track

Pre-medicine track

Sustainability track

Chemistry (p. 135) (B.A., B.S.)

Teacher licensure

Cinema (B.A.): see Cinematic Arts (p. 143)

Civil engineering (B.S.E.): see Civil and Environmental Engineering (p. 871)

Civil subtrack

Environmental subtrack

Civil practice track (civil or environmental)

Environmental engineering track (environmental)

Hydraulics and water resources track (civil or environmental)

Management track (civil or environmental)

Structures, mechanics, and materials track (civil or environmental)

Transportation engineering track (civil or environmental)

Urban and regional planning track (civil or environmental)

Classical languages (B.A.): see Classics (p. 149)

Teacher licensure

Communication studies (p. 177) (B.A.)

Comparative literature (B.A.): see Comparative Literature (p. 193)

Literature and arts track
World languages and literature track

Computer science (p. 198) (B.A., B.S.)

Dance (p. 215) (B.A., B.F.A.)

Economics (p. 664) (B.A., B.B.A., B.S.)

Analytical track

Business track

Policy track

Electrical engineering (B.S.E.): see Electrical and Computer Engineering (p. 884)

Computer track

Electrical track

Elementary education (p. 243) (B.A., B.S.)

Teacher licensure

Engineering (p. 831) (B.S.E.)

English (p. 244) (B.A.)

Creative writing track

Teacher licensure

Enterprise leadership (p. 273) (B.A.)

Environmental policy and planning (p. 275) (B.A., B.S.)

Planning track

Policy track

Environmental sciences (p. 278) (B.A., B.S.)

Biosciences track (B.S.)

Chemical sciences track (B.S.)

Geosciences track (B.S.)

Hydrosciences track (B.S.)

Ethics and public policy (p. 286) (B.A.)

Economics specialization

Philosophy specialization

Political science specialization

Sociology specialization

Student-designed specialization

Finance (p. 677) (B.B.A.)

French (B.A.): See French and Italian (p. 291)

French and Arabic track

Language track

Literature and culture track

Teaching track

Gender, women's, and sexuality studies (p. 303) (B.A.)

Geography (B.A., B.S.): see Geographical and Sustainability Sciences (p. 323)

Environmental studies track

Geographic information science track

Health and society track

Teacher licensure

Geoscience (B.A., B.S.): see Earth and Environmental Sciences (p. 231)

German (p. 336) (B.A.)

Teacher licensure

Health and human physiology (p. 349) (B.A.)

Exercise science track

Health promotion track

Health studies track

History (p. 377) (B.A.)

Teacher licensure

Human physiology (B.S.): see Health and Human Physiology (p. 349)

Industrial engineering (B.S.E.): see Mechanical and Industrial Engineering (p. 894)

Computer and information systems track

Design and manufacturing track

Entrepreneurship track

Human factors and ergonomics track

Management track

Pre-medicine track

Wind energy track

Informatics (B.A., B.S.): see Computer Science (p. 198)

Art cognate (B.A.)

Bioinformatics cognate (B.S.)

Economics cognate (B.A.)

Geoinformatics cognate (B.A.)

Human-computer interaction cognate (B.A.)

Linguistics cognate (B.A.)

Medical informatics cognate (B.S.)

Music cognate (B.A.)

Social informatics cognate (B.A.)

Individualized cognates (B.A., B.S.)

Interdepartmental studies (p. 396) (B.A.)

Applied human services track

Business studies track

Engaged social innovation track

Health science track

Individualized plan of study track

International relations (B.A., B.S.): see Political Science (p. 520)

Conflict and foreign policy track

International business and economic relations track

Regional politics and relationships track

Transnational issues track

Self-defined track

International studies (p. 415) (B.A.)

African studies track

Caribbean studies track

Development track

East Asian studies track

European studies track

Global artistic tradition and change track

Global health track

Global resources and the environment track

Human rights track

International business track

International communication and information track

Islamic and Middle Eastern studies track

Latin American studies track

Postcolonial and diasporic studies track

Russian, East European, and Eurasian studies track

South Asian studies track

Italian (B.A.): see French and Italian (p. 291)

Teacher licensure

Journalism and mass communication (p. 433) (B.A., B.S.)

Linguistics (p. 449) (B.A.)

Teaching English as a second language (TESL) emphasis

Management (B.B.A.): see Management and Organizations (p. 682)

Entrepreneurial management track

Human resource management track

Leadership and management track

Marketing (p. 692) (B.B.A.)

Mathematics (p. 455) (B.A., B.S.)
General track (Program A)
Math education track (Program B)
Specialization areas track (Program C)
Teacher licensure
Mechanical engineering (B.S.E.): see Mechanical and Industrial Engineering (p. 894)
Energy and environment track
Manufacturing and materials processing track
Mechanical engineering design track
Medical Laboratory Science (p. 1046) (B.S.)
Microbiology (p. 1050) (B.S.)
Music (p. 473) (B.A., B.M.)
Brass/woodwind track (B.M.)
Composition track (B.M.)
Jazz studies track (B.M.)
Music therapy track (B.M.)
Organ track (B.M.)
Percussion track (B.M.)
Piano track (B.M.)
String track (B.M.)
Voice track (B.M.)
Teacher licensure
Nuclear medicine technology (p. 1060) (B.S.)
Nursing (p. 1110) (B.S.N.)
Articulation option TCV
Articulation option EVC
Pharmacy (p. 1128) (Pharm.D.)
Philosophy (p. 500) (B.A.)
Physics (B.A., B.S.): see Physics and Astronomy (p. 507)
Teacher licensure
Political science (p. 520) (B.A., B.S.)
Teacher licensure
Portuguese (B.A.): see Spanish and Portuguese (p. 596)
Teacher licensure
Psychology (B.A., B.S.): see Psychological and Brain Sciences (p. 536)
Teacher licensure
Radiation sciences (p. 1092) (B.S.)
Diagnostic medical sonography and cardiac and vascular sonography track
Diagnostic medical sonography and general and vascular sonography track
Radiation therapy and computed tomography track
Radiologic technology and cardiovascular interventional track
Radiologic technology and computed tomography track
Radiologic technology and magnetic resonance imaging track
RT to B.S.
Religious studies (p. 548) (B.A.)
Russian (B.A.): see Asian and Slavic Languages and Literatures (p. 100)
Teacher licensure
Science education (p. 788) (B.S.)
All-science emphasis
Biology emphasis
Chemistry emphasis
Earth science emphasis
Physics emphasis
Teacher licensure
Social work (p. 572) (B.A.)
Sociology (p. 585) (B.A., B.S.)
Criminology track
Spanish (B.A.): see Spanish and Portuguese (p. 596)
Teacher licensure
Speech and hearing science (B.A.): see Communication Sciences and Disorders (p. 165)
Sport studies (B.A.): see American Studies (p. 44)
Sport and recreation management (B.S.): see Health and Human Physiology (p. 349)
Business studies concentration
Coaching and sport instruction concentration
Communications public relations/journalism concentration
Entrepreneurship concentration
Event management concentration
Sport and diversity concentration
Student-designed concentration
Statistics (B.S.): see Statistics and Actuarial Science (p. 613)
Mathematical statistics track
Statistical computing and data science track
Statistics in business, industry, government, and research track
Theatre arts (p. 625) (B.A.)
Therapeutic Recreation (B.S.): see Health and Human Physiology (p. 349)
Child life track
Inclusive recreation track

Pre-majors, Interest Areas, and Preparatory Course Work

For information about the following pre-majors, interest areas, and preparatory course work for selected degrees, see the Office of Admissions web site Undergraduate Areas of Study.

Actuarial science interest
Athletic training interest
Biomedical sciences interest
Dance interest
Elementary education interest
Medical laboratory science interest
Music interest
Nuclear medicine technology interest
Nursing interest
Pharmacy interest (preparatory course work for the Pharm.D.)
Pre-business (preparatory course work for the B.B.A.)
Pre-chiropractic
Pre-dentistry (preparatory course work for the D.D.S.)
Pre-law (preparatory course work for the J.D.)
Pre-medicine (preparatory course work for the M.D.)
Pre-mortuary science
Pre-occupational therapy
Pre-optometry
Pre-physical therapy (preparatory course work for the D.P.T.)
Pre-physician assistant (preparatory course work for the M.P.A.S.)
Pre-podiatry
Pre-R.N.-B.S.N. nursing
Pre-veterinary medicine
Undergraduate Majors and Pre-majors

Radiation sciences interest
Social work interest
Therapeutic recreation child life interest
Therapeutic recreation inclusive recreation interest
Undergraduate Certificates

The University of Iowa offers a number of certificates for undergraduates, most in interdisciplinary areas. Colleges offering undergraduate certificates include the College of Liberal Arts and Sciences, the Tippie College of Business, the College of Engineering, the College of Public Health, and University College.

Certificate in Aging Studies (p. 34)
Certificate in American Indian and Native Studies (p. 37)
Certificate in American Sign Language and Deaf Studies: see American Sign Language (p. 41)
Certificate in Clinical and Translational Science (p. 1206)
Certificate in Critical Cultural Competence (p. 214)
Certificate in Disability Studies (p. 224)
Certificate in Entrepreneurial Management (p. 673)
Certificate in Event Planning (p. 289)
Certificate in Fundraising and Philanthropy Communication (p. 301)
Certificate in Global Health Studies (p. 343)
Certificate in Human Rights (p. 1003)
Certificate in International Business (p. 408)
Certificate in Large Data Analysis (p. 445)
Certificate in Latin American Studies (p. 446)
Certificate in Leadership Studies (p. 1216)
Certificate in Medieval Studies (p. 467)
Certificate in Museum Studies (p. 470)
Certificate in Nonprofit Management (p. 1228)
Certificate in Performing Arts Entrepreneurship (p. 498)
Certificate in Public Health (p. 1151)
Certificate in Risk Management and Insurance (p. 702)
Certificate in Social Science Analytics (p. 571)
Certificate in Sustainability (p. 1248)
Certificate in Technological Entrepreneurship (p. 914)
Certificate in Wind Energy (p. 915)
Certificate in Writing (p. 638)
Undergraduate Minors

Undergraduate minors are offered in numerous disciplines and interdisciplinary areas by the College of Liberal Arts and Sciences, the Tippie College of Business, the College of Education, and University College.

Aerospace studies (p. 1190)
African American studies (p. 28)
Aging studies (p. 34)
American Indian and native studies (p. 37)
American Sign Language (p. 41)
American studies (p. 44)
Ancient civilization: see Classics (p. 149)
Anthropology (p. 55)
Arabic language: see French and Italian (p. 291)
Art: see Art and Art History (p. 74)
Art history: see Art and Art History (p. 74)
Asian languages (emphasis in Chinese, Hindi, Japanese, or Sanskrit): see Asian and Slavic Languages and Literatures (p. 100)
Astronomy: see Physics and Astronomy (p. 507)
Biology (p. 119)
Business administration: see "Undergraduate Programs of Study" in Tippie College of Business (p. 642)
Chemistry (p. 135)
Cinema: see Cinematic Arts (p. 143)
Classical languages: see Classics (p. 149)
Communication sciences and disorders (p. 165)
Communication studies (p. 177)
Comparative literature (p. 193)
Computer science (p. 198)
Dance (p. 215)
Economics (p. 664)
Educational psychology: see Psychological and Quantitative Foundations (p. 759)
English (p. 244)
Environmental policy and planning (p. 275)
Environmental sciences (p. 278)
French: see French and Italian (p. 291)
Gender, women’s, and sexuality studies (p. 303)
Geographic information science: see Geographical and Sustainability Sciences (p. 323)
Geography: see Geographical and Sustainability Sciences (p. 323)
Geoscience: see Earth and Environmental Sciences (p. 231)
German (p. 336)
Global health studies (p. 343)
Greek: see Classics (p. 149)
Health and the human condition: see Classics (p. 149)
History (p. 377)
Human physiology; see Health and Human Physiology (p. 349)
Human relations: see Rehabilitation and Counselor Education (p. 774)
Informatics: see Computer Science (p. 198)
International relations: see Political Science International studies
Italian: see French and Italian (p. 291)
Latin: see Classics (p. 149)
Latin American studies (p. 446)
Latina/o studies: see History (p. 377)
Linguistics (p. 449)
Mass communication: see Journalism and Mass Communication (p. 433)
Mathematics (p. 455)
Microbiology (p. 1050)
Military science (p. 1225)
Music (p. 473)
Philosophy (p. 500)
Physical activity and nutrition science: see Health and Human Physiology (p. 349)
Physics: see Physics and Astronomy (p. 507)
Political science (p. 520)
Portuguese: see Spanish and Portuguese (p. 596)
Psychology: see Psychological and Brain Sciences (p. 536)
Religious studies (p. 548)
Rhetoric and persuasion: see Rhetoric (p. 560)
Russian: see Asian and Slavic Languages and Literatures (p. 100)
Social work (p. 572)
Sociology (p. 585)
Spanish: see Spanish and Portuguese (p. 596)
Sport studies: see American Studies (p. 44)
Sport and recreation management: see Health and Human Physiology (p. 349)
Statistics: see Statistics and Actuarial Science (p. 613)
Theatre arts (p. 625)
Translation for Global Literacy (p. 637)
General Education Program

All students entering the College of Liberal Arts and Sciences who wish to earn a Bachelor of Arts (B.A.), Bachelor of Science (B.S.), Bachelor of Fine Arts (B.F.A.), or Bachelor of Music (B.M.) degree must complete the CLAS General Education Program in addition to the requirements of their major and other requirements for graduation.

Undergraduate degree programs in other colleges include General Education requirements, which often may be satisfied with certain courses approved for the CLAS General Education Program.

For detailed information about CLAS General Education requirements and lists of courses approved in the CLAS General Education areas, see General Education Program (p. 313) (College of Liberal Arts and Sciences).
Iowa Degree in Three

University of Iowa majors who are strongly motivated can graduate with a degree in three years under the newly-implemented Iowa Degree in Three. The program is available to students who can complete more semester hours each term than they would on the Four-Year Graduation Plan.

Students sign an agreement during their first semester of enrollment; meet with an advisor at least once a semester to review their plans and progress; take courses during summer sessions, if necessary; meet specific course checkpoints; and maintain the grade-point average required for the major.

Students are allowed to bring Advanced Placement (AP), College Level Examination Program (CLEP), or transfer credit upon admission to reduce the number of semester hours required for their degree. They should consult their advisor about the program.

Five majors in the College of Liberal Arts and Sciences and one major in the Tippie College of Business are currently part of the Iowa Degree in Three program.

College of Liberal Arts and Sciences:
- Communication studies
- English
- History
- International studies
- Theatre arts

Tippie College of Business:
- Marketing
Four-Year Graduation Plan

Nearly all students who enter the University as first-year students are automatically eligible for the University's Four-Year Graduation Plan. Students who fulfill their responsibilities to the plan as outlined at the web site below have a commitment from the University of Iowa that they will be able to enroll in the courses they need to graduate in their primary major in four years.

Students wanting to stay on track for a four-year graduation need to work closely with their advisors to make sure they understand the requirements that must be met, as well as the appropriate sequences in which to take courses.

More information about the Four-Year Graduation Plan and about a student's responsibilities is located on the First-Year Experience web site.

The Plan does not apply to second majors, minors, or certificates. The following majors are not part of the Four-Year Graduation Plan:

- Computer Science
- Elementary Education
- Environmental Sciences
- Informatics
- Nuclear Medicine Technology
- Nursing (B.S.N. competitive admission students)
- Radiation Sciences
- Science Education

Although these departments do not participate in the program, with careful planning students still may be able to complete some of these programs in four years.
Graduate and Professional Study

The University of Iowa offers graduate and professional degree programs and graduate certificate programs in a broad array of disciplines and interdisciplinary areas of study. Eleven of the University's 12 colleges offer one or more master's degree programs, and most offer doctoral degree programs. Degree programs are presented by individual colleges, with most graduate degrees being conferred by the Graduate College.

The Graduate (p. 916) College section of the Catalog provides a list of most University of Iowa graduate degree programs as well as information about interdisciplinary graduate degree programs, joint degree programs, and certificate programs.

For information about graduate and professional degree and nondegree programs in specific disciplines and interdisciplinary areas, including graduation requirements and courses offered, see the appropriate General Catalog sections.

- Tippie College of Business (p. 642)
- College of Dentistry (p. 704)
- College of Education (p. 735)
- College of Engineering (p. 831)
- Graduate (p. 916) College
- College of Law (p. 969)
- College of Liberal Arts and Sciences (p. 24)
- College of Medicine (p. 1005)
- College of Nursing (p. 1110)
- College of Pharmacy (p. 1128)
- College of Public Health (p. 1143)

Prospective graduate and professional students should apply through the Office of Admissions.
Course Numbering

Course numbers at the University of Iowa consist of an alphabetical prefix (up to four letters) showing the college, department, or program, followed by a colon and a four-digit numerical suffix for the individual course. For example, SOC:2810 identifies the course numbered 2810 in the Department of Sociology (SOC), titled Social Inequality.

Course suffix numbers 0000-0999 designate prelower-level courses; numbers 1000-2999 designate lower-level undergraduate courses; numbers 3000-4999 designate courses for upper-level undergraduate and graduate students (except in the College of Engineering, where numbers 3000-5999 designate courses for undergraduate and graduate students); numbers 5000-7999 designate graduate-level courses; and numbers 8000-9999 designate professional-level courses.

### Tippie College of Business

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### College of Dentistry

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**Carver College of Medicine**

- ACB: Anatomy and Cell Biology
- ANES: Anesthesia
- BIOC: Biochemistry
- CTS: Cardiothoracic Surgery
- DERM: Dermatology
- DIET: Dietary (Dietetic Internship)
- EM: Emergency Medicine
- EMTP: EMT—Paramedic Program
- FAM: Family Medicine
- FRRB: Free Radical and Radiation Biology
- IM: Internal Medicine
- MED: Carver College of Medicine
- MICR: Microbiology

**College of Nursing**

- NURS: Nursing

**College of Pharmacy**

- PHAR: Pharmacy

**College of Public Health**

- BIOS: Biostatistics
- CBH: Community and Behavioral Health
- EPID: Epidemiology
- HMP: Health Management and Policy
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<td>IALL</td>
<td>Iowa Lakeside Laboratory</td>
</tr>
<tr>
<td>IAP</td>
<td>Intercollegiate Athletic Participation</td>
</tr>
<tr>
<td>IBA</td>
<td>Iowa Biosciences Academy</td>
</tr>
<tr>
<td>IYWS</td>
<td>Iowa Young Writers' Studio</td>
</tr>
<tr>
<td>LLS</td>
<td>Lifetime Leisure Skills</td>
</tr>
<tr>
<td>LS</td>
<td>Leadership Studies</td>
</tr>
<tr>
<td>MILS</td>
<td>Military Science</td>
</tr>
<tr>
<td>PCP</td>
<td>Patient Care Practicum</td>
</tr>
<tr>
<td>PLTW</td>
<td>Project Lead The Way</td>
</tr>
<tr>
<td>SITS</td>
<td>Student Information Technology Skills</td>
</tr>
<tr>
<td>SSTP</td>
<td>Secondary School Training Program (Secondary Student Training Program)</td>
</tr>
<tr>
<td>UIUB</td>
<td>University of Iowa Upward Bound</td>
</tr>
<tr>
<td>ULIB</td>
<td>University Libraries</td>
</tr>
<tr>
<td>URES</td>
<td>Undergraduate Research Experiences</td>
</tr>
</tbody>
</table>
Grading

The University uses a letter grading system for individual courses, except for the College of Law, which uses a numeric system for course grading. In order to compute grade-point average, letter grades are converted according to the following numerical scale. Grade-point averages are displayed at the bottom of students' grade reports. All of the following marks appear on the permanent record.

**Grade points for each semester hour:**

<table>
<thead>
<tr>
<th>Grade</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>A+</td>
<td>4.33</td>
</tr>
<tr>
<td>A</td>
<td>4.00</td>
</tr>
<tr>
<td>A-</td>
<td>3.67</td>
</tr>
<tr>
<td>B+</td>
<td>3.33</td>
</tr>
<tr>
<td>B</td>
<td>3.00</td>
</tr>
<tr>
<td>B-</td>
<td>2.67</td>
</tr>
<tr>
<td>C+</td>
<td>2.33</td>
</tr>
<tr>
<td>C</td>
<td>2.00</td>
</tr>
<tr>
<td>C-</td>
<td>1.67</td>
</tr>
<tr>
<td>D+</td>
<td>1.33</td>
</tr>
<tr>
<td>D</td>
<td>1.00</td>
</tr>
<tr>
<td>D-</td>
<td>0.67</td>
</tr>
<tr>
<td>F</td>
<td>0</td>
</tr>
</tbody>
</table>

**Not used in computing grade-point average:**

<table>
<thead>
<tr>
<th>Mark</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUS</td>
<td>Audit Successful</td>
</tr>
<tr>
<td>AUU</td>
<td>Audit Unsuccessful</td>
</tr>
<tr>
<td>H</td>
<td>Honors (Medicine and Pharmacy)</td>
</tr>
<tr>
<td>H-</td>
<td>Near Honors (Medicine)</td>
</tr>
<tr>
<td>IP</td>
<td>In Progress</td>
</tr>
<tr>
<td>N</td>
<td>Nonpass</td>
</tr>
<tr>
<td>P</td>
<td>Pass</td>
</tr>
<tr>
<td>S</td>
<td>Satisfactory</td>
</tr>
<tr>
<td>U</td>
<td>Unsatisfactory</td>
</tr>
</tbody>
</table>

**Other marks on the permanent record:**

<table>
<thead>
<tr>
<th>Mark</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Incomplete</td>
</tr>
<tr>
<td>O</td>
<td>No grade reported</td>
</tr>
<tr>
<td>R</td>
<td>Registered, no grade required</td>
</tr>
<tr>
<td>W</td>
<td>Withdrawn</td>
</tr>
<tr>
<td>=</td>
<td>Changed grade</td>
</tr>
<tr>
<td>#</td>
<td>Grade not included in grade-point average</td>
</tr>
<tr>
<td>*</td>
<td>Undergraduate honors section</td>
</tr>
</tbody>
</table>
Supporting Offices

Prospective undergraduate, graduate, and professional students should apply to the University through the Office of Admissions. Several other University of Iowa offices provide major services to entering and continuing students.

Application for admission (undergraduate, graduate, and professional programs):
Office of Admissions
The University of Iowa
107 Calvin Hall
Iowa City, IA 52242-1396
Phone: 1-319-335-3847
E-mail: admissions@uiowa.edu
Web site, undergraduate admissions: http://admissions.uiowa.edu
Web site, graduate and professional admissions: http://grad.admissions.uiowa.edu

Registration, course offerings, tuition and fees, residency status, transcripts, verifications, general catalog, classroom scheduling, graduation analysis, degree audits, diplomas and certificates, GI Bill:
Office of the Registrar
The University of Iowa
1 Jessup Hall
Iowa City, IA 52242-1316
E-mail: registrar@uiowa.edu
Web site: http://www.registrar.uiowa.edu

Student housing information, application:
University Housing and Dining
The University of Iowa
8 Burge Hall
Iowa City, IA 52242-1214
Phone: 1-319-335-3000
E-mail: reshall-housing@uiowa.edu
Web site: http://housing.uiowa.edu

Scholarships, grants, loans, student employment:
Office of Student Financial Aid
The University of Iowa
208 Calvin Hall
Iowa City, IA 52242-1315
Phone: 1-319-335-1450
E-mail: financial-aid@uiowa.edu
Web site: http://financialaid.uiowa.edu

Equal opportunity/nondiscrimination:
Office of Equal Opportunity & Diversity
The University of Iowa
202 Jessup Hall
Iowa City, IA 52242-1316
Phone: 1-319-335-0705
E-mail: diversity@uiowa.edu
Web site: http://diversity.uiowa.edu/office/equal-opportunity-and-diversity
Colleges and Other Academic Units

The University of Iowa offers academic programs and courses through its 11 colleges, University College, and the Division of Continuing Education. For information on each unit, including its constituent departments, programs, and schools and its academic programs (degrees, certificates, minors), click on the following links. University courses are listed under the units that offer them.

- College of Liberal Arts and Sciences (p. 24)
- Tippie College of Business (p. 642)
- College of Dentistry (p. 704)
- College of Education (p. 735)
- College of Engineering (p. 831)
- Graduate College (p. 916)
- College of Law (p. 969)
- Carver College of Medicine (p. 1005)
- College of Nursing (p. 1110)
- College of Pharmacy (p. 1128)
- College of Public Health (p. 1143)
- University College (p. 1189)
- Division of Continuing Education (p. 1260)
College of Liberal Arts and Sciences

Dean
• Chaden Djalali

Associate dean for graduate and online education
• Marc Armstrong

Associate dean for undergraduate programs and curriculum
• Helena Dettmer

Associate dean for research and development
• Joseph K. Kearney

Executive associate dean
• Raúl Curto

Undergraduate majors: B.A.; B.S.; B.F.A.; B.L.S.; B.M.
Graduate degrees: programs leading to M.A.; M.S.; M.F.A.; Ph.D. (degrees conferred by Graduate College)
Web site: http://clas.uiowa.edu/

The College of Liberal Arts and Sciences (CLAS), established in 1900, is the largest of the 11 colleges that comprise the University of Iowa, with 39 departments spanning the visual, performing, and cinematic arts; humanities; natural and mathematical sciences; social and behavioral sciences; and communication disciplines.

More than 16,500 undergraduates are currently enrolled in the College, and more than 2,300 graduate students are enrolled in programs offered by CLAS departments. In any given year, the College awards about 70 percent of the University's undergraduate degrees, and 45 percent of the University's graduate degrees are awarded to students studying in CLAS departments.

CLAS students can choose from 64 undergraduate majors, 65 minors, and 15 interdisciplinary certificate programs. Students are encouraged to combine areas of study to create unique academic portfolios that help them to develop their talents and a breadth of knowledge.

About 56 percent of the College's undergraduate students come from Iowa, representing all 99 counties. Fifty-six percent of CLAS students are female. About 1,900 international students study in CLAS—approximately 11 percent of the College's total enrollment—and almost 2,700 of these students (about 16 percent) identify as coming from U.S. minority populations. During the last decade, CLAS has awarded more than 28,000 undergraduate degrees; there are currently almost 140,000 living alumni of the College of Liberal Arts & Sciences, including more than 40,000 in Iowa.

The College has more than 650 tenured and tenure-track faculty members devoted to teaching, research, and service to their disciplines as well as to the University and to the state of Iowa. In fiscal year 2014, CLAS faculty garnered about $43.5 million in external research funding.

CLAS Web Site

The College of Liberal Arts and Sciences web site contains a wealth of information for students and faculty members.

The CLAS Office of Academic Programs & Student Development page is devoted to undergraduate students and their advisors. It provides information on academic policies and procedures, including requirements of the CLAS General Education Program (see Academic Policies Handbook). Information about scholarships, service opportunities, and upcoming deadlines also is available on this page and on the For Students pages.

The CLAS Departments and Divisions link provides a list of the college's departments, programs, and schools as well as its undergraduate majors, minors, and certificates.

Faculty members turn to the CLAS web site for information about teaching, curriculum, and resources for advising and instructing students. They also find updates on important CLAS committees as well as a link to the Dean's Office.

Office of Academic Programs & Student Development

Located in Schaeffer Hall, at the center of campus, the Office of Academic Programs & Student Development is an integral part of the College of Liberal Arts and Sciences. The office's staff, led by the associate dean for undergraduate programs and curriculum, welcomes students wishing to declare or change majors; file second-grade-only options; or petition to register late, add or drop a course late, or withdraw an entire registration after the established deadlines.

The office's staff members answer students' questions concerning academic requirements and programs of study. They meet with students about General Education Program requirements, graduation requirements, collegiate policies that affect students, and a range of other issues, including academic probation and dismissal and strategies for the successful completion of a degree.

Students in the College of Liberal Arts and Sciences may petition for exceptions to CLAS rules and requirements in the Office of Academic Programs & Student Development. Students may discuss their questions and the petition process first with an associate director in the office.

The office works closely with students on academic probation and counsels them on strategies for success. It conducts semiannual reviews of students on academic probation, handles dismissals from the college, and considers requests for reinstatement.

The Office of Academic Programs & Student Development also oversees appropriate disciplinary action for academic misconduct, such as plagiarism.

General Education Program

All students entering the College of Liberal Arts and Sciences who wish to earn a Bachelor of Arts (B.A.), Bachelor of Science (B.S.), Bachelor of Fine Arts (B.F.A.), or Bachelor of Music (B.M.) degree must complete the requirements of the CLAS General Education Program in addition to the requirements of their major and other requirements for graduation.
The General Education Program requires students to explore topics outside of their chosen major, helping students to acquire the knowledge and transferable skills necessary for becoming well-educated individuals. During this exploration of General Education topics and courses, many students also discover intriguing majors, minors, and certificates that challenge them to embrace personal transformation and related goals.

The General Education requirements must be completed before graduation; most students complete the majority of these requirements during the first two years at Iowa, especially since General Education courses stress the transferable skills of critical thinking, writing, and speaking that help students to be more successful in their studies.

For General Education requirements, related academic policies, and lists of approved courses, see General Education Program (p. 313) in the Catalog.

CLAS Units and Academic Programs

Undergraduate Majors, Certificates, and Minors

The College of Liberal Arts and Sciences has 39 departments and offers 64 undergraduate majors, 65 minors, and 15 interdisciplinary certificate programs.

In addition, CLAS students may declare a number of majors offered by other undergraduate colleges at the UI, with the College of Liberal Arts and Sciences granting the degree. The Tippie College of Business offers a major in economics (B.A. and B.S.), and with the College of Liberal Arts and Sciences, sponsors a major in enterprise leadership (B.A.). The Carver College of Medicine offers majors in biochemistry (B.A. and B.S.) and in microbiology (B.S.); and the College of Education offers majors in elementary education (B.A. and B.S.) and in science education (B.S.). For descriptions of the above majors and their requirements, see "Majors Offered with Other Colleges" under "Index: Academic Programs" on this page.

The College of Education offers a Teacher Education Program leading to licensure at the secondary level for students who have completed certain CLAS majors, such as art, English, mathematics, the sciences, and world languages, and who wish to work with students in middle school or high school. Students must apply for admission to the Teacher Education Program; contact the College of Education's Office of Education Services.

Students who begin their study in the College of Liberal Arts and Sciences may apply to degree programs in other colleges at the University of Iowa. If they are accepted, they may earn undergraduate degrees in business (B.B.A.) or nursing (B.S.N.); a B.S. with a major in medical laboratory science, nuclear medicine technology, or radiation sciences; or a professional degree in pharmacy (Pharm.D.). Use the Catalog's A-Z Directory to link to these programs.

Students who are interested in earning a professional or graduate degree in addition to a bachelor's degree may apply to early admission or joint degree programs offered through partnerships between CLAS and other UI colleges. Students admitted to these programs may count a limited amount of credit toward both degrees. CLAS has early admission programs with the College of Dentistry (D.D.S. (p. 707)) and the College of Law (J.D. (p. 969)). Joint bachelor's/graduate degree programs are available in several disciplines; see "Joint Programs" in the Graduate (p. 916) section of the Catalog.

The College of Liberal Arts and Sciences offers a wide selection of undergraduate certificates and minors, including two certificates offered with other colleges: the Certificate in International Business (with the Tippie College of Business) and the Certificate in Wind Energy (with the College of Engineering). Find CLAS certificates and minors under "Index: Academic Programs" on this page.

CLAS students also may earn undergraduate certificates and minors offered by other colleges. The Tippie College of Business offers certificate programs in entrepreneurial management and in risk management and insurance, and a minor in business administration. The College of Public Health offers an undergraduate public health certificate, and University College offers certificate programs in clinical and translational science, human rights, leadership studies, nonprofit management, and sustainability. The College of Education offers minors in educational psychology and in human relations. For lists of all undergraduate certificates and minors offered by the University, see Certificates (p. 11) and Minors (p. 12) in the Academics at Iowa section of the Catalog.

Graduate Degrees and Certificates

The College of Liberal Arts and Sciences offers graduate programs in most of its disciplines, with degrees conferred by the Graduate College. Students may earn degrees at the master's and doctoral levels; graduate certificates are available in some areas of study. See the Graduate (p. 916) College section of the Catalog for a complete list of graduate degrees offered by the University.

For information about specific CLAS graduate programs, see the links under "Index: Academic Programs" on this page.

Nondepartmental Courses

Most College of Liberal Arts and Sciences courses are offered by the college's departments, programs, and schools. They are listed and described in the corresponding General Catalog sections; see the links under "Index: Academic Programs" on this page.

The college also offers the following nondepartmental courses.

Lower-Level Undergraduate

CLAS:1000 First-Year Seminar 1 s.h.

Small discussion class taught by a faculty member; topics chosen by instructor; may include outside activities (e.g., films, lectures, performances, readings, visits to research facilities). Requirements: first- or second-semester standing.
CLAS:1001 CLAS Master Class 1-3 s.h.
Exploration of a single topic in a series of lectures by faculty presenting divergent perspectives; illuminates intellectual adventure inherent in liberal arts and sciences; encourages discovery of majors and other areas of study within the College of Liberal Arts and Sciences. Same as RELS:1010, THTR:1001, CS:1001, CSD:1001, PHIL:1001, ENGL:1001, BIOC:1001, ARTS:1001.

CLAS:1050 Understanding U.S. Dialects 1 s.h.
Introduction and overview of American English sound system; survey of major U.S. dialects; analysis of social and political issues related to dialects. Same as ESL:1050.

CLAS:1150 Introduction to the U.S. Constitution 1 s.h.
Origin and analysis of the U.S. Constitution; current constitutional questions and related issues. Same as ESL:1150.

CLAS:1220 Exploring Cultural Values Through the Arts 1 s.h.
Survey of major world cultures; analysis of artistic works; relationship between art and culture and its significance. Same as ESL:1200.

CLAS:1250 Presentation Skills for Academic Success 1 s.h.
Organization and coherence of materials; intelligibility of speech and clarity of expression; active participation and practice in recorded presentations; for students whose first language is not English. Same as ESL:1250.

CLAS:1350 Exploring the Civil Rights Movement Through the Arts 1 s.h.
How art reflects or influences society; history of Civil Rights Movement in mid-20th century and the many ways it has been documented; focus of authors, poets, and musicians on inequality in first half of century; playwrights and filmmakers contribution to change and continued documentation of era after legislation was passed in 1960s; examination of various media, discussions, presentations, writing. Same as ESL:1300.

CLAS:1600 Life Design: Building Your Future 1 s.h.
How interests and talents can be paired up to achieve a fulfilling life; what students are passionate about; address questions (i.e., How can you identify what you’re good at? How can you build a life of purpose and meaning? How can you cultivate mentors? What is the relationship between ambition, drive, and success? What major might be the best fit and how can University resources help your academic and personal success?); portfolio of reflective exercises, activities, journal assignments.

CLAS:1700 Got CLAS? Blending College of Liberal Arts and Sciences Majors with Your Passions 1 s.h.
Process of choosing a major; focus on strengths, discover passions, and dream of possibilities while cultivating an active, complementary university experience; develop mentoring relationships with faculty, voice fears about choosing a major and career, take risks in revising and expanding life and career expectations; introduction to majors within the College of Liberal Arts and Sciences (CLAS); assessments to define strengths and interests, reflection of experiences. Recommendations: first-year undergraduate standing and College of Liberal Arts and Sciences open major.

Upper-Level Undergraduate and Graduate

CLAS:3111 Reimagining Downtown 3 s.h.
Interdisciplinary perspective; assist upper-level undergraduates apply their education and creativity toward a specific initiative, the Downtown Project, located in the Fremont East and Arts District areas of Las Vegas, Nevada. Requirements: junior or senior standing and admission by application.

CLAS:3200 International Perspectives: Xicotepec 1-3 s.h.
Interdisciplinary service-learning course; Mexican culture and history through community-based service project, assigned readings, and discussion; includes a required spring break trip to Mexico. Same as SOC:3200.

CLAS:4100 Peer Mentoring 1-2 s.h.
Opportunities to participate in classroom and course activities as mentors for other students.

CLAS:4200 Undergraduate Internship arr.
Professional and/or creative experience for writing certificate students; students must arrange an on- or off-campus internship with faculty advisor approval. Requirements: undergraduate standing and a minimum of 24 s.h. of course work with at least 12 s.h. in University of Iowa courses.

Graduate

CLAS:5100 Practicum: College Teaching and Professional Development for Teaching Assistants arr.
Guidance for teaching assistants seeking introduction to teaching at college level; focus on practical pedagogical concerns, including how to structure a course, devise learning outcomes, develop a syllabus and a calendar of assignments, evaluate student work, and create a student-centered classroom with collaborative learning experiences; pre-semester intensive training session, weekly meetings during first month of semester, periodic meetings to address midterm and late-semester issues; concurrent with TA teaching assistantships. Recommendations: interest in teacher training and preparation.

General Education

General Education Program (p. 313)

Departments, Programs, and Schools

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American Studies (p. 44)
Anthropology (p. 55)
Art and Art History (p. 74)
Biology (p. 119)
Biomedical Sciences (p. 133)
Chemistry (p. 135)
Cinematic Arts (p. 143)
Classics (p. 149)
Communication Sciences and Disorders (p. 165)
Communication Studies (p. 177)
Computer Science (p. 198)
Creative Writing (Iowa Writers' Workshop) (p. 212)
Division of Interdisciplinary Programs (p. 226)
  Enterprise Leadership (p. 273)
  Global Health Studies (p. 343)
  Interdepartmental Studies (p. 396)
  International Studies (p. 415)
  Latin American Studies (p. 446)
  Writing (p. 638)
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  Dance (p. 215)
  Music (p. 473)
  Theatre Arts (p. 625)
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  Translation (p. 635)
  Translation for Global Literacy (p. 637)
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Environmental Sciences (p. 278)
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Philosophy (p. 500)
Physics and Astronomy (p. 507)
Political Science (p. 520)
Psychological and Brain Sciences (p. 536)
Religious Studies (p. 548)
Rhetoric (p. 560)
Social Work (p. 572)
Sociology (p. 585)
Statistics and Actuarial Science (p. 613)

**Majors Offered with Other Colleges**
Biochemistry (p. 1021)
Economics (p. 664)
Elementary Education (p. 243)
Enterprise Leadership (p. 273)
Microbiology (p. 1050)
Science Education (p. 788)

**Certificate Programs**
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American Indian and Native Studies (p. 37)
American Sign Language (p. 41)
Critical Cultural Competence (p. 214)
Disability Studies (p. 224)
Event Planning (p. 289)
Fundraising and Philanthropy Communication (p. 301)
Global Health Studies (p. 343)
International Business (p. 408)
Large Data Analysis (p. 445)
Latin American Studies (p. 446)
Medieval Studies (p. 467)
Museum Studies (p. 470)
Performing Arts Entrepreneurship (p. 498)
Social Science Analytics (p. 571)
Wind Energy (p. 915)
Writing (p. 638)
African American Studies

**Chair**
- Horace Porter

**Undergraduate major:** African American studies (B.A.)
**Undergraduate minor:** African American studies

**Graduate degree:** M.A. in African American world studies

**Faculty:** [http://clas.uiowa.edu/afam/people/faculty](http://clas.uiowa.edu/afam/people/faculty)
**Web site:** [http://clas.uiowa.edu/afam/](http://clas.uiowa.edu/afam/)

African American studies focuses on the study of people of African descent in the United States and the African diaspora. The African American Studies Program originated in 1969 through courses intended to foster awareness of African Americans' role in the development of the United States and the world. Because a thorough understanding of the African American experience cannot be achieved through study restricted to the perspective of a single discipline, all students are required to pursue courses in the humanities, social sciences, and performing arts.

The African American Studies Program draws upon faculty from American studies; communication studies; education; English; gender, women's, and sexuality studies; health and human physiology; history; journalism and mass communication; religious studies; rhetoric; sociology; sport studies; and theatre arts.

**Undergraduate Programs of Study**
- Major in African American studies (Bachelor of Arts)
- Minor in African American studies

**Bachelor of Arts**

The Bachelor of Arts with a major in African American studies requires a minimum of 120 s.h., including at least 30 s.h. of work for the major. Students must maintain a g.p.a. of at least 2.00 in all courses for the major and in all UI courses for the major. They also must complete the College of Liberal Arts and Sciences General Education Program (p. 313). Transfer credit is evaluated individually and is limited to a maximum of 9 s.h.

**INTRODUCTORY COURSES**

Students are required to complete the following introductory courses.

- **AFAM:1020/AMST:1030 Introduction to African American Culture**
  - 3 s.h.
- **AFAM:1030 Introduction to African American Society**
  - 3 s.h.

Introduction to African American Culture [AFAM:1020] presents themes in African American cultural studies. It includes readings in literature, music, film studies, religious studies, and the visual and performing arts.

Introduction to African American Society [AFAM:1030] examines the construction of social and historical institutions in the United States and the African diaspora (e.g., Black church, Black family, gender, sexuality). The course may include readings in political science, religion, history, sociology, geography, anthropology, and other disciplines.

**AFRICAN AMERICAN STUDIES CORE**

In addition to the two required introductory courses, all students must complete at least two courses from each of the three topical areas below (minimum of 18 s.h.). Additional courses may be approved for the topical areas; consult with an African American studies advisor.

**History, Religion, and the Diaspora**

Two of these:

- **AFAM:1250/RELS:1350 Introduction to African American Religions**
  - 3 s.h.
- **AFAM:2265/HIST:2265 Introduction to African American History**
  - 3 s.h.
- **AFAM:2730/RELS:2730 African American Islam**
  - 3 s.h.
- **AFAM:3245/RELS:3745 Twentieth-Century African American Religion: Civil Rights to Hip-Hop**
  - 3 s.h.
- **AFAM:3555/ENGL:3555 Topics in African Cinema**
  - 3 s.h.
- **AFAM:3900 Topics in African American Studies (when topic is history, religion, or the diaspora)**
  - arr.
- **AFAM:4195/HIST:4295 African American History 1619-1865**
  - 3 s.h.
- **AFAM:4275/HIST:4275 African American History 1865-Present**
  - 3-4 s.h.
- **AFAM:4298/HIST:4296 African American History 1865-Present**
  - 3 s.h.
- **AFAM:4310/HIST:4710 Pre-Colonial African History**
  - 3 s.h.
- **AFAM:4715/HIST:4715 African American History Since 1880**
  - 3 s.h.
- **AFAM:7205/GWSS:7205 Gender and Race in Nineteenth-Century U.S.**
  - arr.
- **EPLS:5126 Twentieth-Century Educational Movements**
  - 2-3 s.h.

**Literature and Performing Arts**

Two of these:

- **AFAM:1240 The Art of Listening to Jazz**
  - 3 s.h.
- **AFAM:1241 The Soundtrack of Black America**
  - 3 s.h.
- **AFAM:1820 Everybody is a Star: Black Celebrity Since 1968**
  - 3 s.h.
- **AFAM:1830 Music of the African American Diaspora**
  - 3 s.h.
- **AFAM:2014 Giants of Jazz: Miles, Trane, and Duke**
  - 3 s.h.
- **AFAM:2465/ENGL:2465 Selected African American Authors**
  - 3 s.h.
- **AFAM:2781/ENGL:2460 Black Literature and Politics: Controversies of National Allegiance**
  - 3 s.h.
- **AFAM:3459/ENGL:3459 African American Literature Before 1900**
  - 3 s.h.
- **AFAM:3460/ENGL:3460 African American Literature After 1900**
  - 3 s.h.
- **AFAM:3462/THTR:3462 African American Drama**
  - 3 s.h.
- **AFAM:3465/ENGL:3465 African American Autobiography**
  - 3 s.h.
- **AFAM:3710/GWSS:3710 African American Women Writers**
  - 3 s.h.
AFAM:3811/THTR:3411 African American Theatre II
AFAM:3900 Topics in African American Studies (when topic is literature or performing arts)
AFAM:4710/ENGL:4410 Midwest African American Literature and Culture

**Media, Politics, and Social Institutions**

Two of these:

AFAM:2064/SOC:2064 Racial Inequity and the Experiences of African American Families in the U.S.
AFAM:2070/COMM:2069 Black TV Drama: The Wire
AFAM:2076/COMM:2076 Race, Ethnicity, and Media
AFAM:2079/SPST:2079 Race and Ethnicity in Sport
AFAM:3053/AMST:3053 The Civil Rights Movement
AFAM:3130 Black American Cinema
AFAM:3400/AMST:3400 Black Popular Music
AFAM:3500/RELS:3808 Malcolm X, King, and Human Rights
AFAM:3900 Topics in African American Studies (when topic is media, politics, or social institutions)
AFAM:3925/JMC:3165 African Americans and the Media
AFAM:4001/COMM:4172 Television and African American Culture

**ELECTIVES**

Students also must take two elective courses (minimum of 6 s.h.) selected from the three topical areas listed above. With the approval of an African American studies advisor, students may substitute relevant courses offered by other departments for one or both electives; the substituted courses may not be cross-listed with African American studies. Students must gain the advisor's approval before enrolling in a substitute course.

Two electives selected from the three topical areas above, or approved substitutes 6 s.h.

**LANGUAGE REQUIREMENT**

The language requirement for the African American studies major is the same as the World Languages requirement of the College of Liberal Arts and Sciences General Education Program (p. 313). Students are encouraged, but not required, to take African language courses (Swahili is currently offered) or Spanish language courses to fulfill the World Languages requirement.

**Four-Year Graduation Plan**

The following checkpoints list the minimum requirements students must complete by certain semesters in order to stay on the University's Four-Year Graduation Plan. (Courses in the major are those required to complete the major; they may be offered by departments other than the major department.)

During the first year of study, students should focus on completing the General Education Program, perhaps including Swahili or Spanish course work to begin satisfying the World Languages requirement.

**Before the fifth semester begins:** at least three courses in the major, including AFAM:1020 Introduction to African American Culture and AFAM:1030 Introduction to African American Society

**Before the seventh semester begins:** at least seven courses in the major and at least 90 s.h. earned toward the degree

**Before the eighth semester begins:** at least nine courses in the major

**During the eighth semester:** enrollment in all remaining course work in the major, all remaining General Education courses, and a sufficient number of semester hours to graduate

**Honors in the Major**

Honors in the African American studies major offers students the opportunity to pursue special interests and individual in-depth research. Honors students must maintain a cumulative University of Iowa g.p.a. of at least 3.33 and complete all required course work for the major (30 s.h.). Those who wish to graduate with honors in the African American studies major should register for up to 6 s.h. of AFAM:4990 Honors Project. Work in this course enhances the student's ability to complete honors projects under the guidance of the supervising faculty member. Students enroll in AFAM:4990 with the approval of their African American studies advisor, who typically supervises the course. They may count up to 6 s.h. earned in AFAM:4990 toward the 30 s.h. required for the major.

Under the guidance of the African American studies advisor, an honors student defines a research project (thesis) using primary, secondary, or archival sources. Students submit a project proposal by the end of their junior year. They also complete a thesis under the guidance of a supervising faculty member and present the results as a senior essay to a committee of two faculty members, including the supervising African American studies faculty member and one other African American studies faculty member, chosen in consultation with the supervisor. A student's committee may choose to hear an oral defense of the honors thesis, usually during the student's last semester.

Honors students in African American studies must be members of the University of Iowa Honors Program, which requires students to maintain a cumulative University of Iowa g.p.a. of at least 3.33 and to fulfill other requirements; visit Honors at Iowa to learn about the University's honors program.

**Minor**

The minor in African American studies requires a minimum of 15 s.h., including 12 s.h. taken at the University of Iowa. Students must maintain a cumulative g.p.a. of at least 2.00 in all courses for the minor and in all UI courses for the minor. Course work in the minor may not be taken pass/nonpass. Course work completed for another major
or minor may not be counted toward the minor in African American studies.

The minor must include the following course work.

Introductory courses (6 s.h.):

- AFAM:1020/AMST:1030 Introduction to African American Culture 3 s.h.
- AFAM:1030 Introduction to African American Society 3 s.h.

African American studies core—all of these (9 s.h.), with at least two courses taken at the University of Iowa:

- One course listed under “History, Religion, and the Diaspora” above
- One course listed under “Literature and Performing Arts” above
- One course listed under “Media, Politics, and Social Institutions” above

Graduate Program of Study

- Master of Arts in African American world studies

African American studies is not accepting graduate students in 2015-16.

Graduate Seminar

Graduate students from a range of disciplines in the College of Liberal Arts and Sciences are encouraged to participate in the program’s interdisciplinary graduate seminar, which is dedicated to advanced readings, scholarly books, and articles in African American studies.

Cocurricular Activities

Afro-American Cultural Center

African American studies encourages students to use facilities of the Afro-American Cultural Center. The center serves as a museum and library of educational and cultural artifacts and exhibits of African American culture, providing cultural enrichment for the Iowa City community and promoting diversity among all members of the University community. It also provides a cultural meeting place for African American students.

African American Studies Student Association

The African American Studies Student Association aims to promote knowledge about people of African descent by sponsoring programs on various topics. Any University of Iowa student interested in African American studies is eligible to become a member.

Graduate Student Mentoring and Advising

African American studies sponsors several intellectual and social gatherings for graduate students across disciplines. During these events, students connect with others interested in African Americans studies and receive advice about becoming faculty members and being productive members of the academic profession.

Seminar and Lecture Series

The African American Studies Seminar Series and the Darwin Turner Lecture bring important scholars and creative artists to the University of Iowa campus. Guests of the lecture and seminar series have included Amiri Baraka, Michelle Wallace, and Valerie Smith.

The New Research in African American Studies lecture series, sponsored by the College of Liberal Arts and Sciences, focuses on research by faculty in the African American Studies Program.

Courses

Lower-Level Undergraduate

- AFAM:1000 First-Year Seminar 1 s.h.
  Small discussion class; topics chosen by instructor.
  Requirements: first-year standing.

- AFAM:1020 Introduction to African American Culture 3 s.h.
  Interdisciplinary look at Black culture in the United States through significant contributions of the humanities (music, art, literature, drama, philosophy) to development of Black culture. GE: Values, Society, and Diversity. Same as AMST:1030.

- AFAM:1030 Introduction to African American Society 3 s.h.
  Social and cultural history of African Americans through framework of general works in anthropology, sociology, history. GE: Social Sciences; Values, Society, and Diversity.

- AFAM:1240 The Art of Listening to Jazz 3 s.h.
  What is jazz and its importance; guided introduction to jazz music, anatomy of jazz music, cultural context; development of skills to become an informed listener; process of performing jazz music, its connection with Black culture; focused listening/analysis of prominent jazz artists’ work from past and present, including intersection between jazz and hip hop; formal music experience or training not required.

- AFAM:1241 The Soundtrack of Black America 3 s.h.
  Linkage of African American culture and music; Black musical innovations that shaped mainstream American musical tastes over the last century; exploration of relationship between Black music and culture; examples of blues, jazz, gospel, hip hop; artists including Bessie Smith (blues), Mahalia Jackson (gospel), Miles Davis (jazz), Nas and Talib Kweli (hip hop).

- AFAM:1250 Introduction to African American Religions 3 s.h.
  GE: Values, Society, and Diversity. Same as RELS:1350.

- AFAM:1820 Everybody is a Star: Black Celebrity Since 1968 3 s.h.
How shifts in social access after 1968 meant that renowned blacks no longer automatically saw themselves as freedom fighters; effects of change shown in Michael Jackson's career, Barack Obama's election, and fame of Beyoncé, Lil' Wayne, and Oprah; analysis of black celebrity from 1968 to 2012 with focus on Muhammad Ali, Dianna Ross, Whitney Houston, Denzel Washington, Michael Jordon, Stevie Wonder, T.D. Jakes, Condoleezza Rice, Jay Z, LeBron James; black celebrity influence on post-civil rights understandings of gender, class, sexuality, politics; biographies, cultural criticism, music videos, movies, documents.

AFAM:1830 Music of the African American Diaspora 3 s.h.
History and characteristics of music styles emerging from African American culture from time of slavery to present; beginning with Negro spiritual, exploration of origins and musical anatomy of relevant music styles (blues, gospel, jazz, rhythm and blues, funk); ubiquitous role music plays in civil, cultural, and political unrest amongst African American community throughout 20th century.

AFAM:2014 Giants of Jazz: Miles, Trane, and Duke 3 s.h.
Miles Davis, John Coltrane and Duke Ellington as figureheads of the Jazz music style; how they changed the trajectory of modern music along with sidemen (B. Strayhorn and H. Hancock); Ellington's resolute defiance of stereotypical views of African Americans; Miles' brazen protests against civil injustices; how these icons are much more than mere musicians; cultural impact of landmark albums including "Kind of Blue," "A Love Supreme," and "The Birth of the Cool"; focus on their life, music and sociopolitical impact. Same as MUS:2014.

AFAM:2055 The Look of Blackness: African American Literature and Visual Art 3 s.h.
Examination of African American literature over a 200-year span; how preoccupation with blackness as a visual marker of difference impacts formation of written works; how black writers wield, emphasize, and manipulate visuality; blackness foregrounded as if literary texts operate in league with, or in defiance of, visual images circulating throughout American culture, from late 18th-century poetry to mid 20th-century novels; primary texts placed alongside high art and popular visual forms of distinct historical moments to explore how black American writers deploy visual art forms in narrative conceptions of black identity. Same as ENGL:2462.

AFAM:2064 Racial Inequity and the Experiences of African American Families in the U.S. 3 s.h.
Racial inequality and experiences of African American families in the U.S. during 20th and 21st centuries; historical context for contemporary research on African American family; relative impact of structural and cultural factors on various aspects of African American family life, declining marriage rates, family formation patterns; intersections of race and class in family life; research methods used to examine dynamics of African American family life, including quantitative analysis, structured qualitative interviews, and ethnography. Same as SOC:2064.

AFAM:2070 Black TV Drama: The Wire 3 s.h.
Social and political impact of television dramas featuring people of African descent in the West; HBO's The Wire series—a social commentary, commercial, and aesthetic force—has pioneered new ways of thinking about the relationship between media and society at large while revolutionizing ways in which black urban life is portrayed in today's world; focus on complex intersections between urban poverty, education, and political system, crime, mediation in Western society. Same as COMM:2069.

AFAM:2076 Race, Ethnicity, and Media 3 s.h.
Introduction to debates about media portrayals of race and ethnicity; focus primarily on entertainment media; use of general analytic perspectives (stereotype analysis, aesthetic analysis, history) applied to real-world examples; address one or more racial/ethnic groups in the United States. Prerequisites: (COMM:1112 or COMM:1170) and (COMM:1117 or COMM:1130) and (COMM:1168 or COMM:1174) and COMM:1301 and COMM:1305. Requirements: g.p.a. of at least 2.30 and completion of four of five Foundations of Communication courses. Same as COMM:2076.

AFAM:2079 Race and Ethnicity in Sport 3 s.h.
Structural and ideological barriers to racial and ethnic equality in sport, with focus on African American sport experiences; historical and contemporary issues, media representations. Same as SPST:2079.

AFAM:2265 Introduction to African American History 3 s.h.
GE: Values, Society, and Diversity. Same as HIST:2265.

AFAM:2465 Selected African American Authors 3 s.h.
English majors may apply this course to the following area and/or period requirement. AREA: American Literature and Culture. PERIOD: 20th/21st-Century Literature. Same as ENGL:2465.

AFAM:2730 African American Islam 3 s.h.
Same as RELS:2730.

AFAM:2781 Black Literature and Politics: Controversies of National Allegiance 3 s.h.
Black literature born amid political controversy, from slave narratives to award-winning texts of late 20th century; evolving politics of African American writers; changing political landscape of this expansive period and representative literature; how African American writers shape U.S. political debate; surprising politics of many canonical African American writers. English majors may apply this course to the following area and/or period requirement. AREA: American Literature and Culture. PERIOD: 18th/19th-Century Literature, or 20th/21st-Century Literature. Same as ENGL:2460, POLI:2107.

Upper-Level Undergraduate and Graduate

AFAM:3053 The Civil Rights Movement 3 s.h.
History of the American civil rights movement. Same as AMST:3053.
AFAM:3130 Black American Cinema 3 s.h.
Major historical and cultural movements in Black cinema; independent and early Hollywood films, animation, Blaxploitation, the Black Renaissance, Black auteurs (e.g., Spike Lee, Julie Dash), hip-hop cinema, womanist films, 21st-century developments in film (e.g., theatre to film adaptations of Tyler Perry), new media's effect on film and cinema; particular attention given to gender, sexualities, region, ethnicity, and class. Same as AMST:3130.

AFAM:3245 Twentieth-Century African American Religion: Civil Rights to Hip-Hop 3 s.h.
Twentieth-century African American religious history; major political and cultural movements, such as civil rights, black power, black feminism/womanism, hip-hop. Same as RELS:3745.

AFAM:3400 Black Popular Music 3 s.h.
History and expressive culture of people of African descent living in America through popular music forms; historical time span between the 17th and 21st centuries; poetry, music, cultural analysis, film, and art as sources for the study of Black music; genres covered include spirituals and gospel, blues, jazz, rock, rhythm and blues, Afropunk, alternative and neo soul, and hip-hop. Recommendations: AFAM:1020 and AMST:1030. Same as AMST:3400.

AFAM:3459 African American Literature Before 1900 3 s.h.
English majors may apply this course to the following area and/or period requirement. AREA: American Literature and Culture. PERIOD: 18th/19th-Century Literature. Same as ENGL:3459.

AFAM:3460 African American Literature After 1900 3 s.h.
English majors may apply this course to the following area and/or period requirement. AREA: American Literature and Culture. PERIOD: 20th/21st-Century Literature. Same as ENGL:3460.

AFAM:3462 African American Drama 3 s.h.
English majors may apply this course to the following area and/or period requirement. AREA: American Literature and Culture. PERIOD: 18th/19th-Century Literature, or 20th/21st-Century Literature. Same as ENGL:3462, THTR:3462.

AFAM:3465 African American Autobiography 3 s.h.
English majors may apply this course to the following area and/or period requirement. AREA: American Literature and Culture. PERIOD: 20th/21st-Century Literature. Same as ENGL:3465.

AFAM:3500 Malcolm X, King, and Human Rights 3 s.h.
Religion and politics of Malcolm X and Martin Luther King, Jr. in the context of U.S. civil rights and international human rights in West Africa and the Muslim world; emphasis on civil rights connections to Gandhi, the Nobel Peace prize, and other international experiences that have impacted Pan Africanists, such as Stokely Carmichael, who worked on human rights. Recommendations: international studies major or undergraduate standing. Same as RELS:3808.

AFAM:3550 African Literature 3 s.h.
English majors may apply this course to the following area and/or period requirement. AREA: Transnational Literature and Postcolonial Studies. PERIOD: 20th/21st-Century Literature. Same as ENGL:3550.

AFAM:3555 Topics in African Cinema 3 s.h.
English majors may apply this course to the following area and/or period requirement. AREA: Transnational Literature and Postcolonial Studies. PERIOD: 20th/21st-Century Literature. Same as ENGL:3555.

AFAM:3710 African American Women Writers 3 s.h.
Introduction to major African American women authors of the 19th, 20th, and 21st centuries; major debates of black feminist literary scholarship; analyze African American literary representations by reading novels, poetry, short stories, plays, relevant historical and critical texts. GE: Values, Society, and Diversity. Same as GWSS:3710.

AFAM:3810 African American Theatre I 3 s.h.
Works by African American playwrights and relevant historical documents, Africa through Black Renaissance; themes, history, sociopolitical context; artists forging theatrical paths under oppressive conditions; exploration through discussion, performance; literature-based course, workshop approach. Same as THTR:3410.

AFAM:3811 African American Theatre II 3 s.h.
Works by African American playwrights and relevant historical documents, Black Renaissance to present; themes, history, sociopolitical context; artists forging theatrical paths under oppressive conditions; exploration through discussion, performance; literature-based course, workshop approach. Same as THTR:3411.

AFAM:3840 Free-Style Writing: Poetry, Plays, and Performances 3 s.h.
Creative writing lab experience in reading, writing, and performing poetry and short plays; expansion of students' horizons of the self; arc of innovation in African American literature from Harlem Renaissance to present, with texts from Langston Hughes and Zora Neale Hurston to Saul Williams and Jill Scott; role of the artist in society and as outsider and insider; shifting perspectives on race, gender, class; musical influences and models, from blues to house music; sensuality, spirituality; artistic reflections on the cultural moment; effects of these on literary form and performance style; students create and perform a work for an audience. Same as THTR:3403.

AFAM:3900 Topics in African American Studies arr.
Different topic each semester.
AFAM:3925 African Americans and the Media 3 s.h.
GE: Values, Society, and Diversity. Same as JMC:3165.

AFAM:4001 Television and African American Culture 3 s.h.
Role of television in African American culture; examination of debates, stereotyping, authenticity, effects of programming, aesthetics, and television's relationship to other forms of cultural expression. Requirements: for COMM:4172 or communication studies major — COMM:1112, COMM:1170, COMM:1301, or COMM:1305, COMM:1117 or COMM:1130, COMM:1168 or COMM:1174, g.p.a. of at least 2.30, completion of Foundations of Communication requirement, and 6 s.h. of intermediate-level course work. Same as COMM:4172.

AFAM:4195 African American History 1619-1865 3 s.h.
Race and African American history, from the rise of racial slavery to the Civil War; advanced course. Same as HIST:4295.

AFAM:4275 History of Slavery in the U.S.A. 3-4 s.h.
Beginning, expansion, and ending of American slavery; how our national memory of slavery in popular culture (in high school history, in historical landmarks and museums) helps or hinders our understanding of history of slavery in the U.S. Same as HIST:4275.

AFAM:4298 African American History 1865-Present 3 s.h.
African American history since Reconstruction; survey of African American politics and society from Reconstruction to present. Same as HIST:4296.

AFAM:4310 Pre-Colonial African History 3 s.h.
Africa to 1880; oral tradition, other sources; political development, ecological change, slavery and slave trade. GE: Historical Perspectives. Same as HIST:4710.

AFAM:4710 Midwest African American Literature and Culture 3 s.h.
English majors may apply this course to the following area and/or period requirement. AREA: American Literature and Culture. PERIOD: 20th/21st-Century Literature. Same as ENGL:4410.

AFAM:4715 African History Since 1880 3 s.h.
Africa in colonial, post-colonial period; economics, political structures of colonialism; social change, political life in the 20th century. GE: International and Global Issues. Same as HIST:4715.

AFAM:4910 Special Topics 3 s.h.
Selected topics, issues, and debates about various components of African American culture including literature, sociology, psychology, media, history, rhetoric, theater, sports, health, and education.

AFAM:4980 Independent Study arr.
Topics vary.

AFAM:4990 Honors Project arr.
Independent research and writing on interdisciplinary topic.

Graduate

AFAM:5900 Advanced Readings in African American Culture arr.
Textual, social, political analyses of works by Black authors.

AFAM:6635 Crossing Borders Seminar 2-3 s.h.

AFAM:7205 Gender and Race in Nineteenth-Century U.S. arr.
Same as HIST:7205, GWSS:7205.

AFAM:7214 Readings: African American Women's History arr.
Same as HIST:7214, GWSS:7214.

Interpretations and methods applied by historians in various world regions to different forms of oral history, from old oral traditions to contemporary autobiographical testimony. Same as HIST:7710.
Aging Studies

Chair, School of Social Work
• Sara Sanders

Coordinator, Aging Studies
• Mercedes Bern-Klug

Undergraduate minor: aging studies
Undergraduate certificate: aging studies
Graduate certificate: aging studies
Faculty: http://clas.uiowa.edu/socialwork/undergraduate-program/aging-studies-program/about
Web site: http://clas.uiowa.edu/socialwork/undergraduate-program/aging-studies-program/certificate

The Aging Studies Program offers undergraduate and graduate programs and a selection of courses open to students in all majors.

Undergraduate students in the College of Liberal Arts and Sciences who would like to focus on aging studies as their major or as a second major should consider the individualized plan of study track offered by the Interdepartmental Studies Program. See Interdepartmental Studies (p. 396) in the Catalog.

The Aging Studies Program is administered by the School of Social Work (p. 572).

Undergraduate and Graduate Programs of Study

• Certificate in Aging Studies (undergraduate and graduate)
• Minor in aging studies (undergraduate)

The College of Liberal Arts and Sciences grants the undergraduate certificate and minor; the Graduate College confers the graduate certificate.

Certificate

The Certificate in Aging Studies requires 21 s.h. of credit. The undergraduate certificate program is open to current University of Iowa undergraduate students and to all individuals who hold a bachelor's degree and are not enrolled in a graduate or professional degree program. Undergraduate students must maintain a g.p.a. of at least 2.00 in work for the certificate. Undergraduate students may earn the undergraduate certificate or the minor in aging studies, but not both. The graduate certificate program is open to University of Iowa graduate students with aging-related career interests and needs. Graduate students must maintain a g.p.a. of at least 2.50 in work for the certificate.

The Certificate in Aging Studies takes a multidisciplinary approach to gerontology. Its course work has been coordinated and sequenced to provide a broad background in aging for students from varied disciplines. Students should talk with the Aging Studies Program coordinator about their intent to earn the certificate. They work with their academic advisors and the coordinator to develop an individual plan of study that complements their degree program and career interests.

The certificate's required 21 s.h. of credit must be earned in Aging Studies Program courses (prefix ASP) and other courses approved for the program. With permission from the Aging Studies Program coordinator, students also may be able to use other aging-related courses for the certificate. Students must earn at least 18 s.h. of certificate credit in courses numbered 3000 or above, and they must earn at least 15 s.h. toward the certificate at the University of Iowa.

Certificate requirements include a core curriculum of six courses and an additional 5 s.h. of elective course work from the list of approved aging-related courses. Students may take core courses before or concurrently with other courses in the program, but they should complete the core courses before they enroll in the internship and internship seminar. Students who complete an aging-related internship or practicum in their major field may be able to count that experience as their Aging Studies Program internship; consult with the Aging Studies Program coordinator. Transfer credit requests are evaluated individually by the Aging Studies Program coordinator.

The Certificate in Aging Studies requires the following course work.

CORE COURSES

All certificate students must complete the following six core courses. Graduate students should contact the Aging Studies Program coordinator about an independent study option for ASP:3900 Independent Study in Gerontology.

One of these—graduate students must choose ASP:3135:

ASP:2181 The Anthropology of Aging
ASP:3135 Global Aging

One of these—graduate students must choose ASP:3900:

ASP:3900 Independent Study in Gerontology

All of these:

ASP:3150 Psychology of Aging
ASP:3160 Biology of Aging
ASP:4189 Aging Studies Internship Seminar
ASP:4190/SSW:4190 Aging Studies Internship

ELECTIVES

Students must complete an additional 5 s.h. of electives selected from courses offered by the Aging Studies Program (prefix ASP) and/or from approved aging-related courses offered by other academic units. Practicum and/or research courses offered by other academic units may be accepted for elective credit if they focus on aging; students who wish to apply course work from other departments should consult the Aging Studies Program.

Minor

Undergraduate students in the Colleges of Liberal Arts and Sciences, Education, Engineering, Nursing, and the Tippie College of Business may earn the minor in aging studies. Students must have the approval of their college or major department in order to earn the minor.

Students may earn the minor or the undergraduate certificate in aging studies, but not both.
The minor in aging studies requires a minimum of 15 s.h. in aging-related course work, including 12 s.h. in courses numbered 3000 or above taken at the University of Iowa. Students must maintain a g.p.a. of at least 2.00 in all courses for the minor and in all UI courses for the minor. Course work in the minor may not be taken pass/nonpass. The minor must include ASP:1800 Basic Aspects of Aging. Students earning the minor may not enroll in ASP:4190 Aging Studies Internship. Courses for the minor must be approved by the Aging Studies Program.

Courses

Lower-Level Undergraduate

**ASP:1000 First-Year Seminar**  
1 s.h.  
Small discussion class taught by a faculty member; topics chosen by instructor; may include outside activities (e.g., films, lectures, performances, readings, visits to research facilities). Requirements: first- or second-semester standing.

**ASP:1800 Basic Aspects of Aging**  
3 s.h.  

**ASP:2000 Creativity for a Lifetime**  
3 s.h.  
Exploration of what senior artists can teach about creativity and aging; interdisciplinary project-based collaborative learning opportunities that consider role of arts and creativity across a lifespan; essential skills necessary to be professionals in numerous careers including health, social work, education, humanities, and the arts; integration of teamwork and opportunities for individual growth that allow for personal development; identification of ways for students to be more creative in their own lives and work. Same as ARTS:2000, RHET:2000, EDTL:2000.

**ASP:2181 The Anthropology of Aging**  
3 s.h.  
Comparative anthropological perspective on aging; ethnographies from diverse contexts used to examine intersections of kinship, religion, health, and medicine in later life. Same as ANTH:2181, GHS:2181.

Upper-Level Undergraduate and Graduate

**ASP:3135 Global Aging**  
3 s.h.  
Demographic factors that contribute to the world wide phenomena of population aging in context of WHO Active Aging and the United Nation's Principles for Older Persons frameworks. Same as SSW:3135, GHS:3050.

**ASP:3150 Psychology of Aging**  
3 s.h.  
The later years of human life viewed from perspectives of developmental psychology, biology, sociology.

**ASP:3151 The Anthropology of the Beginnings and Ends of Life**  
3 s.h.  
Examination of diverse understandings of birth and death, drawing on anthropological analysis of personhood, kinship, ritual, and medicine; how social inequality and new technologies shape human experience at life's margins. Prerequisites: ANTH:1101 or ANTH:2100. Same as ANTH:3151, GHS:3151.

**ASP:3152 Anthropology of Caregiving and Health**  
3 s.h.  
Diverse understandings and practices of care around the world; focus on relationships between caregiving practices and health across the life course. Same as ANTH:3152, GHS:3152.

**ASP:3160 Biology of Aging**  
3 s.h.  
Biogerontology; definition of aging and senescence, biological theories of aging, demographics, model systems foraging, premature aging syndromes, aging of organ systems in humans.

**ASP:3501 Introduction to Nursing Homes**  
3 s.h.  
Overview of nursing home roles in context of long-term care system, characteristics of nursing home residents. Same as SSW:3501.

**ASP:3610 Writing in the Presence of Death: Rhetoric, Narrative, and Hospice**  
3 s.h.  
Role of rhetoric in health care practice, decisions, and ethics; rhetorical production of patient and professional selves in health care; varied practices, diverse perspectives, and situated production of medical and health care knowledge. Requirements: satisfactory completion of General Education rhetoric requirement. Same as RHET:3610, GWSS:3610.

**ASP:3740 End-of-Life Care for Adults and Families**  
2-4 s.h.  

**ASP:3753 Programs and Services for Aging Adults**  
3 s.h.  
Major gerontological programs and services, practitioners' need for basic aging-practice competence; aging network; income, employment, health maintenance programs; continuum of care (preventive and well-elderly services, in-home services, community-based services, institutional care); assessment; major elder health issues, informal care; end-of-life care. Same as SSW:3753.

**ASP:3785 Social Policy and the Elderly**  
3 s.h.  
Public social policies, their affect on well-being of elderly, including women and minorities; U.S. and other nations’ policies. Prerequisites: SSW:4843. Requirements: an introductory course on aging and junior or higher standing. Same as SSW:3785.

**ASP:3786 Death/Dying: Issues Across the Life Span**  
3-4 s.h.  
Introduction to death and dying; historical, cultural, societal, personal perspectives. Same as SSW:3786.

**ASP:3900 Independent Study in Gerontology**  
arr.  
Individual projects and/or research.
**ASP:3920 Service Learning in Aging Studies**  
1-3 s.h.  
Experiential learning in settings with older adults. Corequisites: ASP:1800, if not taken as a prerequisite.

**ASP:4165 Communication Disorders and Aging**  
Introduction to speech, language, and hearing processes and disorders among older adults; survey of characteristics of communication and communication breakdown, remediation, and strategies for improving communication with older adults with communication disorders; primarily for nonmajors and service providers other than speech-language pathologists and audiologists. Offered spring semesters of even years. Same as CSD:4165.

**ASP:4189 Aging Studies Internship Seminar**  
1 s.h.  

**ASP:4190 Aging Studies Internship**  
3 s.h.  
Opportunities for students in various disciplines to relate their areas of study to older adults and aging; interdisciplinary relationships, approaches to meeting needs of older adults. Same as SSW:4190.

**Graduate**

**ASP:5219 Aging and the Family**  
2-3 s.h.  
Research related to aging and the family; intergenerational relations, marital status in later life, diversity of older families, caregiving, elder abuse, policy issues. Same as SSW:5219.

**ASP:5401 The Care of the Frail Elderly**  
3 s.h.  
Clinical management of the elderly; emphasis on economic considerations, principles of gerontological care, common syndromes, ethical issues; clinical application experience in a long-term care setting. Prerequisites: NURS:5029. Same as NURS:5401.

**ASP:5750 Medicare and Medicaid Policy**  
3 s.h.  
Health policies most pertinent to Americans over age of 65. Same as HMP:5750.

**ASP:7401 State of the Science in Geriatric Mental Health Research**  
3 s.h.  
Analysis and evaluation of science in geriatric mental health research in nursing and other disciplines; cognitive and affective function, substance abuse, and caregiver health/support; relevant epidemiologic research, population/community-based research, primary prevention research, qualitative and quantitative analyses, instrumentation, intervention research, and measurement studies; review and analysis of program evaluation and services research, emphasis on ethical and methodological issues; identification of literature gaps and future research agendas that promote successful aging. Requirements: for NURS:7401 — doctoral standing; for ASP:7401 — Ph.D. enrollment. Recommendations: knowledge of psychopathology, research design, and statistics. Same as NURS:7401.

**ASP:8355 Introduction to Geriatric Dentistry**  
2 s.h.  
Biological, psychological, and social aspects of aging; normal aging and disease processes associated with aging; pathological changes that affect oral health treatment of dental diseases and patient management. Requirements: D.D.S. enrollment or completion of dental hygiene program. Same as DENT:8355.
American Indian and Native Studies

**Director**
- Horace Porter

**Coordinators**
- Erica Prussing, Jacki Rand

**Undergraduate minor:** American Indian and native studies

**Undergraduate certificate:** American Indian and native studies

**Graduate certificate:** American Indian and native studies

**Faculty:** [http://www.uiowa.edu/~ainsp/faculty/](http://www.uiowa.edu/~ainsp/faculty/)

**Web site:** [http://www.uiowa.edu/~ainsp/](http://www.uiowa.edu/~ainsp/)

The American Indian and Native Studies Program (AINSP) is an interdisciplinary program that focuses on the histories, cultures, literatures, and contemporary legal and political issues of Native North Americans and other indigenous peoples of the Americas.

Students taking AINSP courses begin to understand historical and contemporary social issues among indigenous peoples of the Americas, within the international and global context of settler colonialism and its legacies. Courses provide students with a better understanding of ethnic, social, and political diversity. The curriculum increasingly enables students to encounter innovative teaching methods that cross conventional disciplinary boundaries, that involve visiting and learning more about regional Native American communities in Iowa and the Midwest, and that focus on communicating knowledge to audiences both within and beyond the classroom. Students thereby gain expertise for employment in advocacy, social services, health care, education, and other areas that require cross-cultural understanding and communication with diverse public audiences. Students also gain a background for more specialized or advanced study in a variety of disciplines, including anthropology, economics, education, ethnic studies, geography, history, political science, psychology, and religious studies.

A certificate in AINSP also complements preprofessional and professional training in areas such as health care, business, social work, and law.

The American Indian and Native Studies Program is administered by the Department of American Studies (p. 44).

**Undergraduate Programs of Study**

- Certificate in American Indian and Native Studies
- Minor in American Indian and native studies

The College of Liberal Arts and Sciences grants the undergraduate certificate and minor.

**Certificate**

The undergraduate Certificate in American Indian and Native Studies requires a minimum of 21 s.h. The certificate program is open to current University of Iowa undergraduate students and to all individuals who hold a bachelor's degree and are not enrolled in a graduate or professional degree program. Students must maintain a g.p.a. of at least 2.00 in work for the certificate.

A student may earn the certificate or the minor in American Indian and native studies, but not both.

Students plan their programs in close cooperation with AINSP faculty advisors. Students may count a maximum of 6 s.h. of course work from their major toward the AINSP undergraduate certificate. Courses applied toward the AINSP certificate also may be used to complete the General Education Program (p. 313) or the requirements for a major or a minor.

The AINSP undergraduate certificate requires the following course work.

All of these:
- AINS:1049 Introduction to American Indian and Native Studies 3 s.h.
- AINS:3002 Introduction to American Indian History and Policy 3 s.h.
- AINS:3441 Native American Literature 3 s.h.

At least 3 s.h. from these:
- AINS:2165 Native Peoples of North America 3 s.h.
- AINS:3276 American Indian Environmentalism 3 s.h.
- AINS:4000 Special Topics: American Indian and Native Studies arr.
- AINS:4095 Directed Cultural Experience arr.
- AINS:4990 Independent Study arr.

And:

Electives chosen from the "Associated Courses" and "Courses" lists below 9 s.h.

**Minor**

The minor in American Indian and native studies requires a minimum of 15 s.h., including 12 s.h. taken at the University of Iowa. Students must maintain a g.p.a. of at least 2.00 in all courses for the minor and in all UI courses for the minor. Course work in the minor may not be taken pass/nonpass. Students may count a maximum of 6 s.h. of course work from a major toward the AINSP minor.

A student may earn the minor or the certificate in American Indian and native studies, but not both.

The minor includes the following course work.

- AINS:1049 Introduction to American Indian and Native Studies 3 s.h.

One of these:
- AINS:3002 Introduction to American Indian History and Policy 3 s.h.
- AINS:3441 Native American Literature 3 s.h.

At least 3 s.h. from these:
- AINS:2165 Native Peoples of North America 3 s.h.
- AINS:3276 American Indian Environmentalism 3 s.h.
- AINS:4000 Special Topics: American Indian and Native Studies arr.
AINS:4095 Directed Cultural Experience arr.
AINS:4990 Independent Study arr.

And:
Electives numbered 2000 or above chosen
from the “Associated Courses” and “Courses”
lists below

Cultural Experience
The program highly recommends that students have an
in-depth American Indian cultural experience, usually
through study or volunteer work, before they complete
their undergraduate requirements. Consult AINSP faculty
advisors about available options for AINS:4095 Directed
Cultural Experience.

Graduate Program of Study
- Certificate in American Indian and Native Studies
  The Graduate College confers the graduate certificate.

Certificate
The graduate Certificate in American Indian and Native
Studies requires a minimum of 20 s.h. in courses approved
for AINSP and numbered 3000 or above (see “Associated
Courses” and “Courses” below). Graduate students must
maintain a g.p.a. of at least 3.00 in work toward the
certificate. They may count a maximum of 6 s.h. of course
work from their major field of study toward the AINSP
graduate certificate.

Graduate students must apply to the academic coordinator
to be admitted to the AINSP graduate certificate program.
Students who earned an undergraduate certificate in the
program may not receive a graduate certificate.

The AINSP graduate certificate requires the following
course work.

AINS:3002 Introduction to American Indian
History and Policy 3 s.h.
AINS:6099 Independent Study Project 2 s.h.
Electives numbered 3000 or above chosen
from the “Associated Courses” and “Courses”
lists below 15 s.h.

Associated Courses
AINSP accepts the following courses as electives.
Although these courses are not offered by AINSP, they are
concerned in part with Native North Americans or other
indigenous peoples of the Americas. Students may petition
the AINSP faculty for permission to use other relevant
courses as electives for the undergraduate or graduate
certificate or the minor.

For course descriptions, see the appropriate department
sections of the Catalog.

ANTHROPOLOGY
ANTH:2220 Archaeology of Mesoamerica 3 s.h.
ANTH:3265 Archaeology of the Great Plains 3 s.h.

ART AND ART HISTORY
ARTH:1095 American Indian Art 3 s.h.
ARTH:3120 The Art of Ancient Mexico 3 s.h.

ARTH:3990 Topics in Art History (when
content is appropriate) 3 s.h.

EDUCATION
EPLS:5123 History of Ethnic/Minority Education 3 s.h.

ENGLISH
ENGL:2410 Selected American Authors After
1900 (when content is appropriate) 2-3 s.h.
ENGL:3418 Literature and Culture of America
Before 1800 3 s.h.
ENGL:3419 Literature and Culture of
Nineteenth-Century America 3 s.h.
ENGL:3444 Literatures of the American
Peoples 3 s.h.

HISTORY
HIST:4220 The Frontier in American History to
1840 3 s.h.
HIST:4221 The Frontier in American History
1840-Present 3 s.h.
HIST:4510 Colonial Latin America 3 s.h.

SPANISH AND PORTUGUESE
SPAN:3220 Visual Culture: Colonial Spanish
America 3 s.h.
SPAN:4330 Colonial Spanish American
Literature 3 s.h.

Courses
Lower-Level Undergraduate
AINS:1049 Introduction to American Indian
and Native Studies 3 s.h.
Themes and methodologies in the study of American
Indians and other indigenous peoples; approaches from
anthropology, history, law, literature, other disciplines.
Offered fall semesters. GE: Values, Society, and Diversity.
Same as AMST:1049.

AINS:1355 Literatures of Native American
Peoples 3 s.h.
Genres of Native American literature, including oral
literature; focus on written literature (fiction, essays,
poetry, drama). Prerequisites: ENGL:1200 and RHET:1030.
Requirements: successful completion of the rhetoric
requirement and then ENGL:1200. GE: Literary, Visual,
and Performing Arts; Values, Society, and Diversity. Same
as ENGL:1355.

AINS:2078 American Indian Women: Myth,
Ritual, and Sacred Power 3 s.h.
Participation of women and girls in native religious
traditions; obstacles to knowing and understanding
native women’s religious roles and experiences. Same as
RELS:2778, GWSS:2778.

AINS:2085 Native American Material
Culture 3 s.h.
Overview of American collectors and collections of Indian
objects, prehistoric to contemporary. Same as AMST:2085.

AINS:2165 Native Peoples of North
America 3 s.h.

**AINS:2290 Food and Culture in Indian Country** 3 s.h.
Native Americans as original farmers of 46% of the world’s table vegetables; examination of food as a cultural artifact (e.g., chocolate, tobacco); food as a primary way in which human beings express their identities; environmental, material, and linguistic differences that shape unique food cultures among Native peoples across the Western Hemisphere; close analysis of indigenous foods, rituals, and gender roles associated with them; how colonization transformed Native American, European, and African American cultures. Same as AMST:2290, HIST:2290.

**AINS:2300 Native Americans in Film** 3 s.h.
Representations of Native Americans in film from the western to science fiction and animation. Same as AMST:2300.

**AINS:2500 Indigenous Art, Land, and Social Justice** 3 s.h.
Examples, readings, discussions, and special projects examine contemporary visual, performance, and multimedia art by Native North American and other indigenous artists as a component of broader indigenous activism for social justice and defense of land.

**AINS:2700 Sacred World of Native Americans** 3 s.h.
GE: Values, Society, and Diversity. Same as RELS:2700.

**Upper-Level Undergraduate and Graduate**

**AINS:3002 Introduction to American Indian History and Policy** 3 s.h.
Same as HIST:3202.

**AINS:3110 Health of Indigenous Peoples** 3 s.h.
Health problems and services for indigenous populations worldwide, from perspective of Fourth World postcolonial politics. Prerequisites: ANTH:1101. Same as ANTH:3110, GHS:3110.

**AINS:3211 Native North America I: Precontact-1789** 3 s.h.
Same as HIST:3211.

**AINS:3212 Native North America II: 1789-Present** 3 s.h.
Same as HIST:3212.

**AINS:3257 North American Archaeology** 3 s.h.
Prehistoric cultural development north of Mexico from initial occupation to European contact and conquest; emphasis on dynamics of culture change. Same as ANTH:3257.

**AINS:3258 Southwestern Archaeology** 3 s.h.
Anthropological overview of prehistoric cultures of the American Southwest; emphasis on understanding archaeological arguments concerning major processes in the past. Same as ANTH:3258.

**AINS:3276 American Indian Environmentalism** 3 s.h.
Same as RELS:3976.

**AINS:3441 Native American Literature** 3 s.h.
English majors may apply this course to the following area and/or period requirement. AREA: American Literature and Culture. PERIOD: 20th/21st-Century Literature. Same as ENGL:3441.

**AINS:3554 Native Histories and Endurance in the Greater Midwest** 3 s.h.
Indigenous histories in the Great Lakes region; colonization and decolonization as ongoing processes rather than historic events.

**AINS:3555 Exploring American Icons: Cowboys, Indians, Bikers** 3 s.h.
Cowboys, Indians, and bikers as cultural icons from historic to contemporary times; examination of ideologies that circulate within and through these three groups as part of expressions of American identities.

**AINS:4000 Special Topics: American Indian and Native Studies** arr.
American Indians and other indigenous peoples; concepts, problems, issues.

**AINS:4095 Directed Cultural Experience** arr.
In-depth American Indian cultural experience, usually study or volunteer work, under supervision of an AINSP faculty member.

**AINS:4270 Colonial North America, ca. 1600-1775** 3 s.h.
Introduction to major themes in colonial American history prior to the American Revolution. Same as HIST:4270.

**AINS:4272 Native Americans in the Age of Empires, ca. 1500-1815** 3 s.h.
Overview of major issues in Native American history during the period of European Imperialism in North America. Recommendations: junior or senior standing. Same as HIST:4272.

**AINS:4289 The Atlantic World c. 1450-1850** 3 s.h.
Interactions between peoples of Europe, Africa, and the Americas between the 15th and mid-19th centuries, interconnected system of exchange that defied national and imperial boundaries; encounters between Native Americans, Africans, and Europeans in different parts of the Americas; forced and voluntary resettlement of Africans and Europeans overseas; development of plantation slave societies; biological consequences of transatlantic contact; circulation of people, goods, and ideas; development of creole societies; era of revolutions; abolition of slavery. Same as HIST:4289.
American Indian and Native Studies

A1NS:4502 History of Mexico 3 s.h.
Mexican history since the eve of the Spanish invasion, with focus on the national period; may include ethnic groups, conquest and demographic disaster, native survival, labor and migration, social protest and rebellions, nationhood, regional differences, religions, popular culture, economic growth and distribution, state building, international relations; survey. Same as HIST:4502.

A1NS:4560 Native American Women and Religious Change 3 s.h.
Native women's diverse experiences and their roles in native societies, examined through contact experiences between native and nonnative peoples; changes in women's roles in context of interactions between native people, missionaries, European colonists, and Americans; approaches to re-imaging women's early contact roles presented in cultural narratives, archaeology, history, ethnography, and missionary records. Same as GWSS:4560, RELS:4920.

A1NS:4990 Independent Study arr.

Graduate

A1NS:5099 American Indian and Native Studies Proseminar 1 s.h.
Intensive reading on designated topics with multidisciplinary relevance in American Indian and Native studies; may include screenings, field trips, guest speakers, special events.

A1NS:5150 Graduate Seminar in Native Peoples of North America 3 s.h.
Native American studies; key current themes, anthropology's role, working with tribal communities as an anthropologist, strategies for introductory undergraduate teaching; advanced readings. Same as ANTH:5150.

A1NS:6099 Independent Study Project arr.
Completion of a significant scholarly project that addresses the scope, goals, and ongoing development of American Indian and native studies as an academic field; findings presented on campus (e.g., AINSP steering committee or in association with an AINSP-sponsored event) or at an academic conference.

A1NS:6620 Readings in Native American Literatures 3 s.h.
Same as ENGL:6620.
American Sign Language

Director, Division of World Languages, Literature, and Cultures

- Russell Ganim

Director, undergraduate studies

- AmyRuth McGraw

Undergraduate minor: American Sign Language

Undergraduate certificate: American Sign Language and Deaf Studies

Faculty: http://clas.uiowa.edu/dwllc/asl/people

Web site: http://clas.uiowa.edu/dwllc/asl

The American Sign Language Program offers two undergraduate programs of study. It also offers a number of courses open to all students. They include a four-semester course sequence in American Sign Language (ASL), courses for teacher licensure (see "Hearing Impaired Endorsement for Teachers" below), and courses on fingerspelling, Deaf culture, ASL literature, ASL interpreting, and other topics. The four-course ASL sequence satisfies the World Languages requirement of the General Education Program (p. 313) (see "Language for General Education" below). Classroom instruction is supplemented by video materials and interactive software in the Language Media Center.

The American Sign Language Program is administered by the Division of World Languages, Literatures, and Cultures (p. 228).

HEARING IMPAIRED ENDORSEMENT FOR TEACHERS

The American Sign Language Program offers courses that fulfill requirements for the Hearing Impaired Endorsement offered by the College of Education. The University of Iowa currently is the only institution in Iowa that offers this endorsement program. Holders of the endorsement are authorized to serve deaf and hard-of-hearing students from birth to age 21. The program is open to undergraduate and graduate students; applicants must hold or be in the process of completing requirements for an elementary or secondary teaching license. Contact the College of Education Office of Education Services to learn more.

Undergraduate Programs of Study

- Certificate in American Sign Language and Deaf Studies
- Minor in American Sign Language

Certificate

The Certificate in American Sign Language and Deaf Studies requires 34 s.h. The certificate program is open to current University of Iowa undergraduate students and to all individuals who hold a bachelor's degree and are not enrolled in a graduate or professional degree program. Students must maintain a g.p.a. of at least 2.00 in work for the certificate.

Students may earn the Certificate in American Sign Language and Deaf Studies or the minor in American Sign Language, but not both.

The certificate program teaches students about the history, culture, and language of the American Deaf community. It is interdisciplinary, permitting students to link study in two or more disciplines into an organized investigation of a language and culture. Through their study of American Sign Language, students learn a language that is semantically and grammatically very different from their own and that operates in a different sensory channel. They also encounter a rich and complex culture, including a rapidly growing literature recorded on film and videotape since the early 20th century.

Certificate requirements include the four-course American Sign Language sequence (16 s.h.) or demonstration of equivalent proficiency; 6 s.h. of core courses; and 12 s.h. of focused electives in two or more disciplines.

Students may use each course required for the certificate to satisfy only one certificate requirement. But they may use a course to satisfy a certificate requirement as well as a requirement for a major or for a minor in another discipline. Courses used to satisfy certificate requirements may not be taken pass/nonpass.

A maximum of 6 s.h. of transfer credit may be accepted toward certificate requirements, with the approval of the American Sign Language and deaf studies advisor.

The Certificate in American Sign Language and Deaf Studies requires the following course work.

LANGUAGE SEQUENCE

Certificate students must complete the following sequence or be able to demonstrate equivalent proficiency. Students must demonstrate 75 percent proficiency in the expressive and receptive elements of each course in order to register for the next course in the sequence.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASL:1001</td>
<td>American Sign Language I</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>ASL:1002</td>
<td>American Sign Language II</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>ASL:2001</td>
<td>American Sign Language III</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>ASL:2002</td>
<td>American Sign Language IV</td>
<td>4 s.h.</td>
</tr>
</tbody>
</table>

CORE COURSES

Students complete at least two of these (minimum of 6 s.h.):

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASL:3100</td>
<td>American Sign Language Conversation</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ASL:3200</td>
<td>Topics in Deaf Studies</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ASL:3300</td>
<td>American Deaf Culture</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ASL:3400</td>
<td>Issues in ASL and Deaf Studies</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ASL:3500</td>
<td>Deafness in the Media</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ASL:3600</td>
<td>American Sign Language Literature</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ASL:4201/HIST:4201</td>
<td>History of the American Deaf Community</td>
<td>3-4 s.h.</td>
</tr>
<tr>
<td>ASLE:2500</td>
<td>Introduction to ASL Interpreting</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ASLE:3905/EDTL:3905</td>
<td>Teaching Deaf and Hard of Hearing Students</td>
<td>3-4 s.h.</td>
</tr>
</tbody>
</table>

FOCUSED ELECTIVES

Students earn a total of at least 12 s.h. in courses chosen from the lists below. They must choose courses from at least two different disciplines.
### American Studies
- AMST:1010 Understanding American Cultures 3 s.h.
- AMST:2025 Diversity and American Identities 3 s.h.

### Anthropology
- ANTH:1040 Language Rights 3 s.h.
- ANTH:1401 Language, Culture, and Communication 3 s.h.

### Communication Sciences and Disorders
- CSD:3117 Psychology of Language 3 s.h.
- CSD:3118 Language Acquisition 1-3 s.h.
- CSD:3185 Hearing Loss and Audiometry 3 s.h.

### English
- ENGL:3190 Language and Learning 2-3 s.h.

### History
- HIST:4201/ASL:4201 History of the American Deaf Community 3-4 s.h.
- HIST:4203 Disability in American History 3 s.h.

### Linguistics
- LING:1010 Language and Society 3 s.h.
- LING:1020 Introduction to the Study of Language 3 s.h.
- LING:1040 Language Rights 3 s.h.
- LING:1060 Languages of the World 3 s.h.
- LING:2900 Language and Gender 3 s.h.
- LING:3001 Introduction to Linguistics 3 s.h.
- LING:3030 Child Language-Linguistic Perspectives 3 s.h.
- LING:3117 Psychology of Language 3 s.h.
- LING:3118 Language Acquisition 1-3 s.h.
- LING:3670 Language Processes 3 s.h.
- LING:4080 Linguistic Theory and Second Language Acquisition 3 s.h.

### Psychological and Brain Sciences
- PSY:3085 Language Development 3 s.h.
- PSY:3670 Language Processes 3 s.h.

### Second Language Acquisition
- SLA:3401 Language Development 3 s.h.
- SLA:4080 Linguistic Theory and Second Language Acquisition 3 s.h.

### Social Work
- SSW:3847 Discrimination, Oppression, and Diversity 3 s.h.

### Special Education
- EDTL:3382 Language and Learning 2-3 s.h.
- EDTL:3905 Teaching Deaf and Hard of Hearing Students 3-4 s.h.
- EDTL:3933 The Culturally Different in Diverse Settings 3 s.h.
- EDTL:4900 Foundations of Special Education (requires admission to Teacher Education Program) 3 s.h.
- EDTL:4940 Characteristics of Disabilities 3 s.h.
- EPLS:4180 Human Relations for the Classroom 3 s.h.

### Minor
The minor in American Sign Language (ASL) requires 15 s.h. of ASL course work, including 12 s.h. in advanced courses numbered 2500 or above taken at the University of Iowa. Students must maintain a g.p.a. of at least 2.00 in all courses for the minor and in all UI courses for the minor. Course work in the minor may not be taken pass/nonpass. The minor must include ASL:2002 American Sign Language IV or demonstrated equivalent proficiency. Students may count a maximum of one of the following courses taught in English toward the minor—ASL:4201 History of the American Deaf Community or ASLE:3905 Teaching Deaf and Hard of Hearing Students or ASLE:2500 Introduction to ASL Interpreting—and also must enroll in the 4 s.h. option with discussion conducted in ASL.

Students may earn the minor in American Sign Language or the Certificate in American Sign Language and Deaf Studies, but not both.

### Language for General Education
The following four-course sequence satisfies the World Languages requirement of the College of Liberal Arts and Sciences General Education Program (p. 313). Students must demonstrate 75 percent proficiency in the expressive and receptive elements of each course in order to register for the next course in the sequence.

- ASL:1001 American Sign Language I 4 s.h.
- ASL:1002 American Sign Language II 4 s.h.
- ASL:2001 American Sign Language III 4 s.h.
- ASL:2002 American Sign Language IV 4 s.h.

Students taking more than one calendar year off from the American Sign Language (ASL) sequence are required to contact the ASL Program to schedule a placement test which will determine their placement in an American Sign Language I-IV course. Students are strongly advised to complete the ASL sequence without such a gap whenever possible. A student taking the placement test and not placing into the next course in the sequence may be retested before the class begins if he or she has undertaken a significant experience since the last placement test that might warrant retesting. All retesting is at the discretion of the ASL Program.

### Courses

#### Lower-Level Undergraduate

**ASL:1000 First-Year Seminar** 1 s.h.
Small discussion class taught by a faculty member; topics chosen by instructor; may include outside activities (e.g., films, lectures, performances, readings, visits to research facilities). Requirements: first- or second-semester standing.

**ASL:1001 American Sign Language I** 4 s.h.
Conversational skills, basic grammar of ASL; introduction to the ASL cultural community through readings, videos. Taught in American Sign Language. First in a four-semester sequence. GE: World Languages First Level Proficiency.
ASL:1002 American Sign Language II 4 s.h.
Continuation of ASL:1001; emphasis on ASL grammar and syntax; focus on culture through readings, videos. Taught in American Sign Language. Prerequisites: ASL:1001. GE: World Languages Second Level Proficiency.

ASL:1101 Fingerspelling and Numbers I 1 s.h.
Development of expressive and receptive American Sign Language fingerspelling, loan sign, and number skills based on word, phrase, and number recognition. Taught in American Sign Language. Prerequisites: ASL:1001.

ASL:1102 Fingerspelling and Numbers II 1 s.h.
Development of expressive and receptive American Sign Language fingerspelling, loan sign, and number skills based on word, phrase, and number recognition. Taught in American Sign Language. Prerequisites: ASL:1101.

ASL:2001 American Sign Language III 4 s.h.
Continuation of ASL:1002; emphasis on ASL grammar and syntax; focus on culture through readings, videos. Taught in American Sign Language. Prerequisites: ASL:1002. GE: World Languages Second Level Proficiency.

ASL:2002 American Sign Language IV 4 s.h.

ASL:2500 Introduction to ASL Interpreting 3-4 s.h.
Introduction to signed language interpreting; history and current nature of the field, available opportunities, certification, training, ethics. Taught in spoken English. Corequisites: ASL:1002.

Upper-Level Undergraduate and Graduate

ASL:3100 American Sign Language Conversation 3 s.h.
Improvement of receptive and expressive conversational ASL skills through small group discussion, class presentations. Taught in American Sign Language. Corequisites: ASL:2002, if not taken as a prerequisite.

ASL:3200 Topics in Deaf Studies 3 s.h.
Current topics in deaf studies; skill development in communicative fluency in ASL. Taught in American Sign Language. Corequisites: ASL:2002, if not taken as a prerequisite.

ASL:3300 American Deaf Culture 3 s.h.

ASL:3400 Issues in ASL and Deaf Studies 3 s.h.
Current issues in American Sign Language and the American deaf community, such as linguistics, culture, literacy. Corequisites: ASL:2002, if not taken as a prerequisite.

ASL:3500 Deafness in the Media 3 s.h.
Exploration of the construct of deafness through mainstream media (e.g., commercial television, movies, fictional and nonfictional literature in print and on the Internet); various ways deaf people are constructed and presented for hearing audiences from the past 20 years. Taught in American Sign Language. Prerequisites: ASL:2002.

ASL:3600 American Sign Language Literature 3 s.h.
Introduction to the world of ASL literature, as recorded on videotape or film and in live performance; traditional folklore, storytelling, poetry, drama, oratory, jokes, and nonfiction narrative; analysis of genres in their social and cultural contexts as expressions of deaf experience; how historical and current issues in deaf culture are represented in literary form. Taught in American Sign Language. Corequisites: ASL:2002, if not taken as a prerequisite.

ASL:3800 Independent Study arr.
An American Sign Language/deaf studies topic; individual study.

ASL:4201 History of the American Deaf Community 3-4 s.h.
Creation of a distinct language and culture of deaf people in America during the 19th and 20th centuries. Taught in English and/or American Sign Language. Requirements: for 4 s.h. option — concurrent enrollment in ASL:2002, if not taken as a prerequisite. Same as HIST:4201.

ASLE:3905 Teaching Deaf and Hard of Hearing Students 3-4 s.h.
Issues in deaf education; management techniques, communication strategies, teaching strategies, instructional materials, hands-on activities, assessments, parent involvement; use of technology, ethnic and cultural diversity, classroom management, pre-reading techniques, literacy development, educational program options. Taught in English and/or American Sign Language. Requirements: for 4 s.h. option — concurrent enrollment in ASL:2002, if not taken as a prerequisite. Same as EDTL:3905.
American Studies

Chair
- Horace Porter

Undergraduate majors: American studies (B.A.); sport studies (B.A.)
Undergraduate minors: American studies; sport studies
Graduate degrees: M.A. in American studies; Ph.D. in American studies (optional sport studies subprogram)
Faculty: http://clas.uiowa.edu/american-studies/people/faculty
Web site: http://clas.uiowa.edu/american-studies/

The Department of American Studies provides an interdisciplinary introduction to American culture, past and present. It helps students acquire a broad familiarity with the dynamics of cultural experience and explore aspects of life in the United States, such as sport, popular and fine arts, institutions, values, gender and ethnic relations, artifacts, and the everyday life of a diverse citizenry.

The department offers undergraduate programs of study in American studies and in sport studies as well as graduate programs of study in American studies, with a sport studies subprogram available in the Ph.D.

The department also is the administrative home of the American Indian and Native Studies Program, which offers an undergraduate certificate and minor and a graduate certificate; see American Indian and Native Studies (p. 37) in the Catalog.

Undergraduate Programs of Study

- Major in American studies (Bachelor of Arts)
- Major in sport studies (Bachelor of Arts)
- Minor in American studies
- Minor in sport studies

Bachelor of Arts: American Studies

The Bachelor of Arts with a major in American Studies usually requires a minimum of 120 s.h., including 36 s.h. of work for the major. Students must maintain a g.p.a. of at least 2.00 in all courses for the major and in all UI courses for the major. They also must complete the College of Liberal Arts and Sciences General Education Program (p. 313). At least 24 s.h. for the major must be earned at the University of Iowa.

The major in American studies stresses broad training in cultural analysis and communication. The program provides preparation for careers in business, education, government, journalism, or social service; for advanced study in the humanities, the social sciences, theology, or business; or for professional study in law or medicine. American studies students may arrange internships through the University’s Pomerantz Career Center.

A distinctive feature of the American studies major is the opportunity to develop broad training in cultural analysis as well as emphasis of particular interests within the study of American culture. With the help of their American studies advisors, students may elect to pursue one of five focus areas within American studies, or they may create an individual plan of study. Each focus area allows students to group courses in American studies and other departments around a specific interdisciplinary theme, topic, or set of social issues; see “American Studies Focus Areas” below.

Shortly after declaring the major, a student should meet with his or her faculty advisor to explore the range of course work available and to begin shaping an individual plan of study. By the student’s second term in the major, the student and advisor should have agreed upon a plan of study and focus area for completing the requirements for the major.

The major in American studies usually requires the following 12 courses.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMST:1010</td>
<td>Understanding American Cultures</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>AMST:2000</td>
<td>Approaches to American Studies</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>AMST:2025</td>
<td>Diversity and American Identities</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>AMST:3090</td>
<td>Seminar in American Cultural Studies</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>Two additional American studies courses (numbered 2000 or above)</td>
<td>6 s.h.</td>
<td></td>
</tr>
<tr>
<td>Two additional American studies courses (any level)</td>
<td>6 s.h.</td>
<td></td>
</tr>
<tr>
<td>Special interest focus area: four courses in American studies and/or other departments</td>
<td>12 s.h.</td>
<td></td>
</tr>
</tbody>
</table>

American Studies Focus Areas

Students should consult regularly with the Department of American Studies about courses offered by American studies and other departments that count toward each focus area. A maximum of two courses from a single department outside American studies may be counted toward a single focus area.

ETHNIC STUDIES, DIVERSITY, AND DIFFERENCES

Students choose this focus to develop interdisciplinary understanding of an individual ethnic and/or racial group (e.g., Latino/a studies, Jewish-American studies) or to examine broadly gender, race, sexuality, social class, region, national origins, and age in the United States. Emphasis is on the historic emergence of categories of social difference, especially as revealed in cultural practices and artifacts, geography and cityscapes, leisure, and popular expression.

AMERICAN ARTS, LITERATURE, AND POPULAR CULTURE

Students who choose this focus examine artistic creations to discover how they are shaped by cultural preconceptions, norms, and standards, and how in turn these expressive forms affect ongoing developments in cultural life. Emphasis is on skills in the formal analysis of artistic artifacts, historical inquiry, and cultural contextualization.

AMERICAN SOCIETY, POLITICS, AND EVERYDAY LIFE

Students who choose this focus consider the dynamics of social change, the emergence and fate of political movements, and the forms and practice of everyday life in America. The area encompasses the tradition of revolution in America, the effects of technological and
economic change, and the roles of the family, workplace, and community from the colonial era to the digital age.

**THE POLITICS OF NATURE: ENVIRONMENT, SUSTAINABILITY, AND LANDSCAPE**

Students who choose this focus explore how Americans from pre-Columbian times to the present have shaped and regarded the natural environment. Topics might include the perception of wilderness in early America; the relationship of Native American peoples to the land; the impact of industrialization and urban growth on the environment; the emergence of a cult of nature; the treatment and representation of animals; the mass production, distribution, and consumption of food; and the growing movement for sustainability in agriculture, architecture, urban planning, and individual lifestyles.

**SPORT AND POPULAR AMUSEMENTS**

Students who choose this focus examine the various sports, recreational activities, and popular amusements enjoyed in the United States from colonial and early America to the present. They examine the relationship between work and play, the role of technology and the media, the commercialization of sport, and the politics of gender, race, class, sexuality, and disability.

**INDIVIDUALLY DESIGNED FOCUS AREAS**

Individually designed focus areas may concentrate on an interdisciplinary topic, theme, group of people, or time period. Students who wish to design their own interdisciplinary focus area should consult with their American studies advisor for appropriate courses.

**Bachelor of Arts: Sport Studies**

The Bachelor of Arts with a major in sport studies requires a minimum of 120 s.h., including 45 s.h. of work for the major (30 s.h. in sport studies and 15 s.h. in an outside specialization area or a minor). Students must maintain a g.p.a. of at least 2.00 in all courses for the major and in all UI courses for the major. They also must complete the College of Liberal Arts and Sciences General Education Program (p. 313). At least 24 s.h. of credit for the major must be earned at the University of Iowa.

The sports studies major examines sport in its historical and contemporary cultural contexts. Course work provides students with the critical skills necessary to understand the cultural significance of sport as it relates to the media, the economy, the political system, and the educational system. A focus on the race, class, and gender differences in the sport experience is central to the major.

Many students use their experience in the program to prepare for graduate school. For others, the required second concentration area or minor serves as an introduction to careers in a number of fields, such as sport journalism, sport management, or coaching.

The major in sport studies requires the following course work.

**SPORT STUDIES FOUNDATION**

Students should complete the foundation courses as early as possible.

Both of these:

- AMST:1010 Understanding American Cultures 3 s.h.
- SPST:1074 Inequality in American Sport 3 s.h.

**SPORT STUDIES CORE**

Students must complete one course from each of the following four content areas (total of 12 s.h.).

- Diversity in sport—one of these:
  - SPST:2078 Women, Sport, and Culture 3 s.h.
  - SPST:2079 Race and Ethnicity in Sport 3 s.h.

- International dimensions—one of these:
  - SPST:3176 Sport and Nationalism 3 s.h.
  - SPST:3177 Sport in the Western World 3 s.h.

- Contemporary sport in America—one of these:
  - SPST:3175 Sport and the Media 3 s.h.
  - SPST:3179 American Sport Since 1900 3 s.h.

- History of sport and leisure in America—one of these:
  - SPST:2050 The American Vacation 3 s.h.
  - SPST:3178 American Sport to 1900 3 s.h.

**ELECTIVES**

Students must complete at least 12 s.h. of approved elective courses; the department suggests courses from the following list. Students also may include courses from the sport studies core (above) that they have not already taken.

- AMST:1065 Disney in America 3 s.h.
- AMST:2000 Approaches to American Studies 3 s.h.
- AMST:2052 Fairs and Amusement Parks 3 s.h.
- CLSA:1875 Ancient Sports and Leisure 3 s.h.
- ECON:3690 Sports Economics 3 s.h.
- ENTR:4450 Professional Sports Management 3 s.h.
- HHP:2500 Psychological Aspects of Sport and Physical Activity 3 s.h.
- JMC:1200 Media History and Culture 3 s.h.
- JMC:3125 Media and Consumers 3 s.h.
- JMC:3160 Images and Society 3 s.h.
- SOC:2810 Social Inequality 3 s.h.
- SPST:2081 Theory and Ethics of Coaching 3 s.h.
- SPST:2084/AMST:2084 Sport and Film 3 s.h.
- SPST:3171 Baseball in America 3 s.h.
- SPST:3172 Football in America 3 s.h.
- SPST:3180 Classics of Sports Journalism: From Jack London to Grantland 3 s.h.
- SPST:3181 The Business of Sport Communication 3 s.h.
- SPST:3193 Independent Study 1-3 s.h.
- SPST:3198 New Media and the Future of Sport 3 s.h.
- SPST:4900 Topics in Sport Studies 1-3 s.h.
- SPST:4999 Honors Project 1-3 s.h.

**OUTSIDE CONCENTRATION AREA OR MINOR**

All sport studies students must complete 15 s.h. of course work in an allied field of concentration outside the major (e.g., American studies; journalism and mass communication; business; gender, women’s, and sexuality studies). Work for the concentration must include 6 s.h. earned in courses numbered 3000 or above or in courses that are designated advanced by the department or program that offers them. Concentration area courses may not be taken pass/nonpass.
Students select their allied field of concentration in consultation with their advisor, and they must have their advisor's written approval for the area.

Students also may satisfy the concentration requirement by earning a second major or a minor in another discipline. Students who satisfy the requirement in this way are held responsible for ensuring that they have fulfilled the requirements for the second major or the minor.

**B.A. with Coaching Authorization or Endorsement**

Students may prepare for coaching by completing additional course work that also qualifies them for a coaching authorization from the State of Iowa. The following courses are recommended.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATEP:2030</td>
<td>Basic Athletic Training</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>HHP:1100</td>
<td>Human Anatomy</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>HHP:3300</td>
<td>Human Growth and Motor</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>Development</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SPST:2081</td>
<td>Theory and Ethics of Coaching</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

Students who successfully complete the requirements for the coaching authorization must submit an application to the Iowa Board of Educational Examiners. For more information, visit Coaching Authorization FAQs on the board's web site.

**Four-Year Graduation Plan**

The following checkpoints list the minimum requirements students must complete by certain semesters in order to stay on the University's Four-Year Graduation Plan. (Courses in the major are those required to complete the major; they may be offered by departments other than the major department.)

**B.A.: American Studies**

Before the fifth semester begins: declaration of the major and discussion of a plan of study with an American studies advisor

Before the seventh semester begins: at least six courses from the plan of study and at least 90 s.h. earned toward the degree

Before the eighth semester begins: at least nine courses from the plan of study

During the eighth semester: enrollment in all remaining course work in the major, all remaining General Education courses, and a sufficient number of semester hours to graduate

**B.A.: Sport Studies**

Before the fifth semester begins: declaration of the major

Before the sixth semester begins: area of specialization determined

Before the seventh semester begins: at least six sport studies courses and at least 90 s.h. earned toward the degree

Before the eighth semester begins: at least eight sport studies courses

During the eighth semester: enrollment in all remaining course work in the major, all remaining General Education courses, and a sufficient number of semester hours to graduate

**Honors in the Major**

Students majoring in American studies or sport studies have the opportunity to graduate with honors in the major and to pursue special interests through individual, in-depth research.

Honors students carry out a research project. Working under the guidance of an undergraduate advisor, each student defines a research project and then makes a project proposal, ideally by the end of the junior year. The student completes the project under the guidance of a supervising faculty member. American studies honors students register for up to 6 s.h. in AMST:4999 Honors Project. Sport studies honors students register for up to 3 s.h. in SPST:4999 Honors Project.

Contact the American studies honors advisor for more information about honors in either major.

Honors students in either major must be members of the University's honors program, which requires students to maintain a cumulative University of Iowa g.p.a. of at least 3.33 and to fulfill other requirements; visit Honors at Iowa to learn about the University of Iowa Honors Program.

**Minor: American Studies**

The minor in American studies requires a minimum of 15 s.h. in American studies courses, including 12 s.h. in courses considered advanced for the minor taken at the University of Iowa (courses numbered above AMST:1010 are considered advanced for the minor). Students must maintain a g.p.a. of at least 2.00 in all courses for the minor and in all UI courses for the minor. Course work in the minor may not be taken pass/nonpass. Students interested in earning the American studies minor should consult with one of the department's faculty members.

**Minor: Sport Studies**

The minor in sport studies requires a minimum of 15 s.h. in University of Iowa sport studies courses (prefix SPST), including at least 6 s.h. in courses numbered 3000 or above. Students must maintain a g.p.a. of at least 2.00 in all courses for the minor and in all UI courses for the minor. Course work in the minor may not be taken pass/nonpass. Students select courses for the minor according to their interests and the recommendation of the undergraduate coordinator.

**Certificate in American Indian and Native Studies**

The Department of American Studies administers the American Indian and Native Studies Program, which offers a certificate for undergraduate and graduate students and a minor for undergraduates; see American Indian and Native Studies (p. 37) in the Catalog.

**Graduate Programs of Study**

- Master of Arts in American studies
- Doctor of Philosophy in American studies (optional sport studies subprogram)
Applicants must meet the admission requirements of the Graduate College; see the Manual of Rules and Regulations of the Graduate College.

**Master of Arts**

The Master of Arts program in American studies requires a minimum of 36 s.h. of graduate credit. The degree generally is offered without thesis; students must petition the director of graduate studies for permission to pursue the thesis option.

Each M.A. student designs an interdisciplinary field of concentration in consultation with his or her American studies advisor.

The M.A. in American studies requires the following work.

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMST:5000 Interdisciplinary Research in American Studies (taken twice in consecutive years)</td>
<td>6 s.h.</td>
</tr>
<tr>
<td>Two graduate seminars in American studies</td>
<td>6 s.h.</td>
</tr>
<tr>
<td>Five courses in the interdisciplinary field of concentration</td>
<td>15 s.h.</td>
</tr>
<tr>
<td>Electives</td>
<td>9 s.h.</td>
</tr>
<tr>
<td>M.A. portfolio</td>
<td></td>
</tr>
</tbody>
</table>

Each student must complete an M.A. portfolio, which includes a research paper, faculty evaluations for all courses taken during the student's first full year of graduate study, and a self-evaluation essay.

The research paper is a graduate seminar paper that demonstrates the student's skills as a research scholar and writer and represents his or her strongest work. The paper should be 25-30 pages, including a bibliography.

The self-evaluation essay summarizes the American studies methods and materials that have shaped the student's interdisciplinary work in the field and states how the master's degree work in American studies has contributed to, challenged, or complicated the student's goals and ambitions beyond the degree.

Students assemble the M.A. portfolio under the guidance of their advisors and should submit it no later than December 1 of their third semester in residency. The portfolio is evaluated on a satisfactory/unsatisfactory (S/U) basis by a three-person American studies faculty committee. Students whose portfolio receives a U may resubmit the portfolio during their fourth semester of residency.

For students who wish to continue their education with doctoral study, the M.A. portfolio serves as the application for admission to the Ph.D. program in American studies. The department informs applicants whether they have been accepted into the Ph.D. program by the end of the fall semester in which they submit their M.A. portfolio; admission is contingent upon successful completion of the M.A. during the student's fourth semester of residency.

**Doctor of Philosophy**

The Doctor of Philosophy program in American studies requires a minimum of 72 s.h. of graduate credit. Students may focus in American studies or choose the sport studies subprogram.

Each student works with his or her faculty advisor to map out a coherent plan of study that reflects the student's particular interests. Students are permitted considerable flexibility in constructing their study plan, but they must meet certain basic requirements, which include foundation courses, area foundation courses, two interdisciplinary fields of concentration, a research skills course, elective course work, and a dissertation.

The two fields of concentration may be defined to correspond with the student's strongest intellectual interests, but they must be interdisciplinary in concept and multidisciplinary in scope. Each must include course work from more than one of the University's departments and programs. The two concentration areas may, and usually should, have an intellectual relationship with each other.

Students are expected to address the cultural diversity of American life in their course work and reading.

The Doctor of Philosophy requires the following work. Some course requirements are different for American studies and sports studies.

**COURSE WORK**

**Required Foundation Courses**

All students complete the required foundation courses and should take them as early as possible.

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMST:5000 Interdisciplinary Research in American Studies (taken twice in consecutive years)</td>
<td>6 s.h.</td>
</tr>
</tbody>
</table>

**Area Foundation Courses**

American studies students:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Two American studies graduate seminars</td>
<td>6 s.h.</td>
</tr>
<tr>
<td>Sport studies students:</td>
<td></td>
</tr>
<tr>
<td>SPST:5002 Critical Theories for Sport</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>SPST:6074 Seminar in Sport History</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

**First Field of Concentration**

American studies students:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Courses in an interdisciplinary field with a historical concentration, designed with the advisor and approved by the department's Plan of Study Committee</td>
<td>18 s.h.</td>
</tr>
</tbody>
</table>

Sport studies students:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Courses on sport in cultural and historical contexts selected with the advisor and approved by the department's Plan of Study Committee</td>
<td>18 s.h.</td>
</tr>
</tbody>
</table>

**Second Field of Concentration**

American studies students:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Courses in an interdisciplinary field designed with the advisor and approved by the department's Plan of Study Committee</td>
<td>18 s.h.</td>
</tr>
</tbody>
</table>

Sport studies students:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Courses in an interdisciplinary field designed with the advisor and approved by the department's Plan of Study Committee; may be a second field in sport studies or a field outside sport studies</td>
<td>18 s.h.</td>
</tr>
</tbody>
</table>

**Research Skills**

American studies students:
ADMISSION TO PH.D. CANDIDACY
Admission to Ph.D. candidacy signifies that the department judges the doctoral student qualified to take the comprehensive examination. Doctoral students advance to Ph.D. candidacy based on a review conducted during their second year in the Ph.D. program (typically during fall semester); the review assesses a student’s readiness to complete his or her studies through the comprehensive examination and the dissertation, which is an original work of scholarship. In addition to judging a student’s readiness for Ph.D. candidacy, the review provides a progress report on the student’s work and a tentative prognosis for future prospects in the field.

COMPREHENSIVE EXAMINATION
The comprehensive examination comprises three written exams and one oral exam.

The first exam is taken under the supervision of an American studies faculty member, who also chairs the comprehensive examination. The candidate takes a timed, take-home written exam of no less than four hours and no longer than two days; the exam details the candidate’s approach to American studies (methods and models), including his or her position and critical engagement with models of American studies scholarship.

The remaining two written exams explore the candidate’s major fields; these are at least four hours long and may be given on a take-home basis at the examiner’s discretion.

The oral exam covers material from the written exams.

DISSERTATION
The final requirement for the Ph.D. in American studies is the dissertation, a substantive book-length manuscript that involves interdisciplinary research and analysis and that represents an original contribution to knowledge. All Ph.D. dissertations must be approved by a committee of five faculty members, including at least two from the Department of American Studies.

Internships
Qualified graduate students in American studies can arrange internships with a number of local agencies, including the State Historical Society of Iowa, the Division of Historic Preservation, the University of Iowa Museum of Art, the Iowa Humanities Board, Brucemore, the Herbert Hoover Presidential Library and Museum, and the Putnam Museum. With special permission, candidates conducting research during such on-the-job training may receive academic credit through AMST:7994 Independent Study. Other internships with social agencies, government, or business also may be arranged.

Courses

American Studies, Lower-Level Undergraduate

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMST:1010</td>
<td>Understanding American Cultures</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>AMST:1030</td>
<td>Introduction to African American Culture</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>AMST:1049</td>
<td>Introduction to American Indian and Native Studies</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>AMST:1050</td>
<td>American Issues</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>AMST:1060</td>
<td>Sex and Popular Culture in the Postwar U.S.</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>AMST:1065</td>
<td>Disney in America</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>AMST:1070</td>
<td>Drugs in American Popular Culture</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>
AMST:1074 Inequality in American Sport 3 s.h.
Cultural meanings of sport in contemporary U.S. culture; American dream as promoted, challenged in sport; sport experiences, inclusion, and exclusion as affected by gender and sexuality, race and ethnicity, social class, age, physical ability/disability, and nationalism. GE: Values, Society, and Diversity. Same as SPST:1074, GWSS:1074.

AMST:1075 American Popular Music 3 s.h.

AMST:1080 American Political Humor 3 s.h.
How political humor reflects and influences American attitudes regarding government institutions, elected officials, the democratic process; how humor works; examples from Revolutionary War present and from varied media, including cartoons, fiction, film, television, the Internet.

AMST:1154 Food in America 3 s.h.
Cultural significance of production, distribution, and consumption of food in the United States. GE: Values, Society, and Diversity.

AMST:1400 Introduction to American Popular Culture 3 s.h.
Introduction to popular culture studies; variety of cultural expressions including cyber communities, radio, humor, television, music, sport, and material culture; discussion of these popular genres and topics within larger context of gender, race, sexualities, class, consumerism, nation state and global capitalism; what popular culture is; difference between folk, high, mass, and popular culture; how to critically read and interpret popular cultural expressions; role(s) consumers of popular culture play in market economy; new information technologies to enhance learning experience.

AMST:1500 American Celebrity Culture 3 s.h.
Cultural history of meanings and implications of fame and celebrity in America; shift from 18th-century culture of “fame” (something bestowed posthumously on great statesmen) to 19th-century culture of “celebrity” that conferred instant stardom on actors, sportsmen, musicians, writers, and others; role of mass media and impresarios (e.g., Barnum and "Buffalo Bill") in promoting culture of celebrity; refinement of star system by Hollywood, television, and Internet; implications for political culture, consumer culture, and attitudes towards race, gender, class, and sexuality.

AMST:1630 U.S. History Through Objects 3 s.h.
Interpretation of U.S. history through stories embedded in material artifacts ranging from guns, farming tools, and religious relics to mechanical toys, office gadgets, and vehicles; invention, manufacture, and marketing of tools and objects; their use and adaptation by various groups of Americans (women, African Americans, immigrants); meanings and memories invested in them; preservation of objects in museums, attics, and time capsules.

AMST:1847 Hawkeye Nation: On Iowa and Sport 3 s.h.
Identity, community, and place explored within local frameworks: the University of Iowa, Iowa City, State of Iowa; how sport, literature, film, other cultural institutions forge connections to community and shape Iowa’s image in the public imagination; identity and community as complex and contested issues; local rituals, sites of memorialization, acts of erasure, management and use of public and private space such as UI athletic complex, Field of Dreams, Iowa Writers’ Workshop, Iowa Avenue Literary Walk, Blackhawk Park; interdisciplinary approaches grounded in American studies, sport studies, American Indian and native studies, literature, history. Same as SPST:1847.

AMST:2000 Approaches to American Studies 3 s.h.
Variety of historic and contemporary sources, such as literature, law, photography, painting, film, TV, music, fashions, environments, events of everyday life.

AMST:2025 Diversity and American Identities 3 s.h.
History and variety of American identities, examined through citizenship, culture, social stratification; conflict and commonalities among groups according to race, ethnicity, gender, class, sexuality; how art, literature, music, film, photography, and other cultural artifacts represent diversity of identities.

AMST:2050 The American Vacation 3 s.h.
Development of the idea of vacation from upper-class origins to acceptance as part of middle- and working-class life; Niagara Falls, Saratoga Springs, the Catskills, Atlantic City, Idlewild, Coney Island, national parks of the American West, Chicago World’s Fair, Gettysburg, Disneyland; how vacation experiences and meanings are shaped by social class, race, gender, age; growth of leisure time, labor legislation, proper use of leisure time, tourism, vacations as social rituals, golden age of family vacations. Same as SPST:2050.

AMST:2052 Fairs and Amusement Parks 3 s.h.
Nineteenth- and twentieth-century international expositions, amusement parks, and theme parks as cultural events of U.S. self-definition.

AMST:2084 Sport and Film 3 s.h.
Sport films as means of exploring contemporary ideas about sport in the U.S.; focus on narrative structure, characterization, historical, and political contexts; formal aspects of film analysis (e.g., editing, lighting, cinematography). Same as SPST:2084.

AMST:2085 Native American Material Culture 3 s.h.
Overview of American collectors and collections of Indian objects, prehistoric to contemporary. Same as AINS:2085.

AMST:2165 Native Peoples of North America 3 s.h.

AMST:2290 Food and Culture in Indian Country 3 s.h.
Native Americans as original farmers of 46% of the world's table vegetables; examination of food as a cultural artifact (e.g., chocolate, tobacco); food as a primary way in which human beings express their identities; environmental, material, and linguistic differences that shape unique food cultures among Native peoples across the Western Hemisphere; close analysis of indigenous foods, rituals, and gender roles associated with them; how colonization transformed Native American, European, and African American cultures. Same as AINS:2290, HIST:2290.

**AMST:2300 Native Americans in Film** 3 s.h.
Representations of Native Americans in film from the western to science fiction and animation. Same as AINS:2300.

**AMST:2500 U.S. Cinema and Culture** 3 s.h.
Representation of race, ethnicity, class, gender, and sexuality in Hollywood movies. Same as CINE:2654.

### American Studies, Upper-Level Undergraduate and Graduate

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>AMST:3045</strong></td>
<td>Immigration and American Culture</td>
<td>3 s.h.</td>
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<tr>
<td></td>
<td>Immigrants and immigrant communities.</td>
<td></td>
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<tr>
<td><strong>AMST:3047</strong></td>
<td>American Disasters</td>
<td>3 s.h.</td>
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<tr>
<td></td>
<td>Fault lines of American society and culture as exposed during catastrophe; history of American disaster investigated through methods from cultural history, visual theory, sociology, and media studies; varied disasters 1800 to present, including those involving cities (Chicago fire, San Francisco earthquake, Chicago heat wave), transportation (Titanic, Challenger, Columbia), and environment (Union Carbide and Bhopal, Exxon Valdez); causes of catastrophes; how Americans react and are drawn to catastrophe (e.g., disaster films, jokes); related topics, including technology, urbanism, race, class, apocalyptic religion, journalism, popular culture.</td>
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<tr>
<td><strong>AMST:3050</strong></td>
<td>Topics in American Cultural Studies</td>
<td>3 s.h.</td>
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<tr>
<td></td>
<td>Special topics in American history, literature, culture.</td>
<td></td>
</tr>
<tr>
<td><strong>AMST:3051</strong></td>
<td>The Office: Business Life in America</td>
<td>3 s.h.</td>
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<td></td>
<td>History of business life in America from birth of Wall Street to rise of Silicon Valley; modes of managing and regulating office workers; changing designs of office buildings, furniture, gadgets; corporate response to rise of class inequalities and growing gender and racial diversity in workforce; portrayal of businessperson in novels, movies, television, art, photography.</td>
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<tr>
<td><strong>AMST:3053</strong></td>
<td>The Civil Rights Movement</td>
<td>3 s.h.</td>
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<td></td>
<td>History of the American civil rights movement. Same as AFAM:3053.</td>
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</tr>
<tr>
<td><strong>AMST:3060</strong></td>
<td>Metropolis: Cities in American Culture</td>
<td>3 s.h.</td>
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<td></td>
<td>Impact of American cities (skyscrapers, entertainments, crowds, ethnic neighborhoods) on American culture; depiction of American urban environments by artists, writers, musicians, filmmakers; treatment of city life in popular culture (superhero comics and movies, sitcoms, hip-hop, and more); debates about post-industrial decline of cities; focus on New York, Chicago, Los Angeles.</td>
<td></td>
</tr>
</tbody>
</table>

**AMST:3063 American Ruins** 3 s.h.
Emergence and development of American fascination with ruins, from indigenous to urban-industrial remains; actual ruins and depiction of imagined ruins in art, literature, cinema.

**AMST:3067 Reading and Writing the History of the Environment** 3 s.h.
Culture and society bind human communities to the natural world that supports them; local landforms and waterways in Iowa have shaped, and been shaped by, human uses and meanings; the past inheres in present-day conflicts over land and water use, see local landscapes historically; deploy skills of environmental history to understand the historical and cultural roots of present-day conflicts over land use and appreciate how beliefs, rituals, recreational practices, and technologies attach human beings to places in which they live.

**AMST:3090 Seminar in American Cultural Studies** 3 s.h.
Interdisciplinary perspectives on a single theme or period.

**AMST:3130 Black American Cinema** 3 s.h.
Major historical and cultural movements in Black cinema; independent and early Hollywood films, animation, Blaxploitation, the Black Renaissance, Black auteurs (e.g., Spike Lee, Julie Dash), hip-hop cinema, womanist films, 21st-century developments in film (e.g., theatre to film adaptations of Tyler Perry), new media's effect on film and cinema; particular attention given to gender, sexualities, region, ethnicity, and class. Same as AFAM:3130.

**AMST:3135 The Social Construction of Whiteness** 3 s.h.
Whiteness as a socially constructed racial category with material effects in everyday life; race as a category with salience in determining public policy, forming identities, and shaping people's actions; interdisciplinary approach using social history, philosophy, science, law, literature, autobiography, film, and the expressive arts.

**AMST:3148 American Monuments** 3 s.h.
How Americans enshrine certain memories in form of public monuments; why Americans began building large-scale monuments in 19th century (Bunker Hill, Washington Monument); subsequent monuments to wars, Indian massacres, the Confederacy, the civil rights movements; recent trends, including counter-monuments (9/11 memorial), spontaneous and temporary monuments, and online memorials; roles monuments play in American society, why they attract so much controversy, how some become sites for popular protests or for depositing artifacts, and how they compare with those in other countries (Holocaust memorials in Germany).
AMST:3171 Baseball in America 3 s.h.  
Forces that influenced political, economic, and social development of professional baseball in the United States; rise of major league baseball, its relationship to the minor leagues, and development of organized baseball industry. Same as SPST:3171.

AMST:3178 American Sport to 1900 3 s.h.  
Growth and institutionalization of sport from colonial times to 1900. Same as SPST:3178.

AMST:3179 American Sport Since 1900 3 s.h.  
Historic development of sport in the United States since 1900; economic forces, professionalization, growth of media. Same as SPST:3179.

AMST:3195 American Cultures and American Photography 3 s.h.  
Introduction to visual, cultural, and historical frameworks to view and interpret photographs as material artifacts.

AMST:3198 New Media and the Future of Sport 3 s.h.  
Emergence and significance of Internet blogs, social media, convergence journalism, video games, and fantasy sports; economic, regulatory, and cultural forces that shape new media sport journalism and entertainment. Same as SPST:3198, JMC:3135.

AMST:3400 Black Popular Music 3 s.h.  
History and expressive culture of people of African descent living in America through popular music forms; historical time span between the 17th and 21st centuries; poetry, music, cultural analysis, film, and art as sources for the study of Black music; genres covered include spirituals and gospel, blues, jazz, rock, rhythm and blues, Afropunk, alternative and neo soul, and hip-hop. Recommendations: AFAM:1020 and AMST:1030. Same as AFAM:3400.

AMST:3480 American Literature and History 3 s.h.  
Examination of fictional histories (novels about history), their relationship to historical interpretation. English majors may apply this course to the following area and/or period requirement. AREA: American Literature and Culture. PERIOD: 18th/19th-Century Literature, or 20th/21st-Century Literature. Same as ENGL:3480.

AMST:3994 Independent Study arr.  

AMST:4283 U.S. Women’s History as the History of Human Rights 3-4 s.h.  
History of human rights in the United States traced through the perspective of women; aspects of women’s experience (social, political, intellectual) related to fundamental human rights—right to a nationality, right to life, liberty and personal security, right to freedom of movement, right to take part in the government of their country, right to own property; these and other rights specified by the United Nations in the Universal Declaration of Human Rights, 1948; different history of men and women enjoying these rights; how human rights have been constructed and experienced in the United States from the era of colonial settlement to present. Same as HIST:4283, GWSS:4283, HRTS:4283.

AMST:4401 American Women Playwrights: 1776-Present 3 s.h.  
How women in the United States have expressed themselves in theatre since 1776; diversity of voices in works by African American, Asian American, Latina, Native American, European American, lesbian playwrights; female-authored drama and production in relation to concurrent male-authored traditions and socioeconomic, political, cultural phenomena. Same as THTR:4401.

AMST:4999 Honors Project 3 s.h.  
Independent interdisciplinary research, writing.

American Studies, Graduate

AMST:5000 Interdisciplinary Research in American Studies 3 s.h.  
Research, theories, and methods in American studies; origins, evolution, and future of discipline; key figures, texts, and debates.

AMST:5002 Critical Theories for Sport 3 s.h.  
Exploration and application of critical theories to contemporary sport; feminism, Marxism, critical race theory, whiteness studies, queer theory, postcolonial theory, postmodernism, and poststructuralism. Same as SPST:5002.

AMST:6030 Seminar: Performing Arts in American Culture 3 s.h.  
American theater, dance, music, and performance.

AMST:6058 Seminar: Technology and American Culture 3 s.h.  
American theater, dance, music, and performance.

AMAAT:6070 Seminar: Topics in Sport Studies 1-3 s.h.  
Special topics on sport in historical or contemporary contexts. Same as SPST:6070.

AMST:6078 Seminar: Women in Sport 3 s.h.  
Women’s sport involvement in historical and/or contemporary contexts; focus on social class, religion, race, ethnicity, sexuality, medical opinion, economic considerations, political events, and educational philosophies that have influenced women’s participation. Same as GWSS:6710, SPST:6078.

AMST:6080 American Film and American Culture 3 s.h.  
Relationships between film and culture as developed in a particular approach, period, subject. Same as CINE:6080.

AMST:6099 American Studies Proseminar 1-2 s.h.  
Intensive reading on American cultural analysis topics; may include screenings, field trips, guest speakers, special events.
**AMST:6276 Sport in U.S. Culture** 3 s.h.
Sport as a significant cultural form in the United States; focus on role of sport in cultural reproduction; institutional relationships between sport and politics, economy, education, and media. Same as SPST:6276.

**AMST:7077 Sport Studies Workshop** 1 s.h.
Development of individual research projects for group discussion. Requirements: graduate standing in American studies or sport studies. Same as SPST:7070.

**AMST:7080 M.A. Thesis** 0-6 s.h.

**AMST:7085 Dissertation Writing Workshop** 1 s.h.
Dissertation preparatory work with peer and faculty critiques, including preparation of a prospectus, research activities, and chapter writing. Requirements: American studies graduate standing with postcomprehensive examination status.

**AMST:7090 Ph.D. Thesis** arr.

**AMST:7994 Independent Study** arr.

### Sport Studies, Lower-Level Undergraduate

**SPST:1000 First-Year Seminar** 1-2 s.h.
Small discussion class taught by a faculty member; topics chosen by instructor; may include outside activities (e.g., films, lectures, performances, readings, visits to research facilities). Requirements: first- or second-semester standing.

**SPST:1074 Inequality in American Sport** 3 s.h.
Cultural meanings of sport in contemporary U.S. culture; American dream as promoted, challenged in sport; sport experiences, inclusion, and exclusion as affected by gender and sexuality, race and ethnicity, social class, age, physical ability/disability, and nationalism. GE: Values, Society, and Diversity. Same as AMST:1074, GWSS:1074.

**SPST:1847 Hawkeye Nation: On Iowa and Sport** 3 s.h.
Identity, community, and place explored within local frameworks: the University of Iowa, Iowa City, State of Iowa; how sport, literature, film, other cultural institutions forge connections to community and shape Iowa's image in the public imagination; identity and community as complex and contested issues; local rituals, sites of memorialization, acts of erasure, management and use of public and private space such as UI athletic complex, Field of Dreams, Iowa Writers' Workshop, Iowa Avenue Literary Walk, Blackhawk Park; interdisciplinary approaches grounded in American studies, sport studies, American Indian and native studies, literature, history. Same as AMST:1847.

**SPST:2050 The American Vacation** 3 s.h.
Development of the Idea of vacation from upper-class origins to acceptance as part of middle- and working-class life; Niagara Falls, Saratoga Springs, the Catskills, Atlantic City, Idewild, Coney Island, national parks of the American West, Chicago World's Fair, Gettysburg, Disneyland; how vacation experiences and meanings are shaped by social class, race, gender, age; growth of leisure time, labor legislation, proper use of leisure time, tourism, vacations as social rituals, golden age of family vacations. Same as AMST:2050.

**SPST:2077 Sport and Religion in America** 3 s.h.
Sport as a religion; religiosity in sports; examination of religion and sport as connected in important ways in American society. Same as RELS:2877.

**SPST:2078 Women, Sport, and Culture** 3 s.h.
Feminist analysis of girls' and women's sports experiences, including reproduction of gender through sport, recent changes in women's intercollegiate athletics, media representations of women's sport, feminist critiques, alternatives to sport. Same as GWSS:2078.

**SPST:2079 Race and Ethnicity in Sport** 3 s.h.
Structural and ideological barriers to racial and ethnic equality in sport, with focus on African American sport experiences; historical and contemporary issues, media representations. Same as AFAM:2079.

**SPST:2081 Theory and Ethics of Coaching** 3 s.h.
Philosophical bases, ethical issues; theoretical, practical applications.

**SPST:2084 Sport and Film** 3 s.h.
Sport films as means of exploring contemporary ideas about sport in the U.S.; focus on narrative structure, characterization, historical, and political contexts; formal aspects of film analysis (e.g., editing, lighting, cinematography). Same as AMST:2084.

### Sport Studies, Upper-Level Undergraduate and Graduate

**SPST:3171 Baseball in America** 3 s.h.
Forces that influenced political, economic, and social development of professional baseball in the United States; rise of major league baseball, its relationship to the minor leagues, and development of organized baseball industry. Same as AMST:3171.

**SPST:3172 Football in America** 3 s.h.
Forces that influenced political, economic, and cultural development of college and professional football in the United States; rise of the National Football League and its relationship to college football and commercial media interests.

**SPST:3175 Sport and the Media** 3 s.h.
Examination of sport and media's intimate relationship; aesthetic, cultural, political, economic, and industrial factors that shape it. Same as JMC:3183.
SPST:3176 Sport and Nationalism  
Role of sport in the phenomenon of nationalism; selected theories; case studies on Ireland, Australia, British West Indies, Cold War U.S., fascist Europe.

SPST:3177 Sport in the Western World  
Development of Western sport; relation to social, political, economic, intellectual factors.

SPST:3178 American Sport to 1900  
Growth and institutionalization of sport from colonial times to 1900. Same as AMST:3178.

SPST:3179 American Sport Since 1900  
Historic development of sport in the United States since 1900; economic forces, professionalization, growth of media. Same as AMST:3179.

SPST:3180 Classics of Sports Journalism: From Jack London to Grantland  
Historical examples of celebrated works of sports journalism; focus on long-form texts. Same as JMC:3190.

SPST:3181 The Business of Sport Communication  
Critical and practical approach to understanding contemporary sports media and business practices that mark it; focus on sports media industries and institutions; branding, marketing, demographic, public relations, and promotional factors that shape content. Same as JMC:3181.

SPST:3182 Sport, Scandal, and Strategic Communication in Media Culture  
Use of sport scandal to consider relationship between sport and media in American and global popular culture; broad range of case studies used to consider what constitutes a sport scandal, how this definition shifts in different circumstances; crucial roles media play in creating, communicating, and diffusing these crises; how phenomenon of sports scandal has intensified along with emergence of cable television, the Internet, and social media. Same as JMC:3182.

SPST:3193 Independent Study  
Problem in a specific area.

SPST:3198 New Media and the Future of Sport  
Emergence and significance of Internet blogs, social media, convergence journalism, video games, and fantasy sports: economic, regulatory, and cultural forces that shape new media sport journalism and entertainment. Same as AMST:3198, JMC:3135.

SPST:3911 Sport in the Shadow of 9/11  
Profound impact of events of September 11, 2001 in the United States and abroad; how sport has often played a role in constructing understandings of the United States and what it means to be a U.S. citizen; use of sport to interrogate U.S. nationalism and what it means to be a U.S. citizen in post-9/11 era; investigation of stories about the United States after 9/11 using responses from MLB and NFL, 2002 Olympics, and others; the future; how more critically nuanced understandings of sport's role in the United States might lead us to become more reflective and active citizens.

SPST:4900 Topics in Sport Studies  
Special topics on sport in historical or contemporary contexts.

SPST:4950 Sport Studies Internship  
Application of classroom concepts in practical settings; individualized experience arranged by student in consultation with advisor. Requirements: completion of 85 s.h. and minimum g.p.a. of 2.50.

SPST:4999 Honors Project  
1-3 s.h.

Sport Studies, Graduate

SPST:5002 Critical Theories for Sport  
Exploration and application of critical theories to contemporary sport; feminism, Marxism, critical race theory, whiteness studies, queer theory, postcolonial theory, postmodernism, and poststructuralism. Same as AMST:5002.

SPST:6010 Nonprofit Organizational Effectiveness I  

SPST:6020 Nonprofit Organizational Effectiveness II  

SPST:6070 Seminar: Topics in Sport Studies  
Special topics on sport in historical or contemporary contexts. Same as AMST:6070.

SPST:6072 Seminar in Cultural Studies of Sport  
Current theoretical debates in sport studies; applications of critical cultural studies theories to critical analysis of sport.
SPST:6074 Seminar in Sport History 3 s.h.
Topics in sport history; theoretical and methodological issues.

SPST:6078 Seminar: Women in Sport 3 s.h.
Women's sport involvement in historical and/or contemporary contexts; focus on social class, religion, race, ethnicity, sexuality, medical opinion, economic considerations, political events, and educational philosophies that have influenced women's participation. Same as GWSS:6710, AMST:6078.

SPST:6276 Sport in U.S. Culture 3 s.h.
Sport as a significant cultural form in the United States; focus on role of sport in cultural reproduction; institutional relationships between sport and politics, economy, education, and media. Same as AMST:6276.

SPST:7070 Sport Studies Workshop 1 s.h.
Development of individual research projects for group discussion. Requirements: graduate standing in American studies or sport studies. Same as AMST:7077.

SPST:7080 Thesis: M.A. 1-6 s.h.


SPST:7940 Independent Study arr.
Anthropology

Chair
• James Enloe

Undergraduate major: anthropology (B.A., B.S.)
Undergraduate minor: anthropology
Graduate degrees: M.A. in anthropology; Ph.D. in anthropology
Faculty: http://clas.uiowa.edu/anthropology/people/faculty
Web site: http://clas.uiowa.edu/anthropology/

Anthropology is the comparative study of peoples and cultures past and present. The discipline’s four major subfields—cultural anthropology, biological anthropology, linguistic anthropology, and archaeology—have important connections to other social sciences, physical and biological sciences, and to the arts and humanities.

Anthropology provides a framework for understanding the relation of human beings to their natural environment and to the social and cultural worlds they create and inhabit. The field provides insight into biological and sociocultural evolution and includes a focus on economic, social, and political organizations, symbolic systems, and social systems. Comparative studies of these and other aspects of past and present cultures yield information on regularities and differences.

In addition to offering undergraduate and graduate degree programs, the Department of Anthropology administers the University’s Museum Studies (p. 470) Program, which offers an undergraduate certificate.

Undergraduate Programs of Study

• Major in anthropology (Bachelor of Arts, Bachelor of Science)
• Minor in anthropology

The major in anthropology prepares individuals for advanced training or careers in anthropology, allied fields, and professional programs. Students who complete an anthropology major gain special understanding of human relations and expertise for jobs involving cross-cultural work, cultural resource management, and in responding to social and ethnic diversity, whether in the United States or globally.

Upon graduation, anthropology majors embark on careers in government, international affairs, conservation, economic development, public health, cultural resource management, urban and regional planning, social work, museum work, and education. Many go on to help resolve contemporary world problems by working with international or domestic organizations such as AmeriCorps, the Peace Corps, and Teach for America. Some pursue graduate study in anthropology or related social and natural sciences, while others earn degrees in business, law, or the health professions.

Bachelor of Arts, Bachelor of Science

The Bachelor of Arts with a major in anthropology requires a minimum of 120 s.h., including 33 s.h. of work for the major. The Bachelor of Science with a major in anthropology requires a minimum of 120 s.h., including 39 s.h. of work for the major. Students must maintain a g.p.a. of at least 2.00 in all courses for the major and in all UI courses for the major. They also must complete the College of Liberal Arts and Sciences General Education Program (p. 313).

The B.A. is designed to offer a comprehensive overview of anthropology’s four main subfields and the broadest possible cross-cultural background. The B.S. is appropriate for students with interests in any of anthropology’s subfields; it offers enhanced opportunities to gain experience and develop skills in research methods and scientific reasoning.

B.A. and B.S. students may choose to complete one of four specialized tracks: gender and culture, cultural resource and heritage management, environmental anthropology, or medical anthropology. B.S. students also have the option of completing a track in anthropology for the health professions. See "Optional Undergraduate Tracks" below.

All undergraduates majoring in anthropology, including transfer students, must earn a minimum of 15 s.h. for the major at the University of Iowa. Students may apply credit earned at approved field schools offered by other institutions toward the major, with Department of Anthropology approval.

Students who declare anthropology as their major when they are admitted to the College of Liberal Arts and Sciences are advised at the Academic Advising Center until they have earned 24 s.h. Students who have earned more than 24 s.h. are advised by the departmental undergraduate advisor.

The major in anthropology requires the following course work.

Common Requirements (B.A. and B.S.)

All students (B.A. and B.S.) must complete 11 courses from the lists below: five introductory courses, one course in archaeology or biological anthropology, one course in sociocultural or linguistic anthropology, one course in area studies, and three electives. Several courses are listed in more than one of these categories; students may not select the same course to fulfill requirements in more than one category.

Introductory courses—all of these:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>ANTH:1001</td>
<td>Issues in Anthropology</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ANTH:1101</td>
<td>Cultural Anthropology</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ANTH:1201</td>
<td>Introduction to Prehistory</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ANTH:1301</td>
<td>Human Origins</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ANTH:1401</td>
<td>Language, Culture, and Communication</td>
<td>3 s.h.</td>
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</table>

Archaeology or biological anthropology (area or topical)—one of these:

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<thead>
<tr>
<th>Course Code</th>
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<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>ANTH:2205</td>
<td>Archaeological Methods</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ANTH:2216</td>
<td>Foodways and Cuisine in the Past</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ANTH:2220</td>
<td>Archaeology of Mesoamerica</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ANTH:2261</td>
<td>Human Impacts on the Environment</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ANTH:2290</td>
<td>Practicum in Archaeology</td>
<td>arr.</td>
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</tbody>
</table>
ANTH:2320 Anthropological Perspectives on Human Infectious Disease: Origins and Evolution 3 s.h.
ANTH:3205 Prehistoric People of the Ice Age 3 s.h.
ANTH:3206 Seminar: Taphonomy 3 s.h.
ANTH:3207 Animal Bones in Archaeology 3 s.h.
ANTH:3235 The Stuff of Lives: Archaeology of the Material World 3 s.h.
ANTH:3237 Politics of the Archaeological Past 3 s.h.
ANTH:3238 Archaeology of the Iberian Peninsula 3 s.h.
ANTH:3239 Tribes and Chiefdoms of Ancient Europe 3 s.h.
ANTH:3240 Cultural Resources Management Archaeology: Practice and Practicalities 3 s.h.
ANTH:3241 Lithic Analysis in Archaeology 3 s.h.
ANTH:3242 Archaeology of the Middle East—Prehistory and Early History 3 s.h.
ANTH:3243 Midwestern Archaeology 3 s.h.
ANTH:3255 Introduction to Archaeological Ceramics 3 s.h.
ANTH:3256 Household Archaeology and Anthropology 3 s.h.
ANTH:3257 North American Archaeology 3 s.h.
ANTH:3258 Southwestern Archaeology 3 s.h.
ANTH:3260 Pleistocene Peopling of the Americas 3 s.h.
ANTH:3261 Our Life With Dogs: The Anthropological Study of Animals in Human Societies 3 s.h.
ANTH:3265 Archaeology of the Great Plains 3 s.h.
ANTH:3275 The Archaeology of Ancient Egypt 3 s.h.
ANTH:3276 Greek Archaeology and Ethnohistory 3 s.h.
ANTH:3277 Roman Archaeology 3 s.h.
ANTH:3282 Animals, Culture, and Food 3 s.h.
ANTH:3283 Cultures in Collision 3 s.h.
ANTH:3290 Special Topics in Archaeology 3 s.h.
ANTH:3295 Field Research in Archaeology arr.
ANTH:3305 Human Osteology 3 s.h.
ANTH:3306 The Neanderthal Enigma 3 s.h.
ANTH:3307 Modern Human Origins 3 s.h.
ANTH:3308 Human Variation 3 s.h.
ANTH:3310 Primate Behavior: Sex Lives of Apes and Monkeys 3 s.h.
ANTH:3322 Primate Evolutionary Biology 3 s.h.
ANTH:3325 Human Evolutionary Genetics 3 s.h.
ANTH:3326 Infectious Disease and Human Evolution 3 s.h.
ANTH:3327 Genes, Culture, and Human Diversity 3 s.h.
ANTH:3328 Molecular Genetics of Human Disease 3 s.h.
ANTH:3330 Human Evolution in Africa and Eurasia 3 s.h.
ANTH:4205 Rise of Ancient Civilization 3 s.h.
ANTH:4315 Human Evolutionary Anatomy 3 s.h.
ANTH:4620 Approaches to Geoarchaeology 3 s.h.

Sociocultural or linguistic anthropology—one of these:

ANTH:2101 The Anthropology of Love 3 s.h.
ANTH:2102 Anthropology of Marriage and Family 3 s.h.
ANTH:2136 Urban Anthropology 3 s.h.
ANTH:2150 Transnational Feminism 3 s.h.
ANTH:2181 The Anthropology of Aging 3 s.h.
ANTH:3101 Anthropology of Sexuality 3 s.h.
ANTH:3102 Medical Anthropology 3 s.h.
ANTH:3103 Environment and Culture 3 s.h.
ANTH:3107 Literature and Anthropology 3 s.h.
ANTH:3109 Psychological Anthropology 3 s.h.
ANTH:3110 Health of Indigenous Peoples 3 s.h.
ANTH:3112 Environmentalisms 3 s.h.
ANTH:3113 Religion and Healing 3 s.h.
ANTH:3114 Anthropology of Religion 3 s.h.
ANTH:3116 Fictionalized Ethnography in Literature and Film 3 s.h.
ANTH:3117 Using Ethnographic Methods 3 s.h.
ANTH:3118 Politics of Reproduction 3 s.h.
ANTH:3123 Making a Living: Perspectives on Economic Anthropology 3 s.h.
ANTH:3127 Anthropology of Death 3 s.h.
ANTH:3130 Cultural Politics 3 s.h.
ANTH:3131 Anthropology and Human Rights 3 s.h.
ANTH:3133 Anthropology of Race 3 s.h.
ANTH:3135 Key Debates in Sociocultural Anthropology 3 s.h.
ANTH:3140 Feminist Anthropology 3 s.h.
ANTH:3141 Women, Health, and Healing 3 s.h.
ANTH:3151 The Anthropology of the Beginnings and Ends of Life 3 s.h.
ANTH:3152 Anthropology of Caregiving and Health 3 s.h.
ANTH:3160 Global Health Seminar 3 s.h.
ANTH:3300 Mothers and Motherhood 3 s.h.
ANTH:3415 Multimedia Ethnography 3 s.h.
ANTH:4130 Religion and Environmental Ethics 3 s.h.
ANTH:4140 The Anthropology of Women's Health 3 s.h.

Area studies—one of these:

ANTH:2108 Gendering India 3 s.h.
ANTH:2110 Latin American Economy and Society 3 s.h.
ANTH:2165 Native Peoples of North America 3 s.h.
ANTH:2175 Japanese Society and Culture 3 s.h.
ANTH:2182 Africa: Health and Society 3 s.h.
ANTH:2220 Archaeology of Mesoamerica 3 s.h.
ANTH:3108 North Korea and Totalitarianism 3 s.h.
ANTH:3111 Health in Mexico 3 s.h.
ANTH:3121 Love and Kinship in South Asia 3 s.h.
ANTH:3142 American Cultures 3 s.h.
ANTH:3238 Archaeology of the Iberian Peninsula 3 s.h.
ANTH:3239 Tribes and Chiefdoms of Ancient Europe 3 s.h.
ANTH:3242 Archaeology of the Middle East—Prehistory and Early History 3 s.h.
ANTH:3257 North American Archaeology 3 s.h.
One of these advisors. who would like to use other courses should consult their following courses to fulfill the tool requirement. Students Reasoning requirement. The department accepts the General Education Program’s Quantitative and Formal reasoning tool (a minimum of 3 s.h.) in statistics, computing, logic, and/or mathematics in addition to the course they take to fulfill these requirements in the following three areas.

Bachelor of Science students must complete one course (a minimum of 3 s.h.) in statistics, computing, logic, and/or mathematics in addition to the course they take to fulfill the General Education Program’s Quantitative and Formal Reasoning requirement. The department accepts the following courses to fulfill the tool requirement. Students who would like to use other courses should consult their advisors.

One of these:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH:3258</td>
<td>Southwestern Archaeology</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ANTH:3265</td>
<td>Archaeology of the Great Plains</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ANTH:3275</td>
<td>The Archaeology of Ancient Egypt</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ANTH:3276</td>
<td>Greek Archaeology and Ethnohistory</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ANTH:3277</td>
<td>Roman Archaeology</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ANTH:3306</td>
<td>The Neanderthal Enigma</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ANTH:3330</td>
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</tr>
<tr>
<td>ANTH:4700</td>
<td>Latin American Studies Seminar</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>COMM:1117</td>
<td>Theory and Practice of Argument</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>CS:1110</td>
<td>Introduction to Computer Science</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>CS:1210</td>
<td>Computer Science I: Fundamentals</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>HONR:1650</td>
<td>Honors Seminar in Quantitative and Formal Reasoning</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>LING:1050</td>
<td>Language and Formal Reasoning</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>MATH:1440</td>
<td>Mathematics for the Biological Sciences</td>
<td>4 s.h.</td>
</tr>
</tbody>
</table>

Electives:

Three elective courses numbered 2000 or above

Anthropology electives offer many options, including courses dealing with environment and culture, expressive culture (art, verbal arts, literature, music, and dance), gender and sexuality, human evolution, human osteology, human prehistory, identity, language and culture, medical anthropology, molecular genetics, primatology, psychological anthropology, religion and ritual, and urban anthropology. Department faculty members offer area studies courses that focus on Latin America, Europe, Japan, South Asia, and Native North America.

**Additional Bachelor of Arts Requirements**

Bachelor of Arts students are strongly encouraged to take courses and participate in archaeological field and laboratory research, biological anthropology laboratory research, ethnographic research methods in sociocultural anthropology, and multimedia research in linguistic anthropology.

**Additional Bachelor of Science Requirements**

Bachelor of Science students must fulfill additional requirements in the following three areas.

- Quantitative, mathematical, or formal reasoning tool
- Directed laboratory or field research
- Allied topical course work

**QUANTITATIVE, MATHEMATICAL, OR FORMAL REASONING TOOL (B.S.)**

Bachelor of Science students must complete one course (a minimum of 3 s.h.) in statistics, computing, logic, and/or mathematics in addition to the course they take to fulfill the General Education Program’s Quantitative and Formal Reasoning requirement. The department accepts the following courses to fulfill the tool requirement. Students who would like to use other courses should consult their advisors.

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<td>Mathematics for the Biological Sciences</td>
<td>4 s.h.</td>
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**DIRECTED LABORATORY OR FIELD RESEARCH (B.S.)**

Bachelor of Science students complete an approved directed research requirement (minimum of 3 s.h.) consisting of one of the following.

- Laboratory research: a laboratory practicum in anthropology research labs or independent, faculty-guided, laboratory research, including use of the collections of the Office of the State Archaeologist.
- Field research project: faculty-advised projects involving the collection of primary archaeological, biological, ethnographic, and/or linguistic data in a fieldwork setting.
- An approved internship; internships typically involve work in cultural resource management firms, museums, and public health research or education projects; to receive research credit for an internship, students must make a final report to their faculty advisor, summarizing the work accomplished or presenting materials that document the nature of the work.

**ALLIED TOPICAL FIELD (B.S.)**

Bachelor of Science students complete a topical concentration in one of the following allied fields: biology, chemistry, computer science, earth and environmental sciences, economics, geographical and sustainability sciences, global health studies, health and human physiology, linguistics, mathematics, psychology, science education, sport studies, or statistics and actuarial science.

**Optional Undergraduate Tracks (B.A. and B.S.)**

All students majoring in anthropology have the option of adding a particular focus to their study plan by completing a specialized track. B.A. students may choose one of four options: gender and culture, cultural resource and heritage management, environmental anthropology, or medical anthropology. B.S. students may also choose any of these four options, or an additional track in anthropology for the health professions.

The optional tracks reflect broad issues bridging subfields in and outside of anthropology. Completion of a track indicates the acquisition of considerable expertise and is noted on the student’s transcript.

The optional tracks each require 15 s.h. (five courses). By selecting courses carefully, students majoring in...
anthropology can complete a specialization or the track without adding to the semester hours required for graduation.

**GENDER AND CULTURE TRACK (B.A. AND B.S.)**

Anthropological research regarding gender and sexuality has grown dramatically in recent years, enhancing and drawing from other theoretical and methodological approaches in anthropology. This research contributes a cross-cultural perspective to discussion surrounding these fundamental aspects of human experience, both in academia and in public life.

The gender and culture track requires 15 s.h. (five courses) chosen from the following list. Each course provides an integrated overview of essential theoretical and topical issues in the field.

Five of these:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH:2101</td>
<td>The Anthropology of Love</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ANTH:2102</td>
<td>Anthropology of Marriage and Family</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ANTH:2108</td>
<td>Gendering India</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ANTH:2150</td>
<td>Transnational Feminism</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ANTH:3101</td>
<td>Anthropology of Sexuality</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ANTH:3118</td>
<td>Politics of Reproduction</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ANTH:3121</td>
<td>Love and Kinship in South Asia</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ANTH:3140</td>
<td>Feminist Anthropology</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ANTH:3141</td>
<td>Women, Health, and Healing</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ANTH:3151</td>
<td>The Anthropology of the Beginnings and Ends of Life</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ANTH:3152</td>
<td>Anthropology of Caregiving and Health</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ANTH:3300</td>
<td>Mothers and Motherhood</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ANTH:4140</td>
<td>The Anthropology of Women’s Health</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

**CULTURAL RESOURCE AND HERITAGE MANAGEMENT TRACK (B.A. AND B.S.)**

In North America and throughout much of the rest of the world, modern land use continually threatens evidence of past land use. Most archaeological excavations are conducted as cultural resource management (CRM), so it is essential that all researchers who work with archaeological data and individuals committed to site preservation have a basic understanding of CRM. Students who choose this emphasis learn about the field and about how to address related ethical issues as well as technical and theoretical challenges.

The cultural resource and heritage management emphasis requires 15 s.h. (five courses): a fundamental overview course, two area electives, a technical/practical elective, and a field school course. Students may use some of these courses to satisfy requirements for the major, such as the course in archaeology and the electives.

Overview—this course:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH:3240</td>
<td>Cultural Resources Management</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ANTH:3256</td>
<td>Introduction to Archaeological Ceramics</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ANTH:3260</td>
<td>Pleistocene Peopling of the Americas</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ANTH:3265</td>
<td>Archaeology of the Great Plains</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

Area electives—two of these (or one of these and one other Department of Anthropology area course):

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH:2165</td>
<td>Native Peoples of North America</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ANTH:3257</td>
<td>North American Archaeology</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

**ENVIRONMENTAL ANTHROPOLOGY TRACK (B.A. AND B.S.)**

The interaction between humans and the environments they inhabit has long been a central issue in anthropology, and environmental degradation is a worldwide concern today. Pollution, loss of biodiversity, and global warming recognize no political boundaries, but attitudes and behaviors involving the natural environment vary widely from culture to culture. The understanding and incorporation of these varied perspectives are vital to the development and successful use of workable solutions.

The environmental anthropology track requires 15 s.h. (five courses): two theory courses, which deal primarily with human-environmental interactions; and three area or topical electives, which deal in part with environment, ecology, and subsistence technologies. The following are sample courses in each area (courses must be numbered 2000 or above).

**Theory courses:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH:2261</td>
<td>Human Impacts on the Environment</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ANTH:3103</td>
<td>Environment and Culture</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ANTH:3112</td>
<td>Environmentalisms</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ANTH:4130</td>
<td>Religion and Environmental Ethics</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

Area or topical electives:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH:2110</td>
<td>Latin American Economy and Society</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ANTH:2175</td>
<td>Japanese Society and Culture</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ANTH:2216</td>
<td>Foodways and Cuisine in the Past</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ANTH:3205</td>
<td>Prehistoric People of the Ice Age</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ANTH:3207</td>
<td>Animal Bones in Archaeology</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ANTH:3238</td>
<td>Archaeology of the Iberian Peninsula</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ANTH:3239</td>
<td>Tribes and Chieftoms of Ancient Europe</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ANTH:3265</td>
<td>Archaeology of the Great Plains</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

**Technical/practical elective—one of these:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH:2205</td>
<td>Archaeological Methods</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ANTH:2210</td>
<td>Practicum in Archaeology</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ANTH:3221</td>
<td>Beyond the Map: Introduction to Geographic Information Systems (GIS) in Anthropology</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

Field school—one of these:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH:3295</td>
<td>Field Research in Archaeology</td>
<td>arr.</td>
</tr>
</tbody>
</table>
recognize how sociocultural and biological factors intersect. Health professionals are increasingly called upon to prepare for a range of health professions and social services in an increasingly global world. Course work in medical anthropology helps students develop understanding of cultural and biological variation in health and sickness. They also examine how and why particular therapeutic interventions may be more or less effective when translated into different cultural settings and disease ecologies.

This track enables students entering the health professions to distinguish themselves when they apply to graduate and professional programs. It also may help them prepare for the Medical College Admission Test (MCAT). Learn more by visiting Optional Undergraduate Tracks on the Department of Anthropology web site.

The anthropology for the health professions track requires 15 s.h. (five courses), including a required overview course and four additional track courses chosen from the list below. Most courses in the list fulfill the anthropology major’s common requirements for courses in archaeology or biological anthropology, in sociocultural or linguistic anthropology, and electives; and ANTH:3111 Health in Mexico counts toward the major’s area studies requirement. By choosing courses carefully, students may complete this track without adding to the semester hours required for graduation.

Overview—this course:

**ANTH:2164 Culture and Healing for Future Health Professionals**

3 s.h.

Four of these (12 s.h.):

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH:2103 Introduction to Global Health Studies</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ANTH:2164 Culture and Healing for Future Health Professionals</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ANTH:2181 The Anthropology of Aging</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ANTH:2182 Africa: Health and Society</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ANTH:2320 Anthropological Perspectives on Human Infectious Disease: Origins and Evolution</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ANTH:3101 Anthropology of Sexuality</td>
<td>3 s.h.</td>
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<td>ANTH:3102 Medical Anthropology</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ANTH:3109 Psychological Anthropology</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ANTH:3110 Health of Indigenous Peoples</td>
<td>3 s.h.</td>
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<tr>
<td>ANTH:3111 Health in Mexico</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ANTH:3118 Politics of Reproduction</td>
<td>3 s.h.</td>
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<tr>
<td>ANTH:3141 Women, Health, and Healing</td>
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<tr>
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<tr>
<td>ANTH:3326 Infectious Disease and Human Evolution</td>
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<tr>
<td>ANTH:4140 The Anthropology of Women's Health</td>
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**MEDICAL ANTHROPOLOGY TRACK (B.A. AND B.S.)**

Human experiences of sickness and suffering are universal yet profoundly shaped by cultural and historical contexts. Medical anthropology explores cultural and biological diversity in sickness, health, and healing through approaches that include examining individual experiences of disrupted well-being, considering how biological and cultural factors interact to promote health or produce sickness, analyzing political-economic causes of health inequalities, and applying research to improve health research and services in an increasingly global world. Course work in medical anthropology helps students prepare for a range of health professions and social services careers and for work in diverse settings that increasingly include nongovernmental organizations devoted to improving health.

The medical anthropology track requires 15 s.h. (five courses): one overview course and four electives that focus on particular topics.

Overview—this course:

**ANTH:3102 Medical Anthropology**

3 s.h.

Electives—four of these:

<table>
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**ANTHROPOLOGY FOR THE HEALTH PROFESSIONS TRACK (B.S.)**

Health professionals are increasingly called upon to recognize how sociocultural and biological factors intersect to produce experiences of health, sickness, and healing. The anthropology for the health professions track is rooted in anthropology’s holistic approach to understanding the human condition. It provides a comprehensive education in the biological and social bases for human health. Students develop understanding of cultural and biological variation in health and sickness. They also examine how and why particular therapeutic interventions may be more or less effective when translated into different cultural settings and disease ecologies.

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<tr>
<td>ANTH:3102 Medical Anthropology</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ANTH:3109 Psychological Anthropology</td>
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<td>ANTH:3160 Global Health Seminar</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ANTH:3305 Human Osteology</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ANTH:3308 Human Variation</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ANTH:3325 Human Evolutionary Genetics</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ANTH:3326 Infectious Disease and Human Evolution</td>
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**ETHNOARCHAEOLOGY**

<table>
<thead>
<tr>
<th>Course</th>
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</thead>
<tbody>
<tr>
<td>ANTH:3275 The Archaeology of Ancient Egypt</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ANTH:3282 Animals, Culture, and Food</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ANTH:3283 Cultures in Collision</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ANTH:4205 Rise of Ancient Civilization</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ANTH:4620 Approaches to Geoarchaeology</td>
<td>3 s.h.</td>
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<tr>
<td>ANTH:6205 Hunter-Gatherer</td>
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The anthropology for the Medical College Admission Test (MCAT). Learn more by visiting Optional Undergraduate Tracks on the Department of Anthropology website.
B.A. or B.S. with Teacher Licensure

Anthropology majors interested in earning licensure to teach in elementary and/or secondary schools must complete the College of Education’s Teacher Education Program (TEP) in addition to the requirements for the major and all requirements for graduation. The TEP requires several College of Education courses and student teaching. Contact the Office of Education Services for details.

Students must satisfy all degree requirements and complete Teacher Education Program licensure before degree conferral.

Four-Year Graduation Plan

The following checkpoints list the minimum requirements students must complete by certain semesters in order to stay on the University’s Four-Year Graduation Plan.

Bachelor of Arts

Before the fifth semester begins: at least two courses in the major
Before the seventh semester begins: at least seven courses in the major and at least 90 s.h. earned toward the degree
Before the eighth semester begins: at least eight courses in the major
During the eighth semester: enrollment in all remaining course work in the major, all remaining General Education courses, and a sufficient number of semester hours to graduate

Bachelor of Science

Before the third semester begins: at least one anthropology course or other course in the major
Before the fifth semester begins: at least four anthropology courses or other courses in the major, one course in the topical field, and one course for the quantitative or formal reasoning tool requirement
Before the seventh semester begins: at least seven courses in the major, three courses in the topical field, the second quantitative or formal reasoning tool course, and at least 90 s.h. earned toward the degree
Before the eighth semester begins: at least nine courses in the major, including the directed research requirement, and four courses in the topical field
During the eighth semester: enrollment in all remaining course work in the major (including the topical field), all remaining General Education courses, and a sufficient number of semester hours to graduate

Honors in the Major

Students majoring in anthropology have the opportunity to graduate with honors in the major. Departmental honors students must have a g.p.a. of at least 3.50 in anthropology. To graduate with honors in the major, they must conduct an independent research project that culminates in a 30-50 page thesis. The project includes completion of 6 s.h. divided between ANTH:4995 Honors Research Seminar (offered only in fall semesters) and ANTH:4996 Honors Research, typically taken the next semester. Honors students also must take one of their anthropology courses at the graduate level.

Students working toward a B.S. may count their directed research project or laboratory practicum toward the requirements for graduation with honors, but fulfilling the research requirement for the B.S. does not by itself fulfill the honors research requirement. Students must work with their honors thesis advisor to structure their research so that it meets the added requirements of honors work.

Contact the department’s director of undergraduate studies to learn more about honors in anthropology.

In addition to honors in their majors, undergraduate students have a variety of opportunities for honors study and activities through membership in the University of Iowa Honors Program; visit Honors at Iowa to learn about the University’s honors program.

Minor

The minor in anthropology requires a minimum of 15 s.h. in anthropology courses, including 12 s.h. in University of Iowa Department of Anthropology courses numbered 2000 or above. Students must maintain a g.p.a. of at least 2.00 in all courses for the minor and in all UI courses for the minor. Courses for the minor may not be taken pass/nonpass.

Students may create a focus for the minor by completing a specialization area; see "Optional Undergraduate Tracks" above.

Certificate in Museum Studies

The Department of Anthropology administers the University’s Museum Studies Program, which offers an undergraduate certificate; see Museum Studies (p. 470) in the Catalog.

Graduate Programs of Study

• Master of Arts in anthropology
• Doctor of Philosophy in anthropology

Graduate study in anthropology is open to individuals with varied undergraduate majors and training backgrounds. Students normally are admitted directly to the Ph.D. program; once they complete requirements for the M.A., their committees recommend whether or not they should continue to work toward the Ph.D.

Graduate students become competent in the discipline’s four major subfields: sociocultural anthropology, linguistic anthropology, archaeology, and biological anthropology. Ph.D. students develop professional specialization for independent research and teaching in one of the subfields and may elect to pursue a focus area in feminist anthropology or paleoanthropology. Students also may choose to earn a terminal M.A. with a focus on cultural resource management—archaeology (CRM), which prepares them for a professional career in that field.

Master of Arts

The Master of Arts program in anthropology requires 30-36 s.h. of graduate credit, depending on the student’s previous anthropological training. Students may count a maximum of 9 s.h. earned in courses outside anthropology toward the M.A. in anthropology. It is expected that a full-
time student will complete all M.A. requirements by the end of the second year in the program.

Master’s degree students who choose to focus on cultural resource management—archaeology (CRM) normally do not go on to earn a Ph.D. in anthropology.

By the end of their first semester, each student must select an M.A. committee, consisting of an advisor and two additional professors. Each year, a student compiles, in consultation with his or her advisor, the three strongest papers written for anthropology courses, conferences, or journals; an annotated bibliography; their current curriculum vitae; and a three-page narrative to describe their intellectual trajectory in the M.A. program to date.

Each student must maintain an overall g.p.a. of at least 3.00.

Master’s degree students who intend to earn a doctorate should consider taking ANTH:5110 Anthropological Data Analysis or another statistics course during their M.A. study.

GENERAL COURSE WORK
M.A. students not pursuing the cultural resource management focus must complete core seminars in all four subfields (total of 12 s.h.).

All of these:
- ANTH:5101 Seminar Sociocultural Anthropology 3 s.h.
- ANTH:5201 Seminar: Archaeological Theory and Method 3 s.h.
- ANTH:5301 Seminar: Biological Anthropology 3 s.h.
- ANTH:5401 Seminar: Linguistic Anthropology 3 s.h.

ELECTIVES
In consultation with the advisor and committee members, a student selects a minimum of 18 s.h. of additional course work to complete the remaining semester hours required for the M.A. Elective work may include courses in other disciplines, directed study, and up to 6 s.h. of M.A. thesis credit for students who choose the thesis option.

Cultural Resource Management Focus
Most archaeological excavations and surveys are conducted as cultural resource management (CRM), so it is essential that all researchers who work with archaeological data and individuals committed to site preservation have a basic understanding of CRM. Students who select this focus area learn about the field and how to address related ethical issues as well as technical and theoretical challenges.

Students must complete the archeological core graduate seminar. They also must complete a thesis or equivalent paper, which is an archaeological study with a substantive data analysis directed toward an explicit archaeological research problem, suitable to meet the section three requirement for the Registry of Professional Archaeologist application form.

The cultural resource management focus requires a total of 30 s.h., including 24 s.h. of course work and 6 s.h. of M.A. thesis credit.

REQUIRED COURSE WORK
Both of these:
- ANTH:3240 Cultural Resources Management
- ANTH:5201 Seminar: Archaeological Theory and Method

AREA ELECTIVES
Two of these:
- ANTH:2165 Native Peoples of North America 3 s.h.
- ANTH:3243 Midwestern Archaeology 3 s.h.
- ANTH:3257 North American Archaeology 3 s.h.
- ANTH:3258 Southwestern Archaeology 3 s.h.
- ANTH:3260 Pleistocene Peopling of the Americas 3 s.h.
- ANTH:3265 Archaeology of the Great Plains 3 s.h.

TECHNICAL ELECTIVES
Four of these:
- ANTH:2205 Archaeological Methods 3 s.h.
- ANTH:3207 Animal Bones in Archaeology 3 s.h.
- ANTH:3237 Politics of the Archaeological Past 3 s.h.
- ANTH:3241 Lithic Analysis in Archaeology 3 s.h.
- ANTH:3255 Introduction to Archaeological Ceramics 3 s.h.
- ANTH:3256 Household Archaeology and Anthropology 3 s.h.
- ANTH:3295 Field Research in Archaeology (or equivalent experience) 3 s.h.
- ANTH:3305 Human Osteology 3 s.h.
- ANTH:4620 Approaches to Geoarchaeology 3 s.h.

Doctor of Philosophy
The Doctor of Philosophy program in anthropology requires a minimum of 72 s.h. of graduate credit. The Ph.D. balances the general anthropological competence obtained at the M.A. level with professional specialization and competence for independent research and teaching in one of four subfields: sociocultural anthropology, linguistic anthropology, archaeology, and biological anthropology.

Ph.D. students also may elect to pursue a focus in feminist anthropology or paleoanthropology; see “Graduate Focus Areas” below.

REQUIRED COURSE WORK
Students may count a maximum of 18 s.h. earned in non-anthropology courses toward the minimum of 72 s.h. required for the Ph.D., including the maximum of 9 s.h. that may be counted toward the master’s degree. They may count a maximum of 9 s.h. of independent study courses beyond the master’s degree toward the Ph.D.

All doctoral students are required to take ANTH:5110 Anthropological Data Analysis or another statistics course within the first three years of graduate study, preferably during the M.A. program (first two years). They should also complete ANTH:5005 Responsible Conduct of Research in Anthropology during their third year, if they have not already done so.

All doctoral candidates must demonstrate reading and/ or speaking knowledge of one foreign language before beginning dissertation research.

Students must take at least one theory course beyond the course they took to fulfill the master’s degree
requirements in their specialization subfield. This course should be chosen from one of the following lists.

Sociocultural Anthropology

ANTH:5101 Seminar Sociocultural Anthropology 3 s.h.
ANTH:6107 Seminar: Ritual and Performance 3 s.h.
ANTH:6410 Seminar: Semiotics 3 s.h.

Most graduate seminars offered in the feminist anthropology focus area also may be used to fulfill this requirement (see "Feminist Anthropology Focus" below).

Linguistic Anthropology

ANTH:5401 Seminar: Linguistic Anthropology 3 s.h.
ANTH:6410 Seminar: Semiotics 3 s.h.
ANTH:6415 Seminar: Language, Gender, and Sexuality 3 s.h.

Archaeology

ANTH:3206 Seminar: Taphonomy 3 s.h.
ANTH:3237 Politics of the Archaeological Past 3 s.h.
ANTH:5201 Seminar: Archaeological Theory and Method 3 s.h.
ANTH:6205 Hunter-Gatherer Ethnoarchaeology 3 s.h.
ANTH:6230 Seminar: Zooarchaeology 3 s.h.

Biological Anthropology

ANTH:3308 Human Variation 3 s.h.
ANTH:3310 Primate Behavior: Sex Lives of Apes and Monkeys 3 s.h.
ANTH:3322 Primate Evolutionary Biology 3 s.h.
ANTH:3325 Human Evolutionary Genetics 3 s.h.
ANTH:3330 Human Evolution in Africa and Eurasia 3 s.h.
ANTH:4315 Human Evolutionary Anatomy 3 s.h.
ANTH:5301 Seminar: Biological Anthropology 3 s.h.
ANTH:6505 Seminar: Paleoanthropology 3 s.h.

PH.D. COMPREHENSIVE PROCESS

The comprehensive process consists of preparing and defending a research prospectus and writing comprehensive essays. According to individual needs and in consultation with his or her committee, each student selects the order of completing these two tasks. Successful completion of both tasks advances the student to Ph.D. candidacy.

To remain in good academic standing, students must complete the comprehensive process by the end of their third year in the program. Students who do not adhere to this timeline are placed on departmental probation.

Working closely with his or her committee, each student prepares a formal dissertation prospectus and defends that prospectus before the Ph.D. committee. The defense is open to students and faculty who wish to attend. A copy of the student's dissertation prospectus must be made available in the department office one week prior to the defense.

Each student must write two comprehensive essays, which must be of publishable quality. One essay must concern the student's geographical area of specialization; the other must deal with his or her primary topical area. In some fields (e.g., biological anthropology), a geographical area may not be relevant and the student focuses on two topical areas. The essays are responses to questions posed by the committee in consultation with the student.

Comprehensive essays should demonstrate analysis, evaluation, synthesis, and control of a body of information (knowledge and comprehension). They should critique a major problem or debate (application and analysis), and they should develop a position on an issue and provide an explanation or theoretical justification for the position (evaluation and synthesis).

Doctoral students who have completed the comprehensive examination process are encouraged to enroll in ANTH:7501 Dissertation Writing Seminar to enhance timely progress on their dissertations.

DISSERTATION

All Ph.D. candidates are required to carry out original anthropological research. Students typically conduct dissertation research after defending their research prospectus and writing comprehensive essays. Dissertations usually are based on ethnographic fieldwork, archaeological excavations, or laboratory analysis. Some are based on data from archival collections, laboratory analysis, or other source materials.

Graduate Focus Areas

In addition to their required course work in the four Ph.D. subfields, students may complete a focus area in feminist anthropology or paleoanthropology. Each focus area reflects broad issues bridging subfields in and outside of anthropology.

Completion of a focus area indicates substantial expertise. It is recognized as a department credential and may be added to a student's curriculum vitae.

FEMINIST ANTHROPOLOGY FOCUS

The feminist anthropology focus offers broad training in a growing specialization area that enhances and draws from other theoretical approaches in anthropology. Graduate students in anthropology and other disciplines may explore particular aspects of the field by taking feminist anthropology courses.

Course work in the focus area emphasizes feminist perspectives, theories, methods, and analytic techniques in anthropology. It improves students' academic job prospects in anthropology and other fields, especially women's studies and gender studies. It also helps students prepare for careers in applied or public anthropology.

Feminist anthropology students take 15 s.h. of course work in the focus area in addition to their regular core requirements. The 15 s.h. should be divided between graduate seminars and elective courses as noted below.

Focus area courses also may fulfill requirements for graduate electives in anthropology.

The following list of approved courses is subject to change; contact the Department of Anthropology for updates. Students may petition to count other courses in anthropology or other disciplines toward the focus area, if the courses or the students' work in them includes significant relevant content. Petitions are reviewed by the feminist anthropology faculty.

Graduate Seminars
Students complete at least two of these (minimum of 6 s.h.) and may count additional graduate seminar courses as elective credit.

**Electives**

- **ANTH:5120 Reading Transnational Feminist Theory** 3 s.h.
- **ANTH:6125 Seminar: Feminist Ethnography** 3 s.h.
- **ANTH:6310 Anthropology of Science, Technology, and Gender** 3 s.h.
- **ANTH:6415 Seminar: Language, Gender, and Sexuality** 3 s.h.

**PALEOANTHROPOLOGY FOCUS**

The paleoanthropology focus offers broad training that combines archaeology and biological anthropology, two traditional subfields of anthropology important in understanding the biocultural factors that have been critical in human evolution. The focus area combines course work in both biological and archaeological anthropology, complementing the specialized training that students from either subfield receive in their own specialization. Paleoanthropology courses emphasize integration of biological and cultural factors in the evolution of hominin species up to and including modern humans. They encompass primate and human evolutionary anatomy, technology and subsistence in Paleolithic archaeology, and modern human hunter-gatherers.

Paleoanthropology students take 15 s.h. of course work in the focus area in addition to their regular core requirements. The 15 s.h. should be divided between graduate seminars and elective courses as noted below.

Students may choose core seminars to fulfill requirements for both the M.A. general course work and the paleoanthropology focus.

The following list of approved courses is subject to change; contact the Department of Anthropology for updates. Students may petition to count other courses in anthropology or other disciplines toward the focus area, if the courses or the students' work in them includes significant relevant content. Petitions are reviewed by the paleoanthropology faculty.

**Graduate Seminars**

All of these (9 s.h.):

- **ANTH:5201 Seminar: Archaeological Theory and Method** 3 s.h.
- **ANTH:5301 Seminar: Biological Anthropology** 3 s.h.
- **ANTH:6505 Seminar: Paleanthropology** 3 s.h.

**Electives**

At least two of these (6 s.h. minimum):

- **ANTH:3260 Pleistocene Peopling of the Americas** 3 s.h.
- **ANTH:3305 Human Osteology** 3 s.h.
- **ANTH:3322 Primate Evolutionary Biology** 3 s.h.
- **ANTH:3325 Human Evolutionary Genetics** 3 s.h.
- **ANTH:3330 Human Evolution in Africa and Eurasia** 3 s.h.
- **ANTH:4315 Human Evolutionary Anatomy** 3 s.h.
- **ANTH:6205 Hunter-Gatherer Ethnoarcheology** 3 s.h.
- **ANTH:6230 Seminar: Zooarchaeology** 3 s.h.

**Admission**

Applicants for admission to the graduate program in anthropology are considered regardless of their previous field of training. Students without previous training in anthropology are expected to perform additional work as necessary to achieve competence expected for their degree objective.

Students normally are admitted under the assumption that they intend to pursue the Ph.D. degree, although the department does admit students seeking a terminal M.A. Students without an M.A. in anthropology devote the first two years fulfilling the M.A. requirements. After those requirements are completed, the student's committee may award the M.A. with admittance to the Ph.D. program.

Students with an M.A. in anthropology from another institution may proceed directly into a Ph.D. program organized around their special research interests. If they lack any of the requirements of the graduate program at the University of Iowa, they are informed of those requirements when admitted. Acceptance of credit hours from other institutions will follow UI regulations.

Applicants for admission to the graduate program must meet the admission requirements of the Graduate College; see the Manual of Rules and Regulations of the Graduate College.

Anthropology graduate program applicants are required to upload the following documentation to the University of Iowa Graduate Admissions online application:

- official academic records/transcripts;
- a brief statement of interest or intent regarding why graduate study in the Department of Anthropology is desired;
- three letters of recommendation;
- a writing sample (preferably a research paper);
- a copy of the student's master's thesis (if applying directly to the Ph.D. program);
- an application for graduate awards; and
- official Graduate Record Examination (GRE) General Test scores from the Educational Testing Service (University of Iowa institution code 6681).

International students must send their official Test of English as a Foreign Language (TOEFL) scores from the Educational Testing Service (University of Iowa institution code 6681). Once recommended for admission, international students must send a financial statement.
Financial Support

Financial assistance, usually in the form of teaching and research assistantships, may be offered to doctoral and potential doctoral students in good standing for up to four years. Students making satisfactory and timely progress through the graduate program are in good standing. Eligibility for financial aid is reduced after two years in the M.A. program, after two years in the Ph.D. program, or after one year of postdoctoral fieldwork or research enrollment. The amount and types of aid depend on departmental needs.

Students are notified in writing of a provisional financial award before the semester or summer session for which the award has been granted. Although awards are made before the end of the previous semester, each award is contingent upon satisfactory completion of that semester’s work by the awardee.

Archaeological Field Research

Under the direction of University archaeologists, students acquire skills in data recovery and interpretive techniques. Opportunities are available for students to participate in archaeological field research in France, the Netherlands, Portugal, Sicily, the U.S. Southwest, or at various sites in the U.S. Midwest. Occasional fieldwork in East and Southeast Asia is available to graduate students in the paleoanthropology research program.

Resources, Facilities

The department has access to the Iowa Archaeological Collections through the Office of the State Archaeologist and maintains its own archaeological collections (midwestern prehistoric and historical and comparative faunal material).

The department maintains a documented human osteology teaching collection amassed by the University of Iowa Carver College of Medicine and the Department of Anatomy and Cell Biology, and it holds a substantial documented human osteology research collection originally from Stanford University’s medical school that is maintained jointly with the Office of the State Archaeologist.

Individual faculty members maintain field laboratories and conduct research outside the United States, maintaining ties with research institutions in foreign countries, including the Laboratoire d’Ethnologie Préhistorique at Pincevent, France; the Centre de Recherches Archéologiques at Verberie, France; Gobabeb Research and Training Center, Namibia; the National Museum of Ethnology, Japan; the Institute of Technology Bandung (ITB), Indonesia; the Gemeente Nijmegen, Bureau Archeologie, Nijmegen, the Netherlands; and the Deutsches Archäologisches Institut of Madrid, Spain.

The department also has well-equipped laboratories for the study of archaeology, biological anthropology, computational genetics, evolutionary anthropology, a state-of-the-art multimedia linguistic anthropology laboratory, and a GIS/quantitative analysis laboratory.

The University is a charter member of the Human Relations Area Files (HRAF), an extensively annotated set of source materials on the peoples of the world—their environments, behavioral patterns, social lives, and cultures. Through HRAF and other library resources, anthropology students have access to source materials on more than 400 different cultures.

The University's exchange programs for Iowa students provide opportunities and some scholarships for study abroad.

Faculty

Members of the anthropology faculty have studied and lived in Africa, Asia, the Caribbean, Europe, Mexico and Central America, Pacific Islands, South America, and the United States. Recent field research has been conducted in Belgium, Brazil, Cameroon, China, Czech Republic, Ecuador, Fiji, France, Greece, Honduras, India, Indonesia, Italy, Japan, Mexico, Myanmar (formerly Burma), Namibia, the Netherlands, New Zealand, Peru, Philippines, Portugal, Russia, the Gambia, Vietnam, and the United States.

Current faculty interests include patterns of political and economic development of emerging nations; the trade in Mexican folk art, material culture, human rights; indigenous movements; visual culture and indigenous media; gender and the cultural politics surrounding sobriety in native North America; the gendered social consequences of sexual health treatment and research in Mexico; lesbian and gay families in the United States; the cultural production of scientific knowledge about racial/ethnic infant mortality disparities in U.S. public health; power, memory, and social inequality in ancient Iberia; language and gender; expressive culture and performance in the Brazilian Amazon; language and social justice; colonial linguistics, cultural politics of language, religion, and ethnicity; spiritual tourism in India; community and conflict, ritualization, localized religion, and environmentalism in Japan and the Amazon region; ethnic minorities in Japan; paleoanthropological investigations of Pleistocene karst caves in China and northern Vietnam; geological and paleoanthropological field surveys of the Plio-Pleistocene Sangiran Dome in Java; Neanderthal craniofacial form, function, and evolutionary history; anatomical modernity and the origins of modern humans; historical archaeology of Iowa; primate evolutionary history; faunal and spatial analyses from Paleolithic sites in France, Middle and Later Stone Age adaptations in Namibia; regional interaction and migration in late-prehistoric North America; peopling of the Americas; human impacts on the environment in North America; and Late Woodland rockshelter occupation in Iowa.

Courses

General Anthropology, Lower-Level Undergraduate

ANTH:1000 First-Year Seminar 1 s.h.
Small discussion class taught by a faculty member; topics chosen by instructor; may include outside activities (e.g., films, lectures, performances, readings, visits to research facilities). Requirements: first- or second-semester standing.

ANTH:1001 Issues in Anthropology 3 s.h.
In-depth exploration of methodological and theoretical issues in contemporary anthropology; emphasis on critical reading of primary texts.
ANTH:1003 Anthropology of Violence 3 s.h.
Sources and manifestations of violence; violence in varied contexts—war, genocide, colonialism, state violence, terrorism, domestic violence; anthropological perspective considering structural, economic, and symbolic violence.

ANTH:1005 The Evolution of Human Sex 3 s.h.
How evolution has shaped our sexual behavior; patterns of mate choice, parental behavior, social organization, cooperation, and conflict as responses to selection pressure; sexual selection, reproductive strategies, mate choice, sex roles and practices.

ANTH:1006 Anthropology, Science Fiction, and Fantasy 3 s.h.
Connections between anthropology and science fiction and fantasy; science fiction and fantasy films and literature surveyed and examined in light of scholarly essays on anthropological concepts such as human evolution, race, gender, the anthropological other.

ANTH:1007 The Anthropology of Virtual Worlds 3 s.h.
How virtual reality intertwines with social existence; anthropological exploration of virtual worlds, from checking e-mail to setting up bar crawls on Facebook; forms of virtual identity, how virtual life affects language.

ANTH:1008 Anthropology of Immigration 3 s.h.
Anthropological study of movements of people, goods, ideas around the world, drawing upon recent theory and ethnographic examples; topics include citizenship, family/parenting, gender, labor, economy, religion.

ANTH:1009 Anthropology of Childhood: The Production of Human Beings in the Contemporary World 3 s.h.
Examination of biological, social, historic, economic, and political aspects of childhood in the contemporary world from an anthropological perspective. Recommendations: introductory anthropology course.

ANTH:1040 Language Rights 3 s.h.
Language minorities and linguistic human rights in the United States and worldwide; language and identity, culture, power; case studies of language rights deprivation. GE: International and Global Issues. Same as LING:1040.

ANTH:1046 People and the Environment: Technology, Culture, and Social Justice 3 s.h.
How resources, commodities, people, and ideas cross borders; examination of globalization through issues of technology, social justice, environment; perspectives from anthropology, gender studies, geography, energy science, and development. GE: International and Global Issues. Same as GWSS:1046, GEOG:1046.

ANTH:1061 Origins of Life in the Universe (Part 2) 4 s.h.
Fundamental questions (What is the nature of life? What is evolution and how has life evolved on Earth? What are our human origins? Are there other habitable planets in the universe?) that revolve around understanding origins from different perspectives (astronomy, physics, geoscience, biology, chemistry, anthropology); students work with faculty from several departments to investigate these questions; inquiry-based activities build success in critical thinking, teamwork, and effective written and oral communication; second of a two-part sequence. GE: Natural Sciences with Lab. Same as ASTR:1061, BIOL:1061, EES:1061.

ANTH:1101 Cultural Anthropology 3 s.h.
Comparative study of culture, social organization. GE: Social Sciences; Values, Society, and Diversity. Same as IS:1101.

ANTH:1201 Introduction to Prehistory 3 s.h.
Data, theories of evolution of human cultures from end of Pleistocene to emergence of complex societies; emphasis on prehistoric cultural information from world areas from which relatively complete sequences are available. GE: Historical Perspectives.

ANTH:1301 Human Origins 3 s.h.
Processes, products of human evolution from perspectives of heredity and genetics, evolutionary theory, human biological characteristics, fossil record, archeological evidence, biocultural behaviors. GE: Natural Sciences without Lab.

ANTH:1305 Forensic Anthropology and CSI 3 s.h.
Role and range of techniques used in forensic anthropology; how analysis of skeletal and nonskeletal remains is used in crime scene investigation; case studies.

ANTH:1310 Human Genetics in the Twenty-First Century 3 s.h.
Organization and inheritance of human genes and genomes; genetic basis of simple and complex traits; genetic aspects of cancer; paleogenomics and tracing human migrations with DNA. GE: Natural Sciences without Lab. Same as BIOL:1311.

ANTH:1401 Language, Culture, and Communication 3 s.h.
Human language in context of animal communication; development, acquisition of language; biological base; language as a linguistic system in cultural social context. GE: Social Sciences.

ANTH:2009 Individual Study 1-3 s.h.
Readings in area or subdivision of anthropology in which student has had basic course work.

ANTH:2100 Anthropology and Contemporary World Problems 3 s.h.
Selected world problems from an anthropological perspective; current dilemmas and those faced by diverse human groups in recent times and distant past. GE: International and Global Issues; Social Sciences.

ANTH:2103 Introduction to Global Health Studies 3 s.h.
Global health as a study of the dynamic relationship between human health and social, biological, and environmental factors that drive the spread of disease; core areas of global health research that may include health inequalities, maternal and child health, infectious diseases, nutrition, environmental health, and health interventions. Same as GHS:2000.

ANTH:2164 Culture and Healing for Future Health Professionals
3 s.h.
Health professions increasingly focused on how to best provide health care to culturally diverse populations; introduction to key cultural and social influences on sickness and healing; worldwide examples. Same as GHS:2164.

ANTH:2320 Anthropological Perspectives on Human Infectious Disease: Origins and Evolution
3 s.h.
Origin and evolution of important infectious diseases in human history; biological evolution of infectious agents and biocultural responses to emerging infectious diseases; primary focus on viruses and bacteria; selected world problems from an anthropological perspective; current dilemmas and those faced by diverse human groups in recent times and distant past. Same as GHS:2320.

General Anthropology, Upper-Level Undergraduate and Graduate

ANTH:3001 Introduction to Museum Studies
3 s.h.
Overview of museum history, function, philosophy, collection, and curatorial practices; governance and funding issues; exhibition evaluation and audience studies; examples from Museum of Art, Museum of Natural History, Old Capitol Museum, and Medical Museum. GE: Social Sciences. Same as EDTL:3001, SIED:3001, MUSM:3001.

ANTH:3005 Special Topics in Anthropology
2-3 s.h.
Problems, concepts involved in comparing and contrasting behavior and ideas of different cultures.

ANTH:3010 Special Topics in Anthropology
2-3 s.h.
Problems, concepts involved in comparing and contrasting behavior and ideas of different cultures.

ANTH:3221 Beyond the Map: Introduction to Geographic Information Systems (GIS) in Anthropology
3 s.h.
Software environment for managing, visualizing, and analyzing spatial relationships in anthropology; mapmaking tool; spatial organization of material culture.

General Anthropology, Graduate

ANTH:5005 Responsible Conduct of Research in Anthropology
1 s.h.
Up-to-date documents in all subfields of anthropology regarding ethical research; CITI certification (which also qualifies as part of IRB application); key debates and current problems faced by anthropology in area of ethical and responsible research.

ANTH:5110 Anthropological Data Analysis
3 s.h.
Applied statistics for quantitative analysis of anthropological data, including field notes, library materials, and archaeological information; introduction to elementary statistics and computational methods; discussion of hypothesis testing and correlation; emphasis on proper use and interpretation of statistical methods in anthropological research.

ANTH:7109 Research Design and Proposal Writing
3 s.h.
Anthropological research design; preparation of proposals for fieldwork or laboratory analysis.

ANTH:7501 Dissertation Writing Seminar
2 s.h.
Organization of dissertation, setting and meeting deadlines, writing a chapter, and workshop drafts; seminar group work and consultation with advisors; completion and revision of at least one dissertation chapter; for anthropology graduate students who are beginning, or about to begin, their dissertation writing process. Requirements: anthropology graduate student who passed comprehensive exams (prospectus and essays).

Area Studies, Lower-Level Undergraduate

ANTH:2108 Gendering India
3 s.h.
Aspects of Indian culture, including nation, family, sexuality, work, and religion, through the lens of gender; Hindu India, differences in region, caste, and class. Same as GWSS:2108.

ANTH:2110 Latin American Economy and Society
3 s.h.
Development, present structure of Latin American economy and society; emphasis on rural regions in context of national development; focus on area as a whole. GE: International and Global Issues.

ANTH:2165 Native Peoples of North America
3 s.h.

ANTH:2175 Japanese Society and Culture
3 s.h.
Cultural anthropology of Japan, including historical tradition, religious ethos, social organization, human ecology, educational and political institutions; emphasis on how these aspects relate to and influence one another. GE: Values, Society, and Diversity. Same as JPNS:2175.
Area Studies, Upper-Level Undergraduate and Graduate

ANTH:2182 Africa: Health and Society  3 s.h.
Cultural, political, and economic diversity of African societies from precolonial period to present day; relationship between lived experiences of African people and understanding of their societies from afar; why Africa, more than any other region, is associated with warfare, hunger, and disease; idea of "Africa" in the world today; shared misunderstanding of life on continent contrasted with everyday lives of people who are not so different from ourselves.

Sociocultural Anthropology, Lower-Level Undergraduate

ANTH:2101 The Anthropology of Love  3 s.h.
The culturally diverse concept and practice of love as seen through cross-cultural and interdisciplinary texts on romantic and other forms of love.

ANTH:2102 Anthropology of Marriage and Family
Classic anthropological theories of kinship and marriage, including topics such as cousin marriage and incest; recent work on new reproductive technologies and transnational marriage. Same as GWSS:2102.

ANTH:2136 Urban Anthropology  3 s.h.
Cross-cultural approach to urban anthropology; urbanizing processes, migration and adaptation, aspects of class and ethnicity in urban settings, urban economic relations. GE: International and Global Issues; Social Sciences.

ANTH:2150 Transnational Feminism  3 s.h.
Introduction to feminist perspectives from U.S. and non-U.S. contexts; how geopolitics shapes understanding of familiar feminist issues (e.g., reproduction, cultural practices, sexualities, poverty); emphasis on global south regions. Same as GWSS:2150.

ANTH:2181 The Anthropology of Aging  3 s.h.
Comparative anthropological perspective on aging; ethnographies from diverse contexts used to examine intersections of kinship, religion, health, and medicine in later life. Same as ASP:2181, GHS:2181.

Sociocultural Anthropology, Upper-Level Undergraduate and Graduate

ANTH:3101 Anthropology of Sexuality  3 s.h.
Practice, definition, and regulation of sex in different cultures and times; use of anthropological tools, including cross-cultural comparison and social constructionist analysis; how social and historical forces shape sex; how a range of topics relate to sexuality, including science, love, work, globalization, ethnicity, health, aging, pornography, and deviance; focus on ways that dynamics (i.e., class, race, gender norms) shape people's culturally- and historically-specific ways of having and thinking about sex. Same as GWSS:3101.

ANTH:3102 Medical Anthropology  3 s.h.
Major theoretical, methodological approaches; international health and development; biomedicine as a cultural system; ethnomedicine; anthropology and AIDS, human reproduction, epidemiology, psychiatry. Prerequisites: ANTH:1101 or ANTH:2100. Same as GHS:3102, CBH:3102.

ANTH:3103 Environment and Culture  3 s.h.
Individual and group responses to scarcities of natural resources such as land, water, food. Requirements: ANTH:1101 or ANTH:2100 or graduate standing.
ANTH:3107 Literature and Anthropology 3 s.h.
Topics vary. Same as ENGL:3107, CL:3107.

ANTH:3109 Psychological Anthropology 3 s.h.
Cultural diversity in constructions of self, mind, and emotion; religious experience, altered states of consciousness, behavioral disorders. Prerequisites: ANTH:1101.

ANTH:3110 Health of Indigenous Peoples 3 s.h.
Health problems and services for indigenous populations worldwide, from perspective of Fourth World postcolonial politics. Prerequisites: ANTH:1101. Same as AINS:3110, GHS:3110.

ANTH:3112 Environmentalisms 3 s.h.
Alternative ways of conceptualizing the environment drawn from the ethnographic record worldwide; culturally constructed images of nature and their expression through daily activity and communicative media; inspiration for environmental activism; why such movements emerge, techniques they employ, factors that contribute to their success or failure. Prerequisites: ANTH:1101.

ANTH:3113 Religion and Healing 3 s.h.

ANTH:3114 Anthropology of Religion 3 s.h.
Approaches; religious roles; shamanism, witchcraft, curing; mythology; place of religion in social and cultural change. Same as RELS:3714.

ANTH:3116 Fictionalized Ethnography in Literature and Film 3 s.h.
Evaluation of fictional narratives as sources of ethnographic information, instructive and revealing depictions of other societies and cultures; culturally specific themes through storylines, creative works as cultural artifacts in presentations of differing perspectives and concerns from the authors' personal experiences.

ANTH:3117 Using Ethnographic Methods 3 s.h.
Ethnography, holistic, qualitative research in cultural context for anthropological and related research and careers involving interpersonal interaction; multiple ethnographic methods and their rationales. Recommendations: desire to interact with others, and prior course work in fields that employ ethnographic or qualitative research (social sciences, social work, nursing, public health).

ANTH:3118 Politics of Reproduction 3 s.h.
Debates over women's reproductive experience, including its medicalization. Same as GWSS:3118.

ANTH:3123 Making a Living: Perspectives on Economic Anthropology 3 s.h.
How different cultures and societies have organized allocation of work and goods; critical reflection of ongoing integration of world's societies into global market system; how it has become commonplace in the U.S. to believe that unemployment and debt are natural, inevitable aspects of human social organization during contemporary era; different approaches to division of work and resources among various groups of people in other societies; different approaches to dividing up society or world resources based on existing socioeconomic models.

ANTH:3127 Anthropology of Death 3 s.h.
How anthropologists and archaeologists study death, dying, mortuary rituals, and notions of the afterlife in contemporary North America and in different places and times. Requirements: ANTH:1101 or ANTH:1201 or graduate standing.

ANTH:3130 Cultural Politics 3 s.h.
Cultural politics involved in cultural representation; varied forms of cultural performance and display; social and power relationships between producers, consumers, represented subjects. Prerequisites: ANTH:1101 or ANTH:2100.

ANTH:3131 Anthropology and Human Rights 3 s.h.
Complex history and evolving relationship of anthropology and international human rights discourses; concept deployment of culture and rights in human rights ideas, practice, discourse, and as a form of global law. Prerequisites: ANTH:1101 or ANTH:1201 or ANTH:1301 or ANTH:1401.

ANTH:3133 Anthropology of Race 3 s.h.
Anthropological perspectives on race: history of race in anthropology; social, cultural, and political dimensions of race; intersections with gender; biology of human diversity. Recommendations: introductory course in social sciences.

ANTH:3135 Key Debates in Sociocultural Anthropology 3 s.h.
Historical overview of sociocultural anthropological theories, exploration of key moments of critical reflections, and e-assessment of discipline; highly recommended for anthropology majors with sociocultural emphasis. Prerequisites: ANTH:1101 or ANTH:2100. Recommendations: anthropology major.

ANTH:3140 Feminist Anthropology 3 s.h.
Development and evolution of feminist critiques in cultural anthropology; readings from early studies by women ethnographers, classic writings that sought to give women cross-cultural visibility, recent experimental texts. Same as GWSS:3140.

ANTH:3141 Women, Health, and Healing 3 s.h.
Women's experience as recipients and providers of health care: intersection of race, class, cultural variation, and women's health; reproductive and nonreproductive health concerns. Same as GWSS:3141.

ANTH:3151 The Anthropology of the Beginnings and Ends of Life 3 s.h.
Examination of diverse understandings of birth and death, drawing on anthropological analysis of personhood, kinship, ritual, and medicine; how social inequality and new technologies shape human experience at life’s margins. Prerequisites: ANTH:1101 or ANTH:2100. Same as ASP:3151, GHS:3151.

ANTH:3152 Anthropology of Caregiving and Health 3 s.h.
Diverse understandings and practices of care around the world; focus on relationships between caregiving practices and health across the life course. Same as ASP:3152, GHS:3152.

ANTH:3160 Global Health Seminar 3 s.h.
Local and global dimensions of health and disease. Same as GHS:3720.

ANTH:3300 Mothers and Motherhood 3 s.h.
Treatment of motherhood; role of motherhood and devaluation of social status. Same as GWSS:3300.

ANTH:4130 Religion and Environmental Ethics 3 s.h.
How humans conceptualize the biophysical environment through religious beliefs and practices; how images of the environment influence people’s activities, how they are used by grassroots environmental movements. Requirements: junior or senior standing. Same as RELS:4730.

ANTH:4140 The Anthropology of Women’s Health 3 s.h.
How female gender intersects with culture, environment, and political economy to shape health and illness; reproductive health, violence, drug use, cancer; readings in anthropology, public health. Prerequisites: ANTH:1101. Same as CBH:5140, GWSS:4140, GHS:4140.

Sociocultural Anthropology, Graduate

ANTH:5101 Seminar Sociocultural Anthropology 3 s.h.
Social institutions in the world’s societies; problems in theory, method, interpretation. Requirements: graduate standing or undergraduate anthropology honors standing.

ANTH:5120 Reading Transnational Feminist Theory 3 s.h.
Issues in transnational feminist scholarship, including colonialism, globalization, the nation-state, religion, cultural traditions, and human rights, in global and U.S. domestic contexts; interdisciplinary readings with focus on anthropology, other social sciences. Same as GWSS:5120.

ANTH:5130 Food, Culture, and Social Theory 3 s.h.
Comparative and ethnographic approach to study of food and eating; intersections between social roles and meanings of food, political economies of food, and impact of food on bodies and well-being.

ANTH:6107 Seminar: Ritual and Performance 3 s.h.
Approaches to comparative study of ritual in religious and secular contexts.

ANTH:6115 Ethnographic Field Methods 3 s.h.
Basic data-gathering techniques for field research in sociocultural anthropology. Same as CBH:6115.

ANTH:6125 Seminar: Feminist Ethnography 3 s.h.
Feminist critiques of traditional ethnographies; informed by contemporary feminisms. Same as GWSS:6125.

ANTH:6141 Medical Anthropology and Social Theory 3 s.h.
How medical anthropology has both responded and contributed to key theoretical developments in recent decades, such as discourse/narrative analysis, practice theory, feminist theory, postcolonial theory, science and technology studies.

ANTH:6310 Anthropology of Science, Technology, and Gender 3 s.h.
Science and technology done in particular social and structural contexts; theoretical approaches for understanding cultures of science and social uses of technology; focus on gender-related aspects of real world cases. Recommendations: graduate standing in any discipline with interest in understanding cultural context of scientific practice. Same as GWSS:6310.

ANTH:6632 Crossing Borders Proseminar 3 s.h.

ANTH:6635 Crossing Borders Seminar 2-3 s.h.

Archaeology, Lower-Level Undergraduate

ANTH:2205 Archaeological Methods 3 s.h.
Current theoretical approaches, methods used to investigate the past; site formation processes, taphonomy, sampling and research design, typology and seriation, subsistence-settlement reconstruction, cultural evolution. Prerequisites: ANTH:1201.

ANTH:2216 Foodways and Cuisine in the Past 3 s.h.
Anthropological and archaeological perspective on cuisine; present-day links between food and culture; past cuisines viewed through written documents and archaeological data; histories of different foods.

ANTH:2220 Archaeology of Mesoamerica 3 s.h.
Archaeological data related to the evolution of civilization in Mesoamerica; sequence from hunter-gatherers to A.D. 1519; emphasis on Central Mexico, Maya area, Oaxaca.

ANTH:2261 Human Impacts on the Environment 3 s.h.
Long-term patterns of human-environment interactions surveyed through archaeological case studies; varied scales of human impacts, including animal extinction, habitat destruction, agricultural practices, urban growth, state-level societies. GE: International and Global Issues; Social Sciences.

ANTH:2290 Practicum in Archaeology arr.
Intensive, hands-on examination of a wide range of materials recently recovered from archaeological sites; pottery, lithics (stone tools and related items), plant remains, animal bones; for students with strong archaeological interests or archaeological field experience.

Archaeology, Upper-Level Undergraduate and Graduate

ANTH:3205 Prehistoric People of the Ice Age 3 s.h.
Hominid occupation of Old World during Pleistocene; hominid fossils, artifacts, settlement patterns, climatic reconstruction, evolutionary processes; survey and evaluation. Prerequisites: ANTH:1201.

ANTH:3206 Seminar: Taphonomy 3 s.h.
Taphonomy (study of fossil record in paleontology and archaeology); processes for accumulation, modification, and deposition of remains in prehistory; instruction by archaeologist and paleontologist. Requirements: graduate standing. Same as EES:3206.

ANTH:3207 Animal Bones in Archaeology 3 s.h.
Use of faunal material in interpretation of archaeological remains, including skeletal anatomy, identification, taphonomy, determination of age and sex, seasonality, quantification, sampling, breakage and cutmarks, interpretations; laboratory sessions. Prerequisites: ANTH:1201.

ANTH:3235 The Stuff of Lives: Archaeology of the Material World 3 s.h.
Ways that archaeologists and anthropologists have approached their studies of the material world and the relationship between material culture and economics, social structure, and symbolism. Prerequisites: ANTH:1101 or ANTH:1201.

ANTH:3237 Politics of the Archaeological Past 3 s.h.
How control over management of material remains of the ancient past, and representations of that past, intersect with the identity of diverse groups, including archaeologists, indigenous peoples, national governments, collectors, ethnic minorities and majorities, museum curators; struggles for control of the archaeological past at different scales (artifacts, skeletal remains, sites, imagery, narratives) and in different regions of the world. Same as MUSM:3237.

ANTH:3238 Archaeology of the Iberian Peninsula 3 s.h.
Introduction to archaeology of the Iberian Peninsula, from earliest human occupation through period of Romanization.

ANTH:3239 Tribes and Chiefdoms of Ancient Europe 3 s.h.
Archaeology of European societies between the Mesolithic and Iron Age; how ideas about Europe’s prehistoric past have been used for political purposes. Prerequisites: ANTH:1201.

ANTH:3240 Cultural Resources Management Archaeology: Practice and Practicalities 3 s.h.
Cultural Resources Management (CRM) archaeology as the largest sector of archaeological research in the United States in terms of employment, funding, and field- and lab-related activity; investigate the past, navigate the complexities of compliance requirements from federal, state, and local regulations concerning historic preservation; introduction to the legal, procedural, and practical foundations of CRM archaeology; prepare students for employment by acquisition of skills from project planning through dissemination of results. Prerequisites: ANTH:1201. Recommendations: completion of other anthropology, geography, history, or Native American studies courses.

ANTH:3241 Lithic Analysis in Archaeology 3 s.h.
Archaeological issues examined and addressed with lithic data; use of lithic data to study the past, specific techniques applied. Prerequisites: ANTH:1201.

ANTH:3242 Archaeology of the Middle East —Prehistory and Early History 3 s.h.
Overview of prehistoric and early historic archaeology of the Middle East; questions that underpin archaeological narrative for the region from its initial peopling through city-states and imperial formations. Recommendations: introduction to archaeology.

ANTH:3243 Midwestern Archaeology 3 s.h.
Comparison of cultural adaptations utilizing regional archaeological data to develop an understanding of Midwestern lifeways through time; how prehistoric peoples relate to their modern descendants in the Midwest. Recommendations: introduction to prehistory.

ANTH:3255 Introduction to Archaeological Ceramics 3 s.h.
Basic analytical techniques for archaeological ceramics, applied primarily to ceramics from midwestern and western North America; raw materials, manufacture, decoration and style, craft specialization, use, and discard. Prerequisites: ANTH:1201.

ANTH:3256 Household Archaeology and Anthropology 3 s.h.
Structure and activities of households today and in the past; what households tell us about the larger culture; how intangible aspects of households are studied through material remains. Prerequisites: ANTH:1101 or ANTH:1201 or ANTH:1301 or ANTH:1401 or ANTH:2100.

ANTH:3257 North American Archaeology 3 s.h.
Prehistoric cultural development north of Mexico from initial occupation to European contact and conquest; emphasis on dynamics of culture change. Same as AINS:3257.

ANTH:3258 Southwestern Archaeology 3 s.h.
Anthropological overview of prehistoric cultures of the American Southwest; emphasis on understanding archaeological arguments concerning major processes in the past. Same as AINS:3258.

ANTH:3260 Pleistocene Peopling of the Americas 3 s.h.
Major themes in earliest human settlement of the Americas, including human mobility, subsistence, technology, human impacts on the environment.

ANTH:3261 Our Life With Dogs: The Anthropological Study of Animals in Human Societies 3 s.h.
Intricate connections between dogs and our social, economic, political, and spiritual lives; human relationships with dogs that extend back at least 16,000 years; process of dog domestication; roles dogs play in human ideology and past economies; modern interactions with dogs.

ANTH:3265 Archaeology of the Great Plains 3 s.h.
Contrasting lifeways, diets, and technologies that humans used to survive on North America's Great Plains, from Ice Age hunter-gatherers to Euroamerican homesteaders.

ANTH:3275 The Archaeology of Ancient Egypt 3 s.h.
Introduction to the archaeology of ancient Egypt from predynastic times to Roman Egypt, including monumental architecture; patterns of everyday life; social, economic, and demographic considerations; history of archaeology in Egypt. Same as CLSA:3596.

ANTH:3276 Greek Archaeology and Ethnohistory 3 s.h.
Archaeology and ethnology of the Greek world, from end of Bronze Age to late Roman Empire; sociocultural processes that influence development and persistence of Greek civilization. Same as CLSA:3235.

ANTH:3277 Roman Archaeology 3 s.h.
Archaeology and ethnology of Roman civilization from Iron Age eighth-century occupation of the Palatine Hill to the end of the Roman empire in the West, A.D. 476. Prerequisites: ANTH:1201 or ANTH:1301. Same as CLSA:3240.

ANTH:3278 Archaeology of Ancient Cities 3 s.h.
Archaeological exploration of ancient world cities; physical plant, social institutions, regional context, cultural influence; major cities considered include Uruk, Luxor, Athens, Rome, Alexandria, Kyongju, Loyang, Teotihuacan, and Tenochtitlan. Requirements: ANTH:1201 or ANTH:2220 or ANTH:4205 or another prehistory course.

ANTH:3282 Animals, Culture, and Food 3 s.h.
The varied roles animals have played in human society through time; impact of humans on animal populations, ethical aspects of animals' roles in modern societies.

ANTH:3283 Cultures in Collision 3 s.h.
Survey of archaeological evidence for differences in human interactions between two or more cultural groups; issues such as ethnicity, war, economy, repression, multiethnic communities.

ANTH:3290 Special Topics in Archaeology arr.

ANTH:3295 Field Research in Archaeology 3 s.h.
Beginning skills in site surveying and excavation, lab work, record keeping at nearby prehistoric sites.

ANTH:4205 Rise of Ancient Civilization 3 s.h.
Cultural evolution in Old World, New World; emphasis on developments from pre-agricultural societies to appearance of urban civilizations; focus on Mesoamerica, Central Andes, Near East, Egypt, Indus Valley, China.

ANTH:4620 Approaches to Geoarchaeology 3 s.h.
Geoarchaeology as multidisciplinary contextual framework for human paleoecology; natural processes that create the archaeological record, approaches to reconstructing landscapes of the past as a context for archaeological deposits; weekend field trip. Prerequisites: EES:3360 or EES:4720 or ANTH:3205 or ANTH:4205. Same as EES:4620.

Archaeology, Graduate

ANTH:5201 Seminar: Archaeological Theory and Method 3 s.h.
Development, current status of theory, method in Americanist archaeology. Requirements: graduate standing or undergraduate anthropology honors standing.

ANTH:6205 Hunter-Gatherer Ethnoarchaeology 3 s.h.
Variability in adaptations of hunter-gatherers on a global scale; emphasis on subsistence, mobility, social organization; archaeological record of prehistoric hunter-gatherers interpreted through study of modern societies. Requirements: graduate standing.
ANTH:6230 Seminar: Zooarchaeology 3 s.h.
Interpretation of faunal material in archaeology; intensive survey of classic and recent literature on taphonomy, skeletal anatomy, population parameters, seasonality, quantification and sampling, butchering patterns, ethnoarchaeology, social and economic inferences. Prerequisites: ANTH:3207.

Biological Anthropology, Lower-Level Undergraduate

ANTH:2390 Laboratory Methods in Biological Anthropology
Specimen preparation, cataloging, moulding and casting, photography, computer analyses, library research.

Biological Anthropology, Upper-Level Undergraduate and Graduate

ANTH:3305 Human Osteology 3 s.h.
The human skeletal system; normal and pathologic variation; skeletal measurement and analysis with application to paleoanthropology, forensic, and archaeological investigations.

ANTH:3306 The Neanderthal Enigma 3 s.h.
Survey of Neanderthals as the most widely known, yet enigmatic, fossil human lineage; history of discoveries; current interpretations of Neanderthal's origins, anatomy and behavior, relationship to today's people, extinction.

ANTH:3307 Modern Human Origins 3 s.h.
Current data and theories regarding the emergence of Homo sapiens; how human anatomical modernity is defined and recognized in the fossil record; competing models for modern humans' emergence—multiregional evolution, out of Africa, the assimilation model; interpretation of recent developments and discoveries in the human fossil record; contemporary contributions from genetics, developmental biology, evolutionary ecology, paleodemography.

ANTH:3308 Human Variation 3 s.h.
Range and patterning of biological diversity in contemporary human populations; past and present attempts to organize and explain human genetic, morphological variation in light of recent data, theory.

ANTH:3310 Primate Behavior: Sex Lives of Apes and Monkeys 3 s.h.
Behavior, mating systems, sexual selection, and systematics of living nonhuman primates; emphasis on sexual strategies and interactions of free-ranging primates as related to ecological constraints and conservation policies.

ANTH:3322 Primate Evolutionary Biology 3 s.h.
Principles of evolution, systematics, and biogeography; application to origin and diversification of primate order; emphasis on fossil evidence and biomolecular studies for phylogenetic interpretations.

ANTH:3325 Human Evolutionary Genetics 3 s.h.
Application of molecular methods and theory to biological anthropology; how recent advances in genetics have provided insight into the evolution of human and nonhuman primates. Prerequisites: ANTH:1301.

ANTH:3326 Infectious Disease and Human Evolution 3 s.h.
Infectious disease as a central and important role in evolution of modern humans; impact of important infectious diseases on human history through primary literature. Recommendations: evolutionary theory background or interest. Same as GHS:3326.

ANTH:3327 Genes, Culture, and Human Diversity 3 s.h.
New perspectives in evolutionary theory on the origin of human biology and cultural diversity; principles borrowed from evolutionary thinking that provide insight into how cultures change, basis of human institutions, and gene-culture coevolution.

ANTH:3328 Molecular Genetics of Human Disease 3 s.h.
Disease as an unfortunate, but unavoidable, aspect of human condition; genetic nature of disease that reveals origins of inherited disease; variation of disease across the globe. Recommendations: biology or genetics course to provide substantial background knowledge.

ANTH:3330 Human Evolution in Africa and Eurasia 3 s.h.
Examination of human evolutionary past from early fossil apes to origin and diversification of hominin family and appearance of modern humans; emphasis on human evolution in Africa and dispersal through Eurasia.

ANTH:4315 Human Evolutionary Anatomy 3 s.h.
Interpretation of skeletal remains as the basis for reconstructing forms, adaptations, lifestyles of prehistoric humans; body size, musculature, stance, activity patterns, brain size, and sexual dimorphism. Prerequisites: ANTH:3305.

Biological Anthropology, Graduate

ANTH:5301 Seminar: Biological Anthropology 3 s.h.
Physical anthropology, including heredity and genetics, evolutionary theory, human biological characteristics, primate and human fossil record, primate behavior and ecology, human adaptations. Requirements: graduate standing or undergraduate anthropology honors standing.

ANTH:6505 Seminar: Paleoanthropology 3 s.h.
Current understandings of biocultural processes and events underlying Pleistocene human evolution; cross-disciplinary approach combining human paleontology and Paleolithic archaeology. Requirements: graduate standing or undergraduate honors standing or advanced undergraduate standing.
Linguistic Anthropology, Upper-Level Undergraduate and Graduate

ANTH:3415 Multimedia Ethnography 3 s.h.
Skills and tools for using multimedia technologies in ethnographic research and presentations; students conduct research projects using audio and video recording equipment and develop media-based presentations; ethnographic emphasis on contextually situated social interaction. Prerequisites: ANTH:1101 or ANTH:2100.

Linguistic Anthropology, Graduate

ANTH:5401 Seminar: Linguistic Anthropology 3 s.h.
Fundamental concepts and methods employed in the anthropological study of language; principal areas of current research. Requirements: graduate standing or undergraduate anthropology honors standing.

ANTH:6410 Seminar: Semiotics 3 s.h.
Piercian semiotic and Saussurean semiological conceptual frameworks; focus on anthropological, linguistic issues.

ANTH:6415 Seminar: Language, Gender, and Sexuality 3 s.h.
Role of language and discourse in cultural constructions of gender identities and relations, including domination and subordination; theoretical perspective and methodological approaches that have shaped thought on the language/gender nexus. Same as GWSS:6415, LING:6415.

Individual Reading and Research, Upper-Level Undergraduate and Graduate

ANTH:3015 Independent Study arr.

ANTH:4995 Honors Research Seminar 2-4 s.h.
Preparation for writing honors thesis, including project conception and research, proposal writing, oral and written presentations of student research. Corequisites: ANTH:4996, if not taken as a prerequisite. Requirements: honors standing in anthropology.

ANTH:4996 Honors Research 2-4 s.h.
Project chosen in consultation with honors advisor.

Individual Reading and Research, Graduate

ANTH:6005 Independent Study: Anthropology arr.

ANTH:6010 Research: Anthropology arr.

ANTH:6015 Thesis arr.
Art and Art History

**Director**
- John Beldon Scott

**Undergraduate majors:** art (B.A., B.F.A.); art history (B.A.)

**Undergraduate minors:** art; art history

**Graduate degrees:** M.A. in art; M.F.A. in art; M.A. in art history; Ph.D. in art history

**Faculty:** http://www.art.uiowa.edu/people/faculty

**Web site:** http://www.art.uiowa.edu/

The School of Art and Art History provides a creative, multidisciplinary environment for students of the studio arts and the history of art. Established in 1936, the school is firmly grounded in the College of Liberal Arts and Sciences. It encourages interaction among its diverse faculty as well as collaboration with related disciplines across campus.

Iowa's art and art history graduates enjoy success as practicing professional artists, professors of art history, teachers, museum directors and curators, theater designers, commercial designers, and art administrators.

The University of Iowa is restoring and replacing School of Art and Art History facilities that were damaged or destroyed by Iowa River flooding during summer 2008. Art Building West has reopened and once again houses the school's main office. Visit the School of Art and Art History web site and ISIS for information about studio, office, and classroom sites.

**Studio Art**

The studio art program is based on the idea that the philosophical issues of society that are questioned and interpreted by artists are the basis for an artist's work. The diversity of concept and style among School of Art and Art History faculty members encourages students to seek and work toward a keen understanding of themselves as individuals capable of making their own personal statements as part of the philosophical continuum in art's history.

Studying the broad contexts in which art is made, understood, and used by society prepares studio art students to continue work in an academic setting as well as in museums, galleries, and a multiplicity of other venues. Graduate students are especially encouraged to examine the contexts of visual and verbal issues central to their own work and that of their contemporaries.

Undergraduate and graduate students select their major and minor studio art disciplines from ceramics, graphic design, three-dimensional (3-D) design, drawing, intermedia, jewelry and metal arts, painting, photography, printmaking, and sculpture.

**Art History**

Art history, a broad intellectual discipline, is central to the humanities. Diverse approaches characterize the school's art history faculty, who have interdisciplinary ties within and beyond the University. Their primary mission is to help students develop skills for exploring issues and problems central to the history of art as a whole as well as to its specialized areas. Because the major in art history stresses the development of critical visual thinking and analytical writing, it prepares students for graduate work in art history and for other professional fields as well.

**Undergraduate Programs of Study**

- Major in art (Bachelor of Arts, Bachelor of Fine Arts)
- Major in art history (Bachelor of Arts)
- Minor in art
- Minor in art history

Students interested in teaching art in elementary and/or secondary schools may apply to the Art Education Program; see "B.A. and B.F.A. with Teacher Licensure" below.

Students majoring in art begin their study as Bachelor of Arts students and may apply for admission to the B.F.A. program in a process called "clearance," usually during their third year; see "Bachelor of Arts: Art" and "Bachelor of Fine Arts: Art" below.

**Bachelor of Arts: Art**

The Bachelor of Arts with a major in art requires a minimum of 120 s.h., including at least 39 s.h. of work for the major. Students must maintain a g.p.a. of at least 2.00 in all courses for the major and in all UI courses for the major. They also must complete the College of Liberal Arts and Sciences General Education Program (p. 313).

The major in art for the B.A. provides a foundation in art history as well as an understanding of the formal traditions and contemporary practices in studio art. Students take courses in the school's studio art programs, including ceramics, graphic design, three-dimensional (3-D) design, drawing, intermedia, jewelry and metal arts, painting, photography, printmaking, and sculpture.

Bachelor of Arts students majoring in art may count a maximum of 56 s.h. earned in art and art history courses toward the degree; they must earn at least 64 s.h. of credit in courses outside the School of Art and Art History in order to graduate.

B.A. students with a double major in the school (e.g., a major in art and a major in art history) or a major and a minor in the school (e.g., a major in art and a minor in art history) must earn at least 56 s.h. of credit in courses outside the School of Art and Art History in order to graduate.

Students majoring in art begin their study in the Bachelor of Arts program. Those interested in pursuing concentrated work in a specific studio art discipline may apply for admission to the Bachelor of Fine Arts program through a process called "clearance," in which the faculty evaluates the student's readiness for B.F.A. study. Clearance usually takes place during the third year, but it may be conducted earlier or later, depending on the student's readiness.

The major in art for the Bachelor of Arts requires the following course work. Not all courses are offered every semester, including required courses. When planning their course work, students should consult their advisors and ISIS to determine when specific courses will be offered.

**ART HISTORY**

Two of these:
ARTh:1040 Arts of Africa 3 s.h.
ARTh:1050 From Cave Paintings to Cathedrals: Survey of Western Art I 3 s.h.
ARTh:1060 From Mona Lisa to Modernism: Survey of Western Art II 3 s.h.
ARTh:1070 Asian Art and Culture 3 s.h.

Additional art history courses:

Two art history courses not in the list above, excluding ARTh:1000, ARTh:1080, and ARTh:2975 6 s.h.

FOUNDATIONAL STUDIO ART
Both of these, taken before the 3-D and 2-D studio art courses:

ARTS:1510 Basic Drawing 3 s.h.
ARTS:1520 Design Fundamentals 3 s.h.

STUDIO ART 3-D COURSES
Two of these:

CERM:2010 Exploring Forms in Clay I 3 s.h.
INTM:2710 Introduction to Intermedia 3 s.h.
MTLS:2910 Introduction to Jewelry and Metal Arts 3 s.h.
SCLP:2810 Undergraduate Sculpture I 3 s.h.
TDSN:2210 Problems in 3-D Design 3 s.h.

STUDIO ART 2-D COURSES
Two of these:

ANIM:2125 Introduction to Animation 3 s.h.
DRAW:2310 Life Drawing I 3 s.h.
DSGN:2110 Graphic Design I 3 s.h.
PHTO:2510 Beginning Digital Photography 3 s.h.
PNTG:2410 Painting I 3 s.h.
PRNT:2610 Introduction to Printmaking 3 s.h.

UPPER-LEVEL STUDIO ART COURSES
Students must take two upper-level studio art courses. They may take both upper-level courses in the same studio art discipline or one upper-level course in each of two disciplines.


REQUIRED ELECTIVES
School of Art and Art History elective courses must bring the total credit for the major in art to a minimum of 39 s.h.

Transfer Students
Transfer students should contact the undergraduate academic advisors for information about transfer portfolio review and specific course work that satisfies the requirements of the art major for the Bachelor of Arts.

Students may count a maximum of 12 s.h. of approved transfer credit toward the B.A. major in art.

Study Abroad
Students who wish to study abroad must meet with the undergraduate advisor before they depart in order to confirm approval of the courses they plan to take.

Students who take studio art courses abroad must bring their artwork back to campus and must present it in a portfolio review, which determines whether the work satisfies a requirement for their major. The portfolio review is not required if the study abroad course was taught by a School of Art and Art History faculty member who gave the student a grade for the course.

Students who plan to take art history courses abroad must present the course syllabus to their advisor well in advance of their departure. The head of the art history program determines whether the study abroad course is equivalent to a course required for the major; if it is, the student is credited with fulfilling the requirement once he or she completes the course with a passing grade.

Bachelor of Fine Arts: Art
The Bachelor of Fine Arts with a major in art requires a minimum of 120 s.h., including 62 s.h. of work for the major. Students must maintain a g.p.a. of at least 2.00 in all courses for the major and in all UI courses for the major. They also must complete the College of Liberal Arts and Sciences General Education Program (p. 313).

The major in art for the B.F.A. provides a foundation in art history as well as an understanding of the formal traditions and contemporary practices in studio art. It also includes a concentration in studio art.

B.F.A. students select one studio art discipline, choosing from ceramics, graphic design, three-dimensional (3-D) design, drawing, intermedia, jewelry and metal arts, painting, photography, printmaking, and sculpture. They may not select bookbinding, calligraphy, or papermaking as their studio art discipline. Although students may choose only one B.F.A. discipline, they gain exposure to other studio areas through the B.F.A. program of study.

Bachelor of Fine Arts students majoring in art may count a maximum of 62 s.h. earned in art and art history courses toward the degree; they must earn at least 58 s.h. of credit in courses outside the School of Art and Art History in order to graduate.

Students majoring in art begin their study in the Bachelor of Arts program. They may apply to the Bachelor of Fine Arts program after consulting with the faculty in the studio discipline of their choice. Students are admitted to the B.F.A. program through a process called “clearance,” which is conducted once each semester; they must be admitted to the B.F.A. program at least one semester before they graduate. Students who wish to enter the B.F.A. program should consult the faculty in their major studio art discipline for information about the required portfolio review.

In order to sit for B.F.A. clearance, students must have completed:

the two studio art foundation courses ARTS:1510 and ARTS:1520:
one introductory course in the B.F.A. studio art discipline; and

two upper-level courses in the B.F.A. studio art discipline (students may be enrolled in the two upper-level courses when they sit for clearance).


B.F.A. students complete all requirements for the B.A. major in art plus additional studio work. They also must present a show of their work through ARTS:4195 B.F.A. Exhibition before they graduate.

The art major for the Bachelor of Fine Arts requires the following work.

**REQUIRED COURSES FOR THE BACHELOR OF ARTS**

All course work required for the B.A. with a major in art; see "Bachelor of Arts: Art" above

39 s.h.

**ADDITIONAL STUDIO ART FOR B.F.A. STUDENTS**

All of these:

- One introductory course and three upper-level courses in the student's studio art discipline
- One introductory course and one upper-level course in a second studio art discipline
- One introductory course and one upper-level course in a third studio art discipline

**EXHIBIT**

B.F.A. students must present a show of their work during the semester in which they graduate. Variations must be approved by the B.F.A. faculty advisor and academic advisors. The show must be advertised using flyers and other media. Students planning to graduate with honors in the art major may combine their honors project and their B.F.A. show. Students must meet with faculty and academic advisors to complete the required documentation before they present their show.

**Transfer Students**

Transfer students should contact the undergraduate academic advisors for information about transfer portfolio review and specific course work that satisfies the requirements of the art major for the Bachelor of Fine Arts. Students may count a maximum of 21 s.h. of approved transfer credit toward the B.F.A. major in art.

**Study Abroad**

Students who wish to study abroad must meet with the undergraduate advisor before they depart in order to confirm approval of the courses they plan to take.

Students who take studio art courses abroad must bring their artwork back to campus and present it in a portfolio review, which determines whether the work satisfies a requirement for their major. The portfolio review is not required if the study abroad course was taught by a School of Art and Art History faculty member who gave the student a grade for the course.

Students who plan to take art history courses abroad must present the course syllabus to their advisor well in advance of their departure. The head of the art history program determines whether the study abroad course is equivalent to a course required for the major; if it is, the student is credited with fulfilling the requirement once he or she completes the course with a passing grade.

**Bachelor of Arts: Art History**

The Bachelor of Arts with a major in art history requires a minimum of 120 s.h., including 45 s.h. of work for the major. Students must maintain a g.p.a. of at least 2.00 in all courses for the major and in all UI courses for the major. They also must complete the College of Liberal Arts and Sciences General Education Program.

Art history engages in problems of historical analysis and interpretation of culture. The major in art history provides students with a strong liberal arts background and prepares them for competitive placement in graduate schools across the country. As students progress through the major, they become familiar with historical relationships between art objects and society, learn techniques of formal analysis, study patterns of patronage, and absorb methods for interpreting the meaning of paintings, sculptures, and architecture. In the course of their studies, art history majors develop their research abilities and writing skills.

Bachelor of Arts students majoring in art history may count a maximum of 56 s.h. earned in art and art history courses toward the degree; they must earn at least 64 s.h. of credit in courses outside the School of Art and Art History in order to graduate.

B.A. students with a double major in the school (e.g., a major in art history and a major in art) or a major and a minor in the school (e.g., a major in art history and a minor in art) must earn at least 56 s.h. of credit in courses outside the School of Art and Art History in order to graduate.

The major in art history requires the following course work.

**ART HISTORY**

All of these, taken before enrollment in courses numbered ARTH:2975 and above:

- ARTH:1050 From Cave Paintings to Cathedrals: Survey of Western Art I 3 s.h.
- ARTH:1060 From Mona Lisa to Modernism: Survey of Western Art II 3 s.h.
- ARTH:1080 Writing About the Visual Arts 3 s.h.

One of these:

- ARTH:1040 Arts of Africa 3 s.h.
- ARTH:1070 Asian Art and Culture 3 s.h.
- ARTH:1095 American Indian Art 3 s.h.

All of these:

- ARTH:4999 History and Methods (taken fall of junior or senior year) 3 s.h.
- Three courses chosen from those numbered ARTH:2020 through ARTH:2920 9 s.h.
Five upper-level courses chosen from those numbered ARTH:3000 through ARTH:4941 15 s.h.

**STUDIO ART**
This course:
ARTS:1510 Basic Drawing 3 s.h.
One of these:
ARTS:1520 Design Fundamentals 3 s.h.
CERM:2010 Exploring Forms in Clay I 3 s.h.
DRAW:2310 Life Drawing I 3 s.h.
MTLS:2910 Introduction to Jewelry and Metal Arts 3 s.h.
PNTG:2410 Painting I 3 s.h.
PRNT:2610 Introduction to Printmaking 3 s.h.
SCLP:2810 Undergraduate Sculpture I 3 s.h.

**Transfer Students**
Transfer students planning to major in art history should meet with the undergraduate advisor to discuss the requirements they may fulfill with transfer courses. Art history transfer courses must be reviewed by the head of the art history area to determine the student's placement in or exemption from required art history courses. Students may count a maximum of 15 s.h. of approved transfer credit toward the major in art history.

**Study Abroad**
Students who wish to study abroad must meet with the undergraduate advisor before they depart in order to confirm approval of the courses they plan to take. Students who plan to take art history courses abroad must present the course syllabus to their advisor well in advance of their departure. The head of the art history program determines whether the study abroad course is equivalent to a course required for the major; if it is, the student is credited with fulfilling the requirement once he or she completes the course with a passing grade.

Students who take studio art courses abroad must bring their artwork back to campus and present it in a portfolio review, which determines whether the work will satisfy a requirement for their major; the requirement is waived if the study abroad course was taught by a School of Art and Art History faculty member who gave the student a grade of B.A. and B.F.A. with Teacher Licensure
Art and art history majors interested in earning licensure to teach in elementary and/or secondary schools must complete the College of Education's Teacher Education Program (TEP) in addition to the requirements for the art or art history major and all requirements for graduation with a B.A. or B.F.A. degree. The TEP requires several College of Education courses and student teaching.

Students must satisfy all degree requirements and complete Teacher Education Program licensure before degree conferral.

Contact the Office of Education Services in the College of Education for details.

**Four-Year Graduation Plan**
The following checkpoints list the minimum requirements students must complete by certain semesters in order to stay on the University's Four-Year Graduation Plan. (Courses in the major are those required to complete the major; they may be offered by departments other than the major department.)

**B.A.: Art**
Before the fifth semester begins: at least four courses in the major
Before the seventh semester begins: at least four more courses in the major (total of eight) and at least 90 s.h. earned toward the degree
Before the eighth semester begins: at least three more courses in the major (total of 11)
During the eighth semester: enrollment in all remaining course work in the major, all remaining General Education courses, and a sufficient number of semester hours to graduate

**B.F.A.: Art**
The Four-Year Graduation Plan is not available for the B.F.A. major in art. Students should work with their advisors to develop individual graduation plans.

**B.A.: Art History**
Before the fifth semester begins: at least four courses in the major
Before the seventh semester begins: at least four more courses in the major (total of eight) and at least 90 s.h. earned toward the degree
Before the eighth semester begins: at least three more courses in the major (total of 11)
During the eighth semester: enrollment in all remaining course work in the major, all remaining General Education courses, and a sufficient number of semester hours to graduate

**Honors in the Major**
Students majoring in art or in art history have the opportunity to graduate with honors in their major. Honors students in the School of Art and Art History must maintain a cumulative University of Iowa g.p.a. of at least 3.33 and a g.p.a. of at least 3.50 in their major. They also must complete an application to graduate with honors in the major.

**Honors in Art:** In order to graduate with honors in the major, students majoring in art must complete a studio art project during the semester in which they plan to graduate. They must find a studio art faculty member willing to supervise their honors project; must display the completed project in a show; and must complete a title page, abstract, and CD of images for their project. They earn credit for the project by enrolling in ARTS:4190 Honors in Studio Art.

**Honors in Art History:** In order to graduate with honors in the major, students majoring in art history must complete an honors project that includes an honors thesis during the semester in which they plan to graduate.
Students have two options for completing the honors project.

**Option 1:** Students take two upper-division courses with an honors contract and complete an extra project, such as an annotated bibliography, a supplemental paper or presentation, or a comparable project endorsed by the professor. Students then enroll in a third upper-division course, with or without honors contract, appropriate to their honors paper topic and ARTH:3985 Honors Research in Art History for 1 s.h. credit with the same instructor. Through enrollment in ARTH:3985, students write an honors paper of 3000 to 5000 words.

**Option 2:** Students research and write an honors paper of 5000 to 7500 words under the direction of an art history professor and they enroll in ARTH:3985 Honors Research in Art History for 3 s.h. credit. All students must have honors advisor approval before beginning work on their honors paper.

Art history students must have approval from their honors thesis advisor before they begin work on their thesis project. The thesis should conform to the Graduate College format for theses; see the Manual of Rules and Regulations of the Graduate College.

**University honors:** In addition to honors in their majors, undergraduate students have a variety of opportunities for honors study and activities through membership in the University of Iowa Honors Program; visit Honors at Iowa to learn about the University's honors program.

**Minor: Art**

The minor in art requires a minimum of 18 s.h. in art courses, including at least 15 s.h. earned in courses taken at the University of Iowa. Students must maintain a g.p.a. of at least 2.00 in all courses for the minor and in all UI courses for the minor. Course work in the minor may not be taken pass/nonpass. Students may not count course work for the minor in art toward requirements for the major in art history, except ARTS:1510 Basic Drawing

Art courses that may be taken include ceramics, drawing, intermedia, jewelry and metal arts, painting, photography, printmaking, sculpture, and three-dimensional (3-D) design. Two courses with the prefix ARTS are required and one art history course with the prefix ARTH may be included in the 18 s.h. required for the minor.

The minor in art requires the following course work.

<table>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>S.H.</th>
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<tbody>
<tr>
<td>ARTS:1510</td>
<td>Basic Drawing</td>
<td>3</td>
</tr>
<tr>
<td>ARTS:1520</td>
<td>Design Fundamentals</td>
<td>3</td>
</tr>
<tr>
<td>At least one introductory studio art 3-D course</td>
<td></td>
<td></td>
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<tr>
<td>At least one introductory studio art 2-D course, except DSGN:2110</td>
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</tbody>
</table>

Additional introductory studio art courses or upper-level courses in the same studio art discipline(s) as the introductory 3-D and/or 2-D courses required for the minor.

**Minor: Art History**

The minor in art history requires a minimum of 15 s.h. in art history courses, including 12 s.h. earned in advanced courses taken at the University of Iowa. Courses numbered ARTH:2000 or above are considered advanced for the minor. Students must maintain a g.p.a. of at least 2.00 in all courses for the minor and in all UI courses for the minor. Course work in the minor may not be taken pass/nonpass.

Students earning a major in art and a minor in art history may not count course work for the minor in art history toward requirements for the major in art. But they may count one art history course required for the art major toward the requirements for the art history minor; they must consult with their advisors.

The minor in art history must include one survey course chosen from these:

<table>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>S.H.</th>
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</thead>
<tbody>
<tr>
<td>ARTH:1060</td>
<td>From Cave Paintings to Cathedrals: Survey of Western Art I</td>
<td>3</td>
</tr>
<tr>
<td>ARTH:1070</td>
<td>Asian Art and Culture</td>
<td>3</td>
</tr>
<tr>
<td>ARTH:1095</td>
<td>American Indian Art</td>
<td>3</td>
</tr>
</tbody>
</table>

Before registering for a course, students must complete all of the course's prerequisites.

Contact an undergraduate advisor in the School of Art and Art History for more information about how to meet the requirements for the minor.

**Graduate Programs of Study**

- Master of Arts in art
- Master of Fine Arts in art
- Master of Arts in art history
- Doctor of Philosophy in art history

The College of Education offers an M.A. program in art education; see Teaching and Learning (p. 793) in the Catalog.

**Master of Arts: Art**

The Master of Arts program in art requires a minimum of 38 s.h. of graduate credit. The degree is offered with emphases in the following studio art disciplines: ceramics, graphic design, three-dimensional (3-D) design, drawing, intermedia and video art, jewelry and metal arts, painting, photography, printmaking, and sculpture.

M.A. students must hold a B.A. or B.F.A. in art equivalent to that offered by the University of Iowa. Undergraduate deficiencies, if any, may be made up concurrently with graduate study but do not count toward the graduate degree requirements.

The 38 s.h. of credit required for the M.A. includes at least 16 s.h. in a primary studio art emphasis; 8 s.h. in a secondary studio art emphasis chosen from one of the studio art disciplines listed above; 3 s.h. in the history and theory of art, excluding readings and directed studies; and 3 s.h. in theory, history, criticism, or philosophy, earned in courses inside or outside of the school.

M.A. students undergo a division-wide review for M.A. candidacy by the faculty during their third semester in residence. All except painting and drawing students must submit a written artist's statement or M.A. thesis.

M.A. students in intermedia and video art, and 3-D design art, are required to write an M.A. thesis. They may earn 1 s.h. for writing a technical or substantial thesis by registering for ARTS:6000 M.A. Written Thesis, with approval of
the thesis supervisor. Thesis credit earned in an M.A. program is not applicable toward M.F.A. requirements. M.A. students in other studio art disciplines choose the M.A. thesis or nonthesis option in consultation with their discipline advisor.

Master of Fine Arts: Art

The Master of Fine Arts program in art requires a minimum of 60 s.h. of graduate credit. The degree is offered with thesis and with emphases in the following studio art disciplines: ceramics, graphic design, three-dimensional (3-D) design, drawing, intermedia, jewelry and metal arts, painting, photography, printmaking, and sculpture. Students must earn at least 24 s.h. of credit for the degree at the University of Iowa, including approved credit earned for the M.A. in art.

M.F.A. students must hold an M.A. in art equivalent to that offered by the University of Iowa. Transfer credit is decided by faculty review. Following completion of the M.A., students may be invited into the M.F.A. program.

REQUIRED COURSES

The 60 s.h. of credit required for the M.F.A. includes at least 24 s.h. in a primary studio art emphasis; at least 12 s.h. in a secondary studio art emphasis selected from those listed above; 3 s.h. in art history and theory of art (if not already taken); and 3 s.h. in theory, history, criticism, or philosophy (if not already taken). Students must earn 8 s.h. in their primary studio art emphasis and 4 s.h. in their secondary studio art emphasis after being granted an M.A. in art.

M.F.A. COMMITTEE REVIEW

Students must undergo an M.F.A. committee review. They also must complete a written thesis and possibly a studio thesis. Students are reviewed by their committees at the end of the semester prior to the semester they intend to graduate.

Students are responsible for identifying a degree chair by the semester prior to the semester they intend to graduate. M.F.A. committee members are selected in consultation with the degree chair by October 1 for spring or summer graduation and March 1 for fall graduation. The committee is comprised of the degree committee chair, four members of the graduate faculty at the assistant professor rank or above, two graduate faculty members from a student's major discipline, one graduate faculty member from a student's minor discipline, and an additional member. Adjunct faculty, lecturers and visiting professors may serve on degree committees with approval of the degree committee chair and a Graduate College petition request (renewable every three years).

M.F.A. students sign up for review through the graduate program coordinator. They obtain a form to be signed by both the degree committee members and a faculty member in the second emphasis studio discipline. These forms must be returned to the office no later than the University's official midterm day by 4:30 p.m.

M.F.A. THESIS

A thesis abstract is given to all degree committee members and is due by November 15 for May or August graduation and by April 15 for December graduation. The thesis chair is responsible for meeting with the student immediately thereafter to direct his or her thesis content and to coordinate meeting with the full committee.

A copy of the thesis is due to all committee members before the M.F.A. exhibition to be read in its final form prior to thesis defense. The thesis must be as complete as possible including photocopies (may be black and white) of approved figures that will be included in the final thesis. The graduate program coordinator will provide a student with complete thesis/artist statement procedures, including the Graduate College calendar.

A thesis defense of the M.F.A. work must be scheduled with the M.F.A. candidate's committee during the final semester in residence. The M.F.A. exhibition is the final examination and where the degree committee signs the final examination report.

The complete thesis in final form must be deposited for its first check in the Graduate College approximately four weeks prior to the end of the semester in which the degree is to be conferred. Graduate College regulations covering the specific requirements of the written thesis are found in the Thesis Manual.

The thesis and the signed certificate of approval are submitted by the Graduate College deadline. The certificate of approval (a page of the written thesis) must be signed by all degree committee members. The student is responsible for obtaining committee members' signatures on the certificate of approval. Any corrections to the thesis required by the graduate examiner or the degree committee should be completed prior to the final deposit.

M.F.A. students may earn 1 s.h. for writing a technical or substantial thesis by registering for ARTS:7000 M.F.A. Written Thesis, with approval of the thesis supervisor. Thesis credit earned in an M.A. program is not applicable toward M.F.A. requirements.

Master of Arts: Art History

The Master of Arts program in art history requires a minimum of 30 s.h. of graduate credit. M.A. students are expected to acquire a broad knowledge of art history and to become familiar with major periods and monuments of world art. They also become proficient scholars, receiving training in research methods and theory necessary for subsequent scholarship at the Ph.D. level.

M.A. students must maintain a g.p.a. of at least 3.50. Only one semester of academic probation is allowed. All M.A. candidates, including transfer students, must complete at least 24 s.h. in residence at the University of Iowa.

M.A. students in art history must earn a grade of B or higher in semester-long courses numbered 3000 or above in five of the following 10 distribution fields: African (including Oceanic), architecture, Asian, ancient (3000 B.C.E. to 300 C.E.), medieval, Renaissance, Baroque, 18th- and 19th-century European, American (including pre-Columbian, Native American, and African American), and modern/contemporary. These courses must be taken after the B.A. is granted.

M.A. students must complete a qualifying paper that demonstrates their ability to conduct scholarly research and convey ideas in writing appropriately for the discipline and for the student's specialization field.
REQUIRED COURSES
M.A. students in art history must satisfactorily complete ARTH:4999 History and Methods during their first fall semester of enrollment and must register for an art history seminar in their first, second, third, and fourth semesters of enrollment.

They also must satisfactorily complete ARTH:6020 Art History Colloquium every semester that they are enrolled for 9 s.h. or more or are serving as teaching or research assistants. Students who are not employed as teaching or research assistants or are registered for less than 9 s.h. are strongly encouraged to attend the colloquium.

Courses outside the curriculum of the School of Art and Art History's art history division do not carry art history credit. Cross-listed courses not taught by art history faculty members also do not carry art history credit.

DIRECTED STUDIES
Directed Studies [ARTH:6040] is designed for graduate students who already have taken one or more advanced courses in a specific art history field. It provides students with an opportunity to work one-to-one with a professor to continue specific research interests developed in lecture courses or seminars, or on topics that eventually may be the subject of a thesis or dissertation. Directed Studies cannot be substituted for a lecture course already offered in the program. Students must discuss their decision to take Directed Studies with the professor involved and obtain the professor's approval. The Directed Studies topic must be within the professor's range of expertise.

Students meet with their Directed Studies professor once a week. The hours of work and written assignments required for Directed Studies must be equal to a comparable regularly scheduled course. Directed Studies is not available through Guided Correspondence Study.

LANGUAGE REQUIREMENT
M.A. students must demonstrate proficiency in French or German by the end of their third semester. Proficiency is determined by a translation exam administered under the direction of the art history division. Credit earned in language courses does not count toward the degree.

M.A. COMMITTEE
The M.A. committee consists of the student's M.A. advisor and two additional tenured or tenure-track faculty members in art history.

M.A. QUALIFYING PAPER
Prior to graduation, each M.A. candidate must complete a qualifying paper on a topic that stems from a term paper written for an art history graduate seminar or a 3000-level course. The paper should be between 5,000 and 7,500 words in length (20 to 30 pages exclusive of bibliography and illustrations). A student chooses an M.A. advisor who specializes in the student's field of concentration. In cases where a student wants to focus on a topic that involves more than one field, the art history faculty strongly recommends that the student work closely with faculty members in both fields.

FINAL EXAMINATION
The final examination constitutes an oral defense of the qualifying paper. The final examination meeting with the M.A. committee normally takes place toward the end of the student's last semester of course work.

Doctor of Philosophy: Art History
The Doctor of Philosophy program in art history requires a minimum of 72 s.h. of graduate credit. Ph.D. students are expected to acquire great breadth and depth of knowledge in the discipline of art history, achieve a high level of expertise in a specialized field, and demonstrate professional speaking and writing skills. The program provides them with scholarly challenges, research skills, and mentoring necessary for professional development and successful careers.

Ph.D. students must maintain a g.p.a. of at least 3.50. They may count a maximum of 38 s.h. of work completed for the M.A. toward the Ph.D., excluding credit earned in language courses. Students are allowed only one semester of academic probation.

To establish academic residency, doctoral students must be enrolled full-time (at least 9 s.h.) at the University of Iowa for two semesters beyond their first 24 s.h. of graduate study; or they must enroll for at least 6 s.h. in each of three semesters during which they hold an assistantship of one-quarter-time or more. The resident rates for tuition are assessed for assistantship seminars and adjacent summer sessions.

Ph.D. students major in one of the following 10 distribution fields: African (including Oceanic), architecture, Asian, ancient (3000 B.C.E. to 300 C.E.), medieval, Renaissance, Baroque, 18th- and 19th-century European, American (including pre-Columbian, Native American, and African American), and modern/contemporary. Students also minor in two fields. The first minor must be in an art history distribution field that is not contiguous with the major field; the second may be in any art history distribution field or in a relevant discipline outside of art history, subject to the faculty's approval.

Ph.D. students must complete a publishable dissertation that makes an original contribution to the art history discipline and demonstrates evidence of superior understanding of critical issues in the student's chosen specialization field.

For more detailed information, consult the Art and Art History Graduate Bulletin.

REQUIRED COURSES
Ph.D. students must satisfactorily complete ARTH:4999 History and Methods, even if they have completed a similar course at another institution (students who have completed the course for a master's degree or other previous work at Iowa are exempt). They must register for an art history seminar in their first three semesters of Ph.D. course work (or in their fifth, sixth, and seventh semesters of graduate study), before the Ph.D. readings course and comprehensive exam.

They also must satisfactorily complete ARTH:6020 Art History Colloquium every semester that they are enrolled for 9 s.h. or more or are serving as teaching or research assistants. Students who are not employed as teaching or research assistants or are registered for less than 9 s.h. are strongly encouraged to attend the colloquium.

Students may count up to 6 s.h. of credit earned for dissertation research toward the 72 s.h. required for the degree. Courses outside the curriculum of the School of
Art and Art History's art history division do not carry art history credit.

**DIRECTED STUDIES**

Normally, a maximum of 6 s.h. earned in ARTH:6040 Directed Studies may be applied toward the semester-hour requirement for the Ph.D., although doctoral students may petition the art history faculty for permission to apply up to 9 s.h.

**LANGUAGE REQUIREMENT**

Students must demonstrate proficiency in French or German for admission to the Ph.D. program. They also must demonstrate proficiency in a second non-English language relevant to their research area by the end of their third semester of Ph.D. work or before their dissertation topic is approved. Proficiency is determined by a translation exam administered under the direction of the art history division. Credit earned in language courses does not count toward the degree.

**PH.D. COMMITTEE**

The Ph.D. committee consists of the student's dissertation advisor, who is responsible for the major field; two members responsible for the two minor fields; and at least two additional members. Of these five, four must be tenured or tenure-track faculty members from the art history division. One must be from outside the division and must be a member of the Graduate College faculty. When appropriate, committees may include additional members.

**COMPREHENSIVE EXAMINATION**

Upon completion of course requirements, the Ph.D. candidate takes three written comprehensive examinations. The major exam consists of six questions and lasts six hours; the two minor exams each consist of three questions and last three hours. The exams are taken on any three days within one week (Monday through Friday).

The scope of the comprehensive exams is determined in consultation with the candidate’s degree committee supervisor and the committee members responsible for the two minor fields.

**ORAL COMPREHENSIVE EXAMINATION**

Within approximately two weeks of completing the three written exams, the candidate meets with his or her degree committee for the oral comprehensive examination, which concentrates on questions that arise from the written comprehensive exams.

**DISSERTATION PROPOSAL**

As soon as possible after completing the comprehensive examinations, the candidate submits a dissertation proposal to his or her degree committee supervisor and subsequently to the degree committee. The committee meets as a group with the candidate to discuss the dissertation proposal and to offer comments and suggestions. (The proposal must be submitted to the committee at least two weeks before the approval meeting.) The proposal includes a 1-2 page abstract, a 10-15 page précis (including a review of the state of the field), and a bibliography.

After the proposal has been approved by the committee, the candidate circulates an abstract to the entire art history faculty. He or she must give a public presentation on the dissertation topic no later than the end of the semester following the degree committee's approval. The presentation is scheduled with the head of art history.

**FINAL EXAMINATION**

Upon completing a dissertation, which constitutes an original scholarly contribution to the field, the candidate meets with the Ph.D. committee for an oral defense of the dissertation. The oral defense constitutes the final examination for the Ph.D. The successful completion of this examination normally marks the last stage in the candidate’s fulfillment of requirements for the degree.

**Admission**

Prospective graduate students must meet the School of Art and Art History's admission requirements for the specific degree programs they plan to enter. Prospective students must submit application materials to the University's Office of Graduate Admissions and to the specific program they wish to enter. Program-specific application requirements and deadline dates are listed below.

Deadline dates for submission of materials to the Office of Graduate Admissions are December 15 for art history programs and January 1 for studio art programs; all are for fall admission.

Application materials should be uploaded onto a student’s admissions profile (see instructions below under “Application Procedures”). All applicants must meet the admission requirements of the Graduate College (see the Graduate College section of the Catalog) and the School of Art and Art History requirements.

**SCHOOL OF ART AND ART HISTORY REQUIREMENTS**

Applicants whose first or official language is not English and whose previous academic degrees were not earned at an English-language institution must score as follows on the Test of English as a Foreign Language (TOEFL): for studio art applicants, 81 (Internet-based); for art history applicants, at least 100 (Internet-based). All applicants must have a minimum TOEFL IBT speaking score of 26 and a listening score of 25. An application will not be reviewed if scores are lower than the requirements specify.

Prospective graduate students must meet the School of Art and Art History’s admission requirements for the specific degree programs they plan to enter. They must submit application materials to the University's Office of Graduate Admissions and to the specific program they wish to enter. Program-specific application requirements and deadline dates are listed below.

All applicants must meet the admission requirements of the Graduate College; see the Manual of Rules and Regulations of the Graduate College.

Although exceptions may be made when other components of the application are strong, art history applicants should have a combined verbal and quantitative score of at least 300 and an analytical writing score of at least 5 on the Graduate Record Exam (GRE) General Test. Art history applicants must have a bachelor's degree, preferably in art history or a related field, and have an undergraduate g.p.a. of at least 3.25.

Non-native speakers of English should note that most students are financially funded through teaching, and the Iowa Board of Regents mandates that all non-native speakers of English pass an oral English test in order to
teach; the equivalent of a TOEFL iBT speaking section score of 26 is required.

APPLICATION PROCEDURES
Prospective students may apply online through the Office of Admissions web site. After submitting an application, an applicant will receive e-mail instructions on how to access his or her admissions profile on ISIS (Iowa Student Information System). An applicant then uploads the required supplemental documents through a secure portal.

Required documents:
- transcripts from all colleges and universities an applicant has attended;
- contact information for three individuals (able to assess applicants’ potential for graduate study) designated to provide letters of recommendation;
- a statement of purpose;
- an application for graduate awards, if desired; and
- an application for graduate scholarships and fellowships, if desired.

Art history applicants should supply a research paper (preferably from an art history course) or thesis that demonstrates potential to undertake graduate-level research in art history, and a personal statement of 1,000 words describing his or her intellectual development, academic interests, and career goals. The statement must name the University of Iowa faculty member under whose guidance the applicant hopes to work and indicate how that faculty member’s area of expertise, or how the art history program is especially suited to the applicant’s interests and goals.

Applicants should consult the Art History Graduate Bulletin on the School of Art and Art History web site.

A student who completed an M.A. at the University of Iowa and who wishes to apply to the Ph.D. program in art history must make a formal application for change of status through the graduate program coordinator. Applications are evaluated in the context of the entire applicant pool.

Studio art applicants’ portfolio requirements are listed below. Images in the portfolio should be uploaded pdf files no larger than 72 dpi and 1240 by 1240 pixels. File size must not exceed 1 MB. Images must be numbered according to the order they are to be presented to the admissions committee, beginning with an inventory list that includes each image’s name, title, medium, size, and approximate date of work, as well as the student’s name and emphasis. Applicants may supply a link to their personal web site.

Portfolio contents and submission requirements are as follows:

- Ceramics, three-dimensional (3-D) design, and jewelry and metal arts: eight images in the primary studio art discipline and two in a second discipline.
- Graphic design: documentation of 15 to 20 projects. Applicant should include a brief description of each work, illustrated with embedded still images and supplemented by links to online media. The precise number of images varies according to the nature of the work. Contact the School of Art and Art History with any questions.
- Intermedia and video art: documentation of 5 to 10 projects. Applicants should include a brief description of each work, illustrated with embedded still images and supplemented by links to online media. The precise number of images varies according to the nature of the work. Contact the School of Art and Art History with any questions.
- Painting and drawing: eight images in the primary studio art discipline and two in a second discipline.
- Printmaking: 10-20 images.
- Sculpture: 20 images in sculpture, including details, and two or three images in a second discipline.

Extreme care is taken in handling all portfolios, but the School of Art and Art History cannot be responsible for reimbursement in the event of loss or damage.

The Office of Graduate Admissions notifies all applicants by mail of admission decisions.

Financial Support
Fellowships, teaching assistantships, research assistantships, and tuition scholarships are awarded to graduate students on the basis of artistic and/or scholarly record.

Presidential Graduate Fellowships
The Graduate College awards Presidential Graduate Fellowships on the basis of a University-wide competition among incoming Ph.D. students. For information about the fellowships, including nomination and selection criteria and stipends, see Presidential Graduate Research Fellowship on the Graduate College web site.

Dean’s Graduate Fellowships
The Graduate College awards Dean’s Graduate Fellowships on the basis of a University-wide competition among graduate students. Criteria for the fellowships are similar to those for the Presidential Graduate Fellowship but are designed to support incoming students who are underrepresented in graduate education. For more information, see Dean’s Graduate Research Fellowship on the Graduate College web site.

Iowa Arts Fellowships
The Graduate College awards Iowa Arts Fellowships to two incoming or first-year studio art graduate students each year. For more information, see Iowa Arts Fellowship on the Graduate College web site.

Teaching and Research Assistantships
Assistantships are awarded to graduate students on the basis of academic record, promise as scholars or artists, and demonstrated ability to do the job. Quality of performance in one’s graduate program at Iowa is generally the major criterion for awarding teaching assistantships. The number of hours of work required depends on the amount of the award.

Scholarships and Fellowships
The School of Art and Art History offers a variety of scholarships and fellowships made possible by contributions from alumni who wish to support promising
artists and scholars. These awards are made on the same basis as teaching and research assistantships. Information and application materials for graduate scholarships and fellowships are included in the admissions package. They also are available from the School of Art and Art History main office.

Renewal or reappointment for fellowships and assistantships depends on adequate progress toward the degree (graduate students must accumulate at least 18 s.h. of graduate credit each calendar year and maintain a grade-point average above the required minimum) and satisfactory performance of assistantship duties. Decisions on assistantships and financial aid generally are made during the latter part of the spring semester for the following academic year. Applications and all relevant materials should be on file by February 1.

Student Organizations
The undergraduate Art History Society and the graduate Art History Society sponsor activities for students. The Faculty/Graduate Student Art History Colloquium meets five times each semester to focus on professional development and issues of broad interest in art.

Resources and Facilities
Reference Collections
The art library contains 100,000 volumes, an outstanding periodical collection, and an extensive microfilm and microfiche archive.

The school's Office of Visual Materials contains a rapidly growing collection of 325,000 slides, 30,000 digital images, 350,000 35mm slides, 30,000 mounted photographs, and a video collection.

Museum of Art
The University of Iowa Museum of Art has a significant permanent collection that includes major holdings of 20th-century and contemporary art, African and pre-Columbian art, English and American silver, European and American prints, drawings and photographs, and Etruscan, Iranian, and contemporary American ceramics. As well as serving as a resource for research in a wide variety of art history areas, the museum offers a program of exhibitions, lectures, and recitals.

Due to the Iowa River flooding during summer 2008, the museum's collections are being displayed and its events are being held in a variety of other facilities. Learn about current exhibitions and events, and their locations, by visiting the Museum of Art web site.

Interdisciplinary Resources
Colloquia, visiting artists and lecturer programs, and graduate workshops bring visitors to the School of Art and Art History and provide open forums for discussion of issues in art and scholarship.

Among the school's major assets is the Project for the Advanced Study of Art and Life in Africa (PASALA), an interdisciplinary program that brings together faculty with international reputations in art history, anthropology, film, history, and literature to offer courses and independent study of art in West, Central, East, and South Africa. The result is a program of unusual breadth and depth of expertise. PASALA is among the most active of such programs in the country, organizing international symposia that discuss significant topical issues and publishing the proceedings in regular issues of Iowa Studies in African Art. PASALA offers scholarships and support for research in Africa and dissertation preparation to outstanding students. A major resource for PASALA is the UI Museum of Art's Stanley Collection of African Art. Visit Art & Life in Africa to learn more.

Art history participates in the University's Crossing Borders program, which offers major financial support to designated graduate student fellows whose dissertation topics involve multiple foreign language areas. Fellows take team-taught seminars in a range of disciplines, with focus on interactions across cultural, regional, or national divides. They help plan an annual convocation, at which they and invited lecturers present their research.

The School of Art and Art History affiliates with the Department of American Studies (p. 44), giving students opportunities to study not only the history of American art but a variety of interdisciplinary programs in American history, literature, and politics. The school also is linked to the Medieval Studies (p. 467) Program, which offers an undergraduate certificate and courses in the history, literature, and culture of the Middle Ages.

Art Buildings
The University of Iowa is restoring and replacing School of Art and Art History facilities that were damaged or destroyed by Iowa River flooding during summer 2008. The school's administrative center, Art Building West, has reopened and once again is home to the school's main office as well as the Office of Visual Materials, the Art Library, an auditorium, art history classrooms, a gallery, a café, and studios for graphic design, painting, animation, and digital photography. Designed by architect Steven Holl, Art Building West has won numerous awards for its innovative design, including the 2007 American Institute of Architects Honor Award for Architecture.

Studio classrooms are temporarily housed in the Studio Arts Building, on Iowa City's south side, and planning is under way for permanent facilities to be built close to Art Building West. Visit the School of Art and Art History web site and ISIS for information about studio, office, and classroom sites.

Courses
Art History, Lower-Level Undergraduate

**ARTH:1000 First-Year Seminar** 1 s.h.

Small discussion class taught by a faculty member; topics chosen by instructor; may include outside activities (e.g., films, lectures, performances, readings, visits to research facilities). Requirements: first- or second-semester standing.
ARTH:1010 Art and Visual Culture 3 s.h.
Visual analysis, media and techniques, artistic subject matter and aesthetic issues; historical periods and movements from ancient times to present; provides strong orientation to visual aspects of humanities, background for other art history courses, and introduction to visual arts for personal enrichment; for students new to art history. GE: Historical Perspectives; Literary, Visual, and Performing Arts.

ARTH:1020 Masterpieces: Art in Historical and Cultural Perspectives 3 s.h.
Masterpieces of Western art—how to look at, think about, and understand some of the worlds' most exciting works of architecture, painting, and sculpture; their construction, hidden meanings, historical content, and their meanings today. GE: Literary, Visual, and Performing Arts.

ARTH:1030 Themes in Global Art 3 s.h.
Key themes in art from a global perspective; propaganda and power, social functions of art, word and image, ritual and body decoration, artistic exchange, religion. GE: Literary, Visual, and Performing Arts; Values, Society, and Diversity.

ARTH:1040 Arts of Africa 3 s.h.
Arts, artists, and cultures of Africa; sculpture, paintings, pottery, textiles, architecture, human adornment. GE: International and Global Issues; Literary, Visual, and Performing Arts.

ARTH:1045 African American Art 3 s.h.
Chronological development and critical themes of African American visual culture; material culture of slave artists, history of racist imagery in the U.S., most important African American fine artists; slave dwellings, quilts, paintings, sculpture, photography; W.E.B. Du Bois' claim to Egyptian artistic patrimony, controversial work of Kara Walker, hip-hop aesthetic of Kehinde Wiley; previous art history experience not required. GE: Values, Society, and Diversity.

ARTH:1050 From Cave Paintings to Cathedrals: Survey of Western Art I 3 s.h.
Survey to foster development of critical skills in thinking and writing about visual culture, and to familiarize students with broad outlines of artistic development in the Western tradition, from prehistory through later Middle Ages; aesthetic qualities of artworks, relationship between style, function, and meaning. GE: Historical Perspectives; Literary, Visual, and Performing Arts.

ARTH:1060 From Mona Lisa to Modernism: Survey of Western Art II 3 s.h.
Survey of the Western world's visual arts from Renaissance (ca. 1400) to present; major movements and principal masters of Western Europe and the United States in their social and historical contexts; focus on stimulation of visual literacy and familiarity with outstanding cultural monuments. GE: Historical Perspectives; Literary, Visual, and Performing Arts.

ARTH:1070 Asian Art and Culture 3 s.h.
Art from India, China, and Japan in many media and forms, in their cultural and historical contexts; cultural distinctions of these Asian civilizations as seen through the visual arts; chronology used to highlight historical processes and provide perspectives on continuity and change. GE: Historical Perspectives; Literary, Visual, and Performing Arts. Same as CHIN:1070.

ARTH:1080 Writing About the Visual Arts 3 s.h.
Opportunity to develop understanding of and skill in using visual-arts writing conventions and linguistic competencies that are necessary for academic and professional success; formats such as exhibition reviews, art criticism, research writing, artist’s statements; experience through exercises, formal essays, revision, workshops. Requirements: fulfillment of General Education rhetoric requirement.

Fundamental and universal question—what is the relationship between humanity and nature; how ornamental garden has functioned as a metaphor for paradise across time and among diverse cultures; basic tools to analyze any landscape design; how artful manipulation of nature has served to express various political, religious, and social ideals across the globe; comprehensive and chronological survey of garden design development. GE: Historical Perspectives.

ARTH:1095 American Indian Art 3 s.h.
Sculpture, painting, architecture, crafts, arts of personal adornment of native peoples of North America. GE: Literary, Visual, and Performing Arts; Values, Society, and Diversity.

ARTH:2020 Introduction to Western Architecture 3 s.h.
Overview of monuments, Neolithic period to present; aesthetic and structural principles, major styles, architects.

ARTH:2030 Introduction to American Architecture 3 s.h.
Characteristics of American public, domestic, and industrial architecture as evolved from Native American contact period to present; visual features of American-built environment and social, political, and economic factors that shaped development; design contributions of individual architects, impact of new technology, and growth of architectural profession.

ARTH:2160 Introduction to Art and Life in Africa 3 s.h.
Masks and sculpture; techniques used to create art (pottery, weaving, carving, brass casting, iron smelting and forging, architecture); videos of art used in performance and African artists creating art; readings of African novels, including Things Fall Apart by Nigerian novelist Chinua Achebe; daily life in Africa (farming, building houses, cooking, education, child rearing, funerals, religion) and other aspects of life that give context to art created by African artists.
ARTh:2220 Introduction to the Art of China 3 s.h.
Visual arts of China and their history; emphasis on understanding in context of Chinese civilization, history. Same as ASIA:2221.

ARTh:2250 Introduction to the Art of Japan 3 s.h.
Chronological survey of Japan's visual arts in their historical and cultural contexts from Neolithic age to present; extensive use of slides, films, other visual materials. Same as JPN:2250.

ARTh:2320 Introduction to Ancient Art 3 s.h.
Art and architecture of the Mediterranean world (ca. 3500 B.C.E.) to death of Constantine (337 C.E.); Egyptian, Cycladic, Minoan, Mycenaean, Greek, Etruscan, and Roman cultures; artistic responses to life and death; impact of breakthroughs in technology and engineering on visual culture; role of art in empire building; interrelationships of art, politics, religion. Same as CLSA:2226.

ARTh:2330 Introduction to Egyptian and Ancient Near Eastern Art 3 s.h.
Art and architecture of Egypt and the Near East (ca. 3500 B.C.E.) to advent of Islam; Egyptian, Sumerian, Assyrian, Babylonian, and Persian cultures; artistic responses to life and death; impact of breakthroughs in technology and engineering on visual culture; role of art in empire building; interrelationships of art, politics, and religion. Same as CLSA:2330.

ARTh:2340 Introduction to Greek and Roman Art 3 s.h.
Art and architecture of Greece and Rome (ca. 3000 B.C.E.) to death of Constantine (337 C.E.); Cycladic, Minoan, Mycenaean, Greek, Etruscan, and Roman cultures; artistic responses to life and death; impact of breakthroughs in technology and engineering on visual culture; role of art in empire building; interrelationships of art, politics, and religion. Same as CLSA:2340.

ARTh:2420 Introduction to Medieval Art 3 s.h.
Comprehensive survey of artistic traditions of Western Europe and Mediterranean Basin from roughly 300 to 1500; reign of Roman Emperor Constantine to lifetime of Christopher Columbus; complexity and diversity of cultural and artistic traditions that flourished in these so-called Middle Ages, where blending of Roman and northern legacies created European cultures from which we belong.

ARTh:2520 Introduction to Italian Renaissance Art 3 s.h.
Italian art, architecture from early Renaissance to 1600.

ARTh:2620 Introduction to Baroque Visual Culture 3 s.h.
Art, architecture in Europe from 1600 to 1700.

ARTh:2730 Introduction to Nineteenth-Century Art 3 s.h.
Major European artists, works, movements, aesthetic theories from late 18th century to 1900; works in their aesthetic, cultural, intellectual, political contexts; boundaries, definitions of movements (i.e., Neo-Classicism, Romanticism, Realism, Impressionism, Post-Impressionism, Symbolism).

ARTh:2740 Introduction to Northern Renaissance Art 3 s.h.
Northern European art between 1350 and 1600; the transition between the late Middle Ages and the Renaissance; artistic output of this period; development of critical thinking skills by exploring ways in which the Northern Renaissance has been defined with respect to Italian Renaissance and northern medieval traditions.

ARTh:2820 Introduction to Modern/Contemporary Art 3 s.h.
Modern European and American painting, sculpture, and architecture from 1880 to present; major art movements of modern art history.

ARTh:2920 Introduction to American Art 3 s.h.
Survey of painting, sculpture, architecture, and photography in the United States from colonial era to mid-20th century; how the new country grappled with creating a visual culture unique to its own character and development; portraits, landscape paintings, sculpture, and architecture in an array of styles and media; circumstances of their creation, aspirations and preconceptions of their makers, perspectives of their audiences. Recommendations: ARTH:1060. GE: Historical Perspectives; Literary, Visual, and Performing Arts.

ARTh:2975 Undergraduate Seminar in the History of Art 3 s.h.
Characteristic problems, methodological issues, critical thinking and writing. Offered fall semesters. Requirements: art history major.

### Art History, Upper-Level

#### Undergraduate and Graduate

An introductory course in the appropriate art history area or consent of instructor is prerequisite for some courses numbered above 3000. Courses titled "Themes in ..." consider topics of current interest in the field, organized thematically rather than chronologically.

ARTh:3000 Digital Approaches to Art History I 3 s.h.
Digital approaches to study of art history; emphasis on cultural identity.

ARTh:3020 Paris and the Art of Urban Life 3 s.h.
City of Paris examined in varied historical, artistic, cultural contexts; interdisciplinary. Same as FREN:3020.

ARTh:3030 History of Prints 3 s.h.
Printmaking as important art form, influential carrier of styles and iconography from area to area; focus on Europe; history of prints from prehistoric times to present.

ARTh:3056 Italian Baroque Visual Culture 3 s.h.
Visual culture of 17th-century Italy contextualized; major media (painting, sculpture, architecture) by leading artists (Bernini, Borromini, Caravaggio, Cortona); full range of material culture, including minor and decorative arts; use of imagery by individual and institutional patrons for the persuasive purpose of political and social advancement; ideological utility of art as a recurring theme, underscoring the Baroque antecedents of media manipulation of our own time.
ARTH:3070 Themes in Baroque-Era Art 3 s.h.
Topics and themes in baroque-era art.

ARTH:3080 Marketing, Promoting, Politicking Contemporary Public Art 3 s.h.
How public art projects are conceived, created, and paid for; projects sponsored and funded by federal, state, and local governments and private businesses 1960 to present; projects' operational structures, how artists are selected; Vietnam Veterans Memorial, Serra's Tilted Arc, recent projects. Same as MUSM:3080.

ARTH:3085 Principles of Historic Preservation of the Built Environment 3 s.h.
Overview of practical and theoretical principles of historic preservation of the built environment; hands-on fieldwork, archival research, and document preparation; evolution of historic preservation in America and its controversies.

ARTH:3090 Contemporary Architecture 3 s.h.
Quality of contemporary-built environments in America, Western Europe, Asia, and Middle East from 1970 to present; stylistic evolution of postmodern design, new urbanism, sustainable architecture; impact of literary and cultural theory on contemporary practitioners such as Daniel Libeskind, Steven Holl.

ARTH:3100 Themes in 18th- and 19th-Century European Art 3 s.h.
Themes and topics in 18th- and 19th-century European art.

ARTH:3103 Art of the Pacific Islands 3 s.h.
Visual arts of peoples of the Pacific islands (Polynesia, Micronesia, Melanesia); Hawaii, Tahiti, the Marquesas Islands, New Guinea, New Ireland, New Britain, Fiji, Tonga, and Marshall, Marianas, and Gilbert islands in Micronesia; focus on art in social context; history of human occupation on these islands dating back to 2500 B.C.; architecture, figurative sculpture, pottery, textiles, canoe building; results of encounters between Europeans and Pacific Islanders.

ARTH:3120 The Art of Ancient Mexico 3 s.h.
Art and architecture of Mexico and Peru before Cortéz.

ARTH:3150 Art of West Africa 3 s.h.
How art is used to solve problems and mark important passages in life.

ARTH:3160 Themes in African Art 3 s.h.
Survey of African architecture; structures throughout continent ranging from rock-cut churches of Ethiopia to elaborately painted Ndebele homes of South Africa; four areas of African architecture (ancient, traditional, Islamic, contemporary); function, materials, aesthetic choices of architecture and how they reflect social, religious, political, and economic situations of people who constructed it.

ARTH:3161 Themes in Ancient Art 3 s.h.
Themes and topics in ancient art.

ARTH:3170 The Art of Central Africa 3 s.h.
Artistic production and media in Central Africa categorized by geographies but examined from perspectives of innovation, power, gender, performance, ancestry, religious beliefs, technology, death, and the body; breadth of Central Africa's artistic production, art history, and terminology; 20th-century debates around African art.

ARTH:3197 Themes in Modern and Contemporary Art 3 s.h.
Topics and themes in modern and contemporary art.

ARTH:3220 Chinese Art and Culture 3 s.h.
Archaeological discoveries, sculpture, painting, architecture, calligraphy, other arts of Greater China area in historical and cultural contexts of past 5,000 years. Prerequisites: ARTH:1060 or ARTH:2220. Same as ASIA:3219.

ARTH:3230 Chinese Painting I: Pagodas and Palaces 3 s.h.
Early Chinese painting from fourth century B.C.E. through 14th century C.E.; figural style, religious art, emergence of landscape, other nonreligious subjects, interconnectedness of painting and calligraphy as fine arts. Same as ASIA:3220.

ARTH:3240 Chinese Painting II 3 s.h.
History of painting in China during the Song Dynasty (960-1279 C.E.) and later; emphasis on art of later centuries to present time in its historical and cultural contexts.

ARTH:3260 Japanese Painting 3 s.h.
Japanese painting in its historical, cultural contexts; focus on developments of successive eras—religious art; narrative, other literary connections; Zen; decorative traditions; popular arts; Japan and the modern world. Same as JPN:3260.

ARTH:3270 Themes in Asian Art History 3 s.h.
Same as ASIA:3270.

ARTH:3310 Celtic and Viking Art 3 s.h.
Art and architecture of Celts and Vikings from prehistory to Middle Ages.

ARTH:3320 Egyptian Art 3 s.h.
Sculpture, painting, architecture, and luxury arts from Pyramid Age to Death of Cleopatra. Same as RELS:3704.

ARTH:3325 Kings, Gods, and Heroes: Art of the Ancient Near East 3 s.h.
Arts, kings, and cultures of Mesopotamia, Syria, and Iran; sculpture, seals, pottery, metalworking, architecture.

ARTH:3330 Classical Greek Art 3 s.h.
Art, sacred architecture from early Classical through late fourth century B.C.E.; Athens in the Golden Age. Same as CLSA:3227.

ARTH:3340 Greek Vase Painting 3 s.h.
Greek ceramics as documents of religious beliefs, mythology, and daily life 1000-300 B.C.E.

ARTH:3350 Art of Early Rome: Patrons and Politics 3 s.h.
Examination of architecture, sculpture, and painting in central Italy from c. 800 B.C. to the end of the Roman Republic in 27 B.C.; art in the service of social ideology and political propaganda; funerary art and its relationship to the living; artistic interactions between Etruria, Greece, and Rome. Same as CLSA:3232.

**ARTH:3360 Art of the Ancient Roman Empire** 3 s.h.
Major developments in architecture, sculpture, and painting from the ascension of Augustus to sole ruler in 31 B.C. to the death of Constantine in A.D. 337; influence of individual emperors on the development of artistic forms; relationship between public and private art; interdependency of Rome and the provinces. Same as CLSA:3233.

**ARTH:3370 Art and Culture in Ancient Pompeii** 3 s.h.
Art and architecture, as documents of ancient society and religion in towns destroyed by Mount Vesuvius in C.E. 79. Same as CLSA:3234.

**ARTH:3375 Birth of the Holy Land: Art and Architecture in the Ancient Middle East** 3 s.h.
Major developments in architecture, sculpture, ceramics, and mosaics in Israel, Palestine, Syria, and Arabia from death of Alexander the Great to rise of Islam (4 B.C.E. to 8 C.E.); Greek and Roman influences versus local traditions; Roman Empire; growth of churches, synagogues, and mosques; identity and religion. Same as RELS:3375.

**ARTH:3380 City of Rome: Image and Ideology** 3 s.h.
Myth of the city of Rome as seen in paintings, sculpture, architecture, urbanism, and cinema from early Renaissance to Mussolini; focus on urban topography and mythic origins; the divinely-ordained destiny of Rome in God’s providential plan for humanity; raw imperialism of Italian fascism as manifested in the visual legacy of the city; ideological underpinnings of the city’s major institutions (the papacy, municipal government, Italian monarchy) and the fascist state as supported through the appropriation of the myth of Rome.

**ARTH:3385 Baroque Rome: Caravaggio, Bernini, Borromini** 3 s.h.
Rome and its institutions as reflected in the careers of its three most revolutionary artists.

**ARTH:3390 Early Medieval Art** 3 s.h.
Complex artistic traditions that developed roughly between 300 and 1000 in territories once governed by the Roman Empire and in areas of northern Europe directly influenced by Western Christian tradition; period as not simply a “Dark Age,” but a pivotal chapter in history of Western art and culture; group discussion, individual research topics.

**ARTH:3391 Themes in Medieval Art** 3 s.h.
Themes and topics in medieval art.

**ARTH:3420 Gothic Architecture** 3 s.h.
Gothic architecture and its history, from varied perspectives (e.g., formal structural, symbolic, geometric, socioeconomic).

**ARTH:3520 The Sculptural Origins of Michelangelo** 3 s.h.
Visual and cultural origins of Michelangelo’s sculpture, painting, and architectural designs; role that Michelangelo and his work played as a visual artist, poet, and religious reformer in culture of Florence and Rome in the 16th century; reasons for Michelangelo being a dynamic influence in all of the arts through the contemporary period.

**ARTH:3530 The World of Giotto and Dante** 3 s.h.
Painting, sculpture, and architecture 1250-1400.

**ARTH:3550 Leonardo, Raphael, and Their Contemporaries** 3 s.h.
The arts in Italy 1485-1550.

**ARTH:3630 Themes in Renaissance Art** 3 s.h.
Themes and topics in Renaissance art.

**ARTH:3640 The Artist in the Studio: Allegory and Reality from Renaissance to Modern** 3 s.h.
Changing needs of a growing modern secular leisure class, demonstrated in works of art that depict artists at work in their own environment and the popularity of artist’s self-portraits; significance of subject category in understanding changes in perception of social, economic, and political roles of visual artists and visual arts traced from Leonardo, Michelangelo, and Raphael to Velasquez, Rubens, Rembrandt, Vermeer, Picasso, Matisse and others; literary, musical, and theatrical arts.

**ARTH:3650 Seventeenth-Century Dutch and Flemish Painting** 3 s.h.
Painting in the age of Rubens, Rembrandt, Vermeer; rise of landscape, still life, genre.

**ARTH:3700 David to Delacroix: Art in the Age of Revolutions** 3 s.h.
Developments in French art and culture in a period of artistic, cultural, and political upheavals from French Revolution through Napoleonic Empire to founding of Second Empire in mid-19th century; intersections of art with aesthetics, culture, and politics; role of psychology, biology, natural sciences in art; use of myth; rise of modernism; changes in patronage; new role of museums and galleries; innovations in printmaking, book illustration, caricature; artists include David, Girodet, Gros, Ingres, Gericault, and Delacroix, among others.

**ARTH:3720 The Romantic Revolution** 3 s.h.
Transformations in European art and culture 1750-1850, an age of artistic, political, cultural, intellectual crisis and revolutions; major artists, including David, Ingres, Gericault, Delacroix, Goya, Freidrich, Constable, Turner.

**ARTH:3730 Realism, Impressionism, Post-Impressionism** 3 s.h.
Naturalism, Realism, the Impressionist landscape, painting of modern life, new trends in subjectivity and exoticism mid- to late-19th-century European art and culture; Courbet, Manet, Degas, Monet, Renoir, Seurat, Cezanne, Van Gogh, Gauguin, Ensor, Munch.
ARTH:3740 Manet to Matisse 3 s.h.
Development of modernism and the avant-garde in late 19th- and early 20th-century Paris; intersection of innovation and tradition, literature and art; role of theory and criticism in works of Manet, Degas, Seurat, Cezanne, Gauguin, Rodin, Matisse, and Picasso.

ARTH:3820 Modern Art 3 s.h.
Development of modern art from early years of 20th century through 1960s; focus on painting, sculpture, architecture, photography; traces progress of Modernism; exploration of major movements including Fauvism, Cubism, Surrealism, Abstract Expressionism, Pop Art, Minimalism.

ARTH:3830 Late Modern Art 3 s.h.

ARTH:3840 Contemporary Art 3 s.h.
Painting, sculpture, architecture, and photography; developments during late 1960s to present; conceptual art, performance art, neo-abstraction, and picture/theory art with each approached from a global perspective.

ARTH:3850 Pop Art 3 s.h.
Survey of pop art in America, Britain, Europe; focus on developments in painting and sculpture 1950s to early 1960s; continuing influence of Pop Art.

ARTH:3860 Minimalism 3 s.h.
Survey of Minimalism; focus on developments in painting and sculpture during 1960s; continuing influence.

ARTH:3864 Nazi and Stalinist Art: Aesthetics of Power 3 s.h.
Manipulative power of art, architecture, urbanism, and film in 20th-century totalitarian regimes—Italy, Germany, and Stalinist Soviet Union as well as Madrid, Warsaw, Beijing, Pyongyang, Baghdad; dark side of art and its transnational character, particularly in architecture and urban planning; nature of propaganda and state-sponsored art, responses to modernism and industrialization, allure of militarism and empire, uses of historicism, role of public ritual and mass spectacle in totalitarianism; common currency of totalitarian art across national groups, cultures, ideologies; how aesthetics function as tools of modern autocracies, with lessons for ailing 21st-century democracies.

ARTH:3870 African American Art and Architecture 3 s.h.
Visual and material culture of African Americans, including painting, sculpture, decorative arts, and film, examined from aesthetic and ideological perspectives.

ARTH:3880 American Print Culture 3 s.h.
Exploration of a wide range of imagery printed and published in the United States during 19th century (1776-1900); fine art original prints, popular imagery in periodicals and illustrated books, scholarly literature, history of evolving technologies, variety of printed work; shifting reputation of printed art and its makers.

ARTH:3895 Independent Study in Art History 3 s.h.
Varied topics.

ARTH:4010 Critical Theory 3 s.h.
Influence of art theory on recent art practice; critics and philosophers whose ideas have been particularly important to the process of putting art and its histories into greater social and political context—Theodor Adorno, Walter Benjamin, Roland Barthes, Jacques Derrida, Michel Foucault, Jean-Francois Lyotard, Jurgen Habermas, Jean Baudrillard, Terry Eagleton, Michael Fried, T.J. Clark, Rosalind Krauss, and Homi Bhabha; general influence of feminism, poststructuralism, postcolonialism, and postmodernism.

ARTH:4040 Art, Law, and Ethics 3 s.h.
How law and ethics apply to individuals and institutions concerned with the visual arts. Same as LAW:8163.

ARTH:4081 The Art Museum: Theory and Practice 3 s.h.
Introduction to different aspects of art museums; emphasis on roles of art historians, especially curatorial practice; current and historical theories and practices of art exhibitions; varying debates of the politics of display; art museum professions; the many facets of art exhibition preparation; the University of Iowa Museum of Art collections. Same as MUSM:4081.

ARTH:4891 Big-Shouldered City: Chicago Architecture 3 s.h.
Architectural and urban development of Chicago; how changing visions of this most-American of cities has been influenced by aesthetic, social, political, economic factors; early settlement patterns, impact of the Great Fire of 1871, skyscraper technology, Daniel Burnham’s 1909 Plan, Bungalow Belt, park system; larger history of American city in terms of its architectural, urban, and landscape development.

ARTH:4941 American Landscape Art 3 s.h.
Landscape from 1750 to present, emphasis on 19th century; land and its use fundamental to the history and culture of the United States as American art subjects, American art in the period of territorial expansion in 19th century; major movements of landscape aesthetics, artistic treatments, historiography.

ARTH:4999 History and Methods 3 s.h.
Critical thinking and research; readings in historical development of the discipline, from Renaissance to present; methodological issues. Offered fall semesters.

Art History, Graduate

ARTH:6000 History and Methods 3 s.h.
Critical thinking and research; readings in historical development of the discipline, from Renaissance to present; methodological paradigms and trends.

ARTH:6020 Art History Colloquium 1 s.h.
Current topics and research in art history. Requirements: art history graduate standing.

ARTH:6040 Directed Studies arr.

ARTH:6080 M.A. Written Thesis arr.

ARTH:6085 Seminar: Problems in Architectural History 3 s.h.
Key themes, architects, and literature that informs the history of the built environment in varied cultural contexts.

ARTH:6110 Seminar: Problems in African Art 2-3 s.h.

ARTH:6300 Seminar: Problems in Ancient Art 3 s.h.
Key themes and issues in ancient art. Same as CLSA:6200.

ARTH:6440 Seminar: Problems in Medieval Art 3 s.h.
Major issues, methodologies.

ARTH:6640 Seminar: Problems in Baroque Art 3 s.h.

ARTH:6740 Graduate Seminar: Nineteenth-Century Art 3 s.h.

ARTH:6840 Seminar: Modern/Contemporary Art 3 s.h.
Major issues, methodologies.

ARTH:6940 Seminar: Problems in American Art 3 s.h.

ARTH:7010 Ph.D. Readings arr.


Studio Art

Courses numbered below 3000 are primarily for undergraduates and may not be repeated unless noted on ISIS. Some courses numbered 2000-3000 are repeatable. Courses ARTS:1510 Basic Drawing and ARTS:1520 Design Fundamentals are prerequisites for all studio courses for art majors.

Animation, Lower-Level Undergraduate

ANIM:2125 Introduction to Animation 3 s.h.
Introduction to animation and its role in contemporary creative practice; focus on historical and technical principles of traditional 2-D animation, 2-D digital animation, and 3-D computer animation; creative, conceptual, and technical facets of animation practice; conceptualize and execute animations using processes and methods currently integrated into contemporary time-based art practice. Prerequisites: ARTS:1510 and ARTS:1520.

Animation, Upper-Level Undergraduate and Graduate

ANIM:3125 Animation I 4 s.h.
Continuation of ANIM:2125; focus on technology of 3-D animation; 3-D modeling, texturing, animation, rendering and lighting; projects cover creative, conceptual, and technical facets of 3-D animation pipeline; conceptualize and execute projects using processes and methods currently integrated into 3-D animation industry through lectures, critiques, computer software, screenings, and labs. Prerequisites: ANIM:2125.

ANIM:3130 Professional Practices in Animation and Gaming Studios 2 s.h.
Experiential learning experience through immersion in professional animation and gaming studios that blend technology, art, and design; behind-the-scenes meetings with professionals, equipment, and processes involved in creating major animated and video game works; studio and museum visits to gain understanding of technology and art, professional studio culture, and innovative design; animation history, studio culture, entertainment artistry, art technology, and contemporary art. Prerequisites: ARTS:1510 and ARTS:1520.

ANIM:3135 Animation II 4 s.h.
Continuation of ANIM:3125; focus on technology of 3-D animation; 3-D modeling, texturing, animation, rendering and lighting; projects cover creative, conceptual, and technical facets of 3-D animation pipeline; students conceptualize and execute projects using processes and methods currently integrated into 3-D animation industry through lectures, critiques, computer software, screenings, and labs. Prerequisites: ANIM:3125.
General Art, Lower-Level Undergraduate

**ARTS:1000 First-Year Seminar** 1 s.h.
Small discussion class taught by a faculty member; topics chosen by instructor; may include outside activities (e.g., films, lectures, performances, readings, visits to research facilities). Requirements: first- or second-semester standing.

**ARTS:1001 CLAS Master Class** 1-3 s.h.
Exploration of a single topic in a series of lectures by faculty presenting divergent perspectives; illuminates intellectual adventure inherent in liberal arts and sciences; encourages discovery of majors and other areas of study within the College of Liberal Arts and Sciences. Same as CLAS:1001, RELS:1010, THTR:1001, CS:1001, CSD:1001, PHIL:1001, ENGL:1001, BIOL:1001.

**ARTS:1010 Elements of Art** 3 s.h.

**ARTS:1020 Elements of 3-D Design** 3 s.h.
Introduction to 3-D design using drafting, modeling, and virtual reality software; basic concepts of drafting, planning, and color theory; basic Auto CAD, 3ds Max Studio, Vizard, InDesign software; students design an object to be printed 2-D and 3-D and a conceptual space to be printed 2-D and experienced virtually; student journal and portfolio. Requirements: non-art major.

**ARTS:1030 Elements of Jewelry and Metal Arts** 3 s.h.
Fundamental 3-D design principles and appreciation of contemporary jewelry and metal art works; techniques and materials in jewelry and metal arts; experimentation with diverse media. Requirements: non-art major. GE: Literary, Visual, and Performing Arts.

**ARTS:1040 Elements of Media Art** 3 s.h.
Introduction to production, history, and aesthetics of video and moving-image art; demonstrations, workshops, screenings, critiques; shooting and editing two production projects. Requirements: non-art major.

**ARTS:1050 Elements of Printmaking** 3 s.h.
Requirements: non-art major. GE: Literary, Visual, and Performing Arts.

**ARTS:1055 Elements of Foil Imaging** 3 s.h.
Printmaking experience using the Iowa Foil Printer; aesthetic and technical research, documentation in *Foil Imaging...A New Art Form*; hands-on opportunity to explore new dimensions of visual expression. Requirements: non-art major.

**ARTS:1060 Elements of Digital Photography** 3 s.h.
Introduction to history, aesthetics, and practice of photography as a fine art; includes demonstrations, workshops, critiques, final portfolio; photography time outside of class; digital camera required. Requirements: non-art major.
ARTS:2000 Creativity for a Lifetime 3 s.h.
Exploration of what senior artists can teach about creativity and aging; interdisciplinary project-based collaborative learning opportunities that consider role of arts and creativity across a lifespan; essential skills necessary to be professionals in numerous careers including health, social work, education, humanities, and the arts; integration of teamwork and opportunities for individual growth that allow for personal development; identification of ways for students to be more creative in their own lives and work. Same as ASP:2000, RHET:2000, EDTL:2000.

General Art, Upper-Level Undergraduate and Graduate

ARTS:3230 Scene Design I 3 s.h.
Development of theatre scenery; how to research, conceptualize, and express ideas in 3-D models, simple sketches, and drafting. Same as THTR:3230.

ARTS:3320 Introduction to Sequential Art: Comics/Graphic Novels 3 s.h.
Overview of contemporary American comic artists, history of comics and graphic novels in the United States; genres and structures in sequential art; students create works that combine design, images, texts, story. Requirements: satisfaction of rhetoric requirement.

ARTS:3400 Grant Writing in the Arts 3 s.h.

ARTS:4190 Honors in Studio Art 0-3 s.h.
Research, preparation, and exhibition of an honors project in studio art. Requirements: studio art major, UI g.p.a. of at least 3.33, and art g.p.a. of at least 3.50.

ARTS:4195 B.F.A. Exhibition 0 s.h.
B.F.A. students present a show of their work in final semester; use of flyers and other media to advertise show; meetings with faculty and academic advisors to complete required documentation; students planning to graduate with honors in the art major may combine honors project and B.F.A. show; variations require approval by B.F.A. faculty advisor and academic advisors. Requirements: B.F.A. standing in final semester.

ARTS:4200 Topics in Studio Arts 1-3 s.h.

ARTS:4390 Book and Publication Design 3 s.h.
Students plan, design, and produce a book using Adobe Creative Suite; page layout software, typography, page layout and design, book formatting, handling of image files, preparation of materials for print and other contemporary book media; history of book design, book design in contemporary publishing; visit to University of Iowa Libraries Special Collections. Prerequisites: UICB:4300 or DSGN:3120. Same as UICB:4390.

General Art, Graduate

ARTS:5330 Letterpress III: Imagemaking arr.
Builds on skills acquired in UICB:4300 and UICB:4380; advanced work in fine press book design and image-making processes for fine press printing. Prerequisites: UICB:4380. Same as UICB:5330.

ARTS:5340 Letterpress III: The Handprinted Book 3 s.h.
Exploration of problems in hand-printing books—choice of manuscript, editing, design, typesetting, proofreading, printing and binding; histories of printing and of the book, emphasis on 20th- and 21st-century book design and literature. Prerequisites: UICB:4380. Same as UICB:5340.

ARTS:6000 M.A. Written Thesis 1 s.h.

ARTS:6190 Graduate Independent Study arr.
Individual instruction by a faculty member.

ARTS:7000 M.F.A. Written Thesis 1 s.h.

Ceramics, Lower-Level Undergraduate

CERM:2010 Exploring Forms in Clay I 3 s.h.

CERM:2020 Exploring Thrown Forms in Clay II 3 s.h.
Basic wheel-throwing techniques; clay, glaze formulation and preparation in kiln firing. Prerequisites: CERM:2010.

Ceramics, Upper-Level Undergraduate and Graduate

CERM:3010 Advanced Clay Forming III 4 s.h.
Advanced throwing techniques; larger scale, more professional goals; projects may be more sculptural or one of a kind. Offered fall semesters. Prerequisites: CERM:2010 and CERM:2020.

CERM:4010 Advanced Clay Forming IV 4 s.h.
Advanced individual projects. Offered spring semesters. Prerequisites: CERM:2020 or CERM:3010.
CERM:4020 Ceramic Materials and Effects 4 s.h. Empirical, practical methods of glaze and body formulation; effects of various types of kilns and firing atmospheres on glaze materials, clay bodies; digital imaging used for testing and documenting results. Offered fall semesters of even years. Prerequisites: CERM:3010.

CERM:4030 Undergraduate Ceramics Workshop 3-4 s.h. Advanced undergraduate studio; critiques of student work and electronic portfolio development, visiting artist participation; may include field trips. Prerequisites: CERM:4010.

CERM:4040 Kiln Building 4 s.h. Kiln theory, design, construction methods; may include participation in kiln construction. Offered fall semesters of odd years. Prerequisites: CERM:3010.

CERM:4050 Concepts: Materials and Installation 4 s.h. Exposure to contemporary methods of working in clay, develop critical thinking skills that move clay into the realm of conceptual work, develop a personal direction in the medium; conceptual development and material exploration; set clay side by side with other materials and mediums; demonstrate dedication to the work and to the development of mature ideas and forms of expression. Prerequisites: CERM:3010.

CERM:4099 Undergraduate Individual Instruction 1-3 s.h. Individual instruction in ceramics for advanced students.

CERamics, Graduate

CERM:6075 Ceramics Workshop 3-4 s.h. Advanced graduate studio; critique of student work; visiting artists, field trips. Prerequisites: CERM:4010.

CERM:6099 Graduate Individual Instruction in Ceramics arr. Requirements: knowledge of clay and glaze computation, and ability to fire kilns.

Design, Lower-Level Undergraduate

Courses ARTS:1510 Basic Drawing and ARTS:1520 Design Fundamentals are prerequisites for all design courses for art majors; ARTS:1510 Basic Drawing is prerequisite for nonmajors.

DSGN:2110 Graphic Design I 3 s.h. Basic principles, techniques, and applications of graphic design, typography, composition, visual perception; creative, problem-solving aspects of graphic design. Prerequisites: ARTS:1510 and ARTS:1520.

Design, Upper-Level Undergraduate and Graduate

DSGN:3110 Graphic Design II 4 s.h. In-depth study and exploration of graphic design as creative and problem solving tool of visual communication; translation of ideas and concepts into comprehensible visual language. Prerequisites: DSGN:2110 and DSGN:3120.

DSGN:3120 Typography 4 s.h. Introduction to letterform and typographic fundamentals; designing with type—attention to composition, hierarchy, historical practice. Corequisites: DSGN:2110, if not taken as a prerequisite. Same as UICB:3310.

DSGN:3130 Web Site Design I 3 s.h. Designing for the World Wide Web; composition, manipulation, organization of type and images; projects, demonstrations, discussions. Prerequisites: DSGN:2110 and DSGN:3120.

DSGN:4110 Graphic Design III 4 s.h. Continuation of DSGN:3110; graphic design knowledge and skills applied to complex design problems such as visual identity, packaging, information design. Prerequisites: DSGN:3110 and DSGN:3130.

DSGN:4130 Web Site Design II 4 s.h. Continuation of DSGN:3130; in-depth exploration and study of graphic design principles and their application in online and interactive media; further development of HTML, CSS, other related technologies. Prerequisites: DSGN:3110 and DSGN:3130. Corequisites: DSGN:4110 or DSGN:4140, if not taken as prerequisites.

DSGN:4140 Problems in Graphic Design 4 s.h. Design topics; content varies. Prerequisites: DSGN:2110 and DSGN:3110 and DSGN:3120.

DSGN:4199 Undergraduate Individual Instruction 1-3 s.h. Individual instruction in design for advanced students.

Design, Graduate

DSGN:6175 Graduate Graphic Design Workshop 4 s.h. Complex problems in graphic design; planning, development, organization of integrated design programs.

DSGN:6299 Individual Instruction in Design arr.

Three-Dimensional Design, Lower-Level Undergraduate

TDSN:2205 Art and Engineering 3 s.h. Collaborative, interdisciplinary, cutting-edge opportunity to gain real world engineering experience while learning to think creatively and analytically to create engaging works of art; interdisciplinary collaboration and creative methodologies that enhance life-long creative practice of artists and engineers; basic electronics and Arduino prototyping platform to create programmable, sensor-driven, responsive circuits. Prerequisites: TDSN:2210 or CERM:2010 or MTLS:2910 or SCLP:2810. Same as ECE:2120.

TDSN:2210 Problems in 3-D Design 3 s.h. Materials, their formal and structural possibilities. Prerequisites: ARTS:1510 and ARTS:1520.

TDSN:2230 Introduction to Portfolio Design 3 s.h.
Preparation of presentation boards and portfolio production for print and job application; for students in 3-D design and related areas. Prerequisites: ARTS:1510 and ARTS:1520.

**TDSN:2240 Digital Drafting with AutoCAD** 3 s.h.
Basic principles of 2-D and 3-D computer-aided drafting; use of AutoCAD software to draw plans, elevations, and sections for objects and interior spaces. Prerequisites: (ARTS:1510 and ARTS:1520) and (TDSN:2210 or CERM:2010 or MTLS:2910 or SCLP:2810). Same as CEE:2240.

**TDSN:2250 Computer Modeling with 3ds Max** 3 s.h.
Basic knowledge and practical technical skills using 3ds Max studio software; experience creating and manipulating basic forms and working with texture, background, light, and camera viewpoints; basic animation. Prerequisites: TDSN:2210 and ARTS:1510 and ARTS:1520.

**TDSN:2260 Introduction to Virtual Reality for 3-D Design** 3 s.h.
Introduction to Vizard software; design of virtual 3-D space; translation of environments created in 3ds Max software into Vizard software. Corequisites: TDSN:2250, if not taken as a prerequisite.

**TDSN:2270 Digital Forming** 3 s.h.
Introduction to process of design; work with 3-D virtual digital tools to create objects and forms printed with rapid prototyping technology; use of Leonar3Do software, 3-D glasses, and a bird device that functions as a mouse to create forms in space; virtual modeling techniques that allow creation and manipulation of shapes in the air; design development on Leonar3Do, improved with 3ds Max, and saved for 3-D printing. Prerequisites: ARTS:1510 and ARTS:1520 and (TDSN:2210 or CERM:2010 or MTLS:2910 or SCLP:2810).

**Three-Dimensional Design, Upper-Level Undergraduate and Graduate**

**TDSN:3200 Product Design** 4 s.h.
How objects are designed and structured; modeling, graphic skills necessary for basic project development. Prerequisites: TDSN:2210.

**TDSN:3201 Advanced Computer Modeling with 3ds Max** 3 s.h.
Creation of rendered and animated environments using advanced modeling techniques. Prerequisites: TDSN:2250.

**TDSN:3205 Advanced Robotics** 3 s.h.
Advanced peripheral integration and control, including stepper motors, solar power, audio playback, and live data manipulation through physical sensors; advanced fabrication (e.g., printed circuit boards and wiring harness design); for students with previous experience in robotics and electronics. Prerequisites: SCLP:3840.

**TDSN:3210 Furniture Design I** 4 s.h.
Human interaction with interior and exterior environment. Prerequisites: TDSN:2210. Same as THTR:3206.

**TDSN:3215 Furniture Design II** 4 s.h.
Continuation of TDSN:3210; design of virtual environments. Prerequisites: TDSN:3210.

**TDSN:3220 Interior Design** 4 s.h.
Relationship of interior space to its architecture, environment, human element; color, materials, furnishings, lighting; projects. Prerequisites: TDSN:2210.

**TDSN:3230 Color for Interior Design** 4 s.h.
Use of color for interior spaces; principles of color theory reviewed and applied to 3-D environments; color as a compositional element and psychological tool. Prerequisites: TDSN:2210.

**TDSN:3240 3-D Computer-Aided Design** arr.
Three-dimensional computer-aided drafting; use of AutoCAD software. Prerequisites: ARTS:1510 and ARTS:1520 and (TDSN:2210 or CERM:2010 or MTLS:2910 or SCLP:2810).

**TDSN:4210 Digital Animation and Visual Art** 3 s.h.
Assimilation of digital animation into realm of traditional fine art mediums; exploration of fundamental skills (storyboarding, rotoscoping, stop motion, motion graphics, 3-D animation); Adobe Photoshop, After Effects, and 3ds Max techniques and software that are industry standards in the careers of animators, storyboard artists, roto artists, digital compositors, and motion graphic artists; production of a show reel of student work for group showing and final critique. Prerequisites: ARTS:1510 and ARTS:1520.

**TDSN:4220 Interior Design II** 3 s.h.
Continuation of TDSN:3220. Offered fall semesters of even years. Prerequisites: TDSN:2240 and TDSN:3220.

**TDSN:4250 Fabrication and Design: Hand-Built Bicycle** 4 s.h.
Building a bicycle frame by hand; use of CAD modeling and development of fabrication skills to create a modern-day work of art. Prerequisites: TDSN:2240.

**TDSN:4255 Hand-Built Bicycles in the Rockies** 1 s.h.
Building a titanium hand-built bike; use of hand-built fabrication techniques and tools; translation of CAD design into first full-suspension titanium fat bike; aspects of metal technology, concept development, fabrication geometry and design, metal properties and selection, tool selection, brazing and TIG welding, jig setup and use, and mitering; travel to Fort Collins, Colorado to work for one week at Black Sheep Bikes (two-time winner of the North American Hand Built Bike Show). Prerequisites: ARTS:1510 and ARTS:1520.
**TDSN:4260 3-D Computer Graphic Art** 3 s.h.
Three-dimensional modeling; emphasis on movement in form and function; advanced modeling techniques in polygonal and NURBS modeling to generate fundamentally sound models used for rapid prototyping, visualization, and animation; Box modeling, NURBS modeling, rigging, materials, bump maps, normal maps, and rendering; fundamental skills of computer graphic artists working in the fields of animation; architectural visualization, video game modeling, industrial design, and engineering design. Prerequisites: TDSN:2250.

**TDSN:4270 Problems in 3-D Design: Locative Art Practice** 4 s.h.
How our relationship to Earth has changed with new forms of locating place in it; new forms of representation used to express exploration of that relationship; designing a locative research project; exploration of four major course concepts (geo-annotation, locative inscription, GPS drawing, alternative cartography) using portable, networked, and location-aware computing for mapping relationships. Prerequisites: ARTS:1510 and ARTS:1520.

**TDSN:4299 Undergraduate Individual Instruction** 1-3 s.h.
Individual instruction in 3-D design for advanced students.

**Three-Dimensional Design, Graduate**

**TDSN:6295 Design for Production and Business** 4 s.h.
Special issues and topics in design.

**TDSN:6299 Individual Instruction in 3-D Design** arr.
Individual instruction in 3-D design for advanced students.

**Drawing, Lower-Level Undergraduate**

**DRAW:2310 Life Drawing I** 3 s.h.
Observational drawing of form in its spatial contexts; drawing in varied media; figural as well as nonfigural content. Prerequisites: ARTS:1510 and ARTS:1520.

**Drawing, Upper-Level Undergraduate and Graduate**

**DRAW:3310 Concepts in Drawing** 3-4 s.h.
Intermediate-level topics; observation, theory, media, form, content; emphasis on personal direction. Prerequisites: DRAW:2310. Same as THTR:3205.

**DRAW:4310 Advanced Concepts in Drawing** 3-4 s.h.
Advanced-level topics. Requirements: DRAW:3310 taken two times.

**DRAW:4320 Seminar in Painting and Drawing** 3-4 s.h.
Contemporary issues, practical and professional skills, interdisciplinary concerns, education and career goals. Offered fall semesters. Requirements: for undergraduate students — DRAW:3310; PNTG:2420 taken twice, or PNTG:2420 and PNTG:2430; and B.F.A. clearance.

**DRAW:4399 Undergraduate Individual Instruction** 1-3 s.h.
Individual instruction in drawing for advanced students.

**Drawing, Graduate**

**DRAW:6310 Graduate Drawing** 3-4 s.h.
Compositional and conceptual drawing as related to the student’s major interest; varied media. Requirements: 6 s.h. of DRAW:3310.

**DRAW:6399 Individual Instruction in Drawing** arr.

**Intermedia, Lower-Level Undergraduate**

Courses ARTS:1510 Basic Drawing and ARTS:1520 Design Fundamentals are prerequisites for all intermedia courses for art majors; ARTS:1510 Basic Drawing is prerequisite for nonmajors.

**INTM:2710 Introduction to Intermedia** 3 s.h.
Interdisciplinary focus; emphasis on conceptual, installation, video, time-based media, performance art. Prerequisites: (ARTS:1510 and ARTS:1520) or CINE:1834. Requirements: for CINE:2869 — grade of C or higher in CINE:1834. Same as CINE:2869.

**INTM:2720 Concepts in Contemporary Art Practice** 3 s.h.
Interdisciplinary investigation of materials and concepts in relation to time-based media, performance, video, installation; individual and collaborative projects. Prerequisites: INTM:2710.

**INTM:2730 Topics in Intermedia** 3 s.h.
Continuation of study and practice in emerging media and new genres, including video, Internet art, installation, new media, and social practice. Requirements: ARTS:1510 and ARTS:1520 for majors; ARTS:1510 for nonmajors.

**INTM:2864 Film/Video Production: Alternative Forms** 3 s.h.
Alternative or innovative video/film practices and technologies; varied topics. Prerequisites: CINE:1834 or INTM:2710. Requirements: for CINE:2864 — grade of C or higher in CINE:1834; for INTM:2864 — grade of C or higher in INTM:2710. Same as CINE:2864.
Intermedia, Upper-Level Undergraduate and Graduate

**INTM:3720 Media Art Lab** 4 s.h.
Study and production in the media arts—digital video, sound, installation/performance, Internet, new media art; conceptual development through readings, screenings; hands-on workshops using a range of media production equipment and platforms; in-class, short-term projects. Requirements: INTM:2710 or CINE:1834 or graduate standing. Recommendations: experience with media technologies.

**INTM:3730 Advanced Intermedia Topics** 3 s.h.
Areas of intermedia practice, including installation, video, Internet-based production, sound design, image and text, new media. Prerequisites: INTM:2710.

**INTM:3750 Art and Ecology** 4 s.h.
Collaborative, creative research group; artistic responses to environmental sustainability and related social issues; critical approaches rooted in humanities, other disciplines. Prerequisites: INTM:2710.

**INTM:3755 What is Storytelling For?** 4 s.h.

**INTM:3765 Social Practice, Social Issues, and the Arts** 3-4 s.h.
Student participation in internships at Iowa City and Johnson county nonprofit organizations; interdisciplinary seminar.

**INTM:3799 Undergraduate Individual Instruction** 1-3 s.h.
Individual instruction in intermedia for advanced students.

**INTM:4775 Intermedia Workshop** 3-4 s.h.
Visual practice/visual theory; projects, critiques, visiting artists and scholars. Requirements: INTM:2720 or graduate standing in intermedia.

**INTM:4780 Women's Lives in Alternative Texts** 3 s.h.
Work of contemporary comics creators; how they craft memoir-based texts that explore intersections of aging, sexuality, race, gender, and relationships. Same as GWSS:4180.

Intermedia, Graduate

**INTM:6780 Art, Engagement, and Activism** 4 s.h.
Role of artists in our communities; how to build a rewarding studio practice and influence social, political, and cultural decisions within the community; work of artists, designers, creative scholars, performers, and writers whose work is socially engaged, collaborative, labeled as radical or activist in nature; students produce a small body of written, visual, and performed work influenced by events and needs within their communities; examination and discussion of various theories of art, activism, performance, and engagement.

**INTM:6795 Intermedia Graduate Special Topics** 3-4 s.h.
Areas of intermedia practice, including installation, video, Internet-based production, sound design, image and text, new media.

**INTM:6799 Individual Instruction in Intermedia and Video Art** arr.

Jewelry and Metal Arts, Lower-Level Undergraduate

**MTLS:2910 Introduction to Jewelry and Metal Arts** 3 s.h.
Fabrication, hammer forming, hydraulic die forming, soldering, riveting, etching, texturing, anodization of aluminum and titanium, stone setting, and patination techniques; creation of jewelry, flatware, and other functional and nonfunctional sculptural objects using varied metals and other materials; emphasis on creativity, learning, and basic metalworking techniques. Prerequisites: ARTS:1510 and ARTS:1520.

Jewelry and Metal Arts, Upper-Level Undergraduate and Graduate

**MTLS:3910 Intermediate Jewelry and Metal Arts** 4 s.h.
Exploration of different applications with casting (mostly gold, silver, and bronze), enameling, and stone setting; combining all three processes to create art work; may include introduction to other processes (e.g., photo-etching, 3-D computer modeling); historical and current trends in craft. Prerequisites: MTLS:2910.

**MTLS:3920 Advanced Jewelry and Metal Arts** 4 s.h.
Electroforming; production of hollow copper structures through prolonged electroplating on a nonmetallic form (typically wax) with a conductive coating; metal-forming techniques (e.g., raising and fold forming); emphasis on development of personal aesthetics, learning, and refining technical skills in metalworking and jewelry techniques. Prerequisites: MTLS:2910.

**MTLS:4910 Mixed Media Workshop** 3-4 s.h.
Free exploration of all media and materials, including found objects; creation of conceptual and/or functional mixed media objects, jewelry, sculptures, installation pieces; pioneering use of new materials, development of new techniques, creation of diverse innovative art works. Prerequisites: MTLS:2910. Recommendations: MTLS:2910 and MTLS:3920.

**MTLS:4920 Mold Making** 4 s.h.
All aspects of mold making, including plaster, rubber, and silicone. Prerequisites: ARTS:1510 and ARTS:1520 and (MTLS:2910 or CERM:2010 or SCLP:2810 or TDSN:2210).

**MTLS:4960 Form and Fabrication: The Hand-Built Bicycle Frame II** 4 s.h.
Building on TDSN:4250; advanced concepts of bicycle frame design and fabrication; concept development, fabrication geometry and design, metal properties and selection, tool selection, brazing and welding, including titanium-milling and how to build a frame jig; emphasis on applying fabrication skills while situating frame building project within context of a design problem. Prerequisites: TDSN:4250.

**MTLS:4975 Graduate Workshop**  
4 s.h.  
Independent studio work; personal aesthetics, conceptual and technical skills developed and refined; creation of work without boundaries of media; portfolios, exhibitions, professional goals. Prerequisites: MTLS:3910 and MTLS:3920 and MTLS:4910.

**MTLS:4999 Undergraduate Individual Instruction**  
1-3 s.h.  
Individual instruction in metalsmithing and jewelry for advanced students.

**Jewelry and Metal Arts, Graduate**  
**MTLS:6999 Individual Instruction in Metalsmithing and Jewelry**  
ar.  
Individual instruction in metalsmithing and jewelry for advanced students.

**Painting, Lower-Level Undergraduate**  
Courses ARTS:1510 Basic Drawing and ARTS:1520 Design Fundamentals are prerequisites for all painting courses for art majors; ARTS:1510 Basic Drawing is prerequisite for nonmajors.

**PNTG:2410 Painting I**  
3 s.h.  
Emphasis on observational painting, theory and development of pictorial ideas and skills. Prerequisites: ARTS:1510 and ARTS:1520.

**PNTG:2420 Painting II**  
4 s.h.  
Materials, techniques, beginning of a personal painting language through observation and imagination. Prerequisites: PNTG:2410.

**PNTG:2430 Painting III**  
4 s.h.  
Painting, with contemporary issues overlying study in materials and techniques; language and direction of personal painting. Prerequisites: PNTG:2420.

**PNTG:2440 Advanced Painting**  
4 s.h.  
Individual projects as they aid the realization of a personal vision. Prerequisites: PNTG:2420. Requirements: PNTG:2420 taken two times.

**Painting, Upper-Level Undergraduate and Graduate**  
**PNTG:4499 Undergraduate Individual Instruction**  
1-3 s.h.  
Individual instruction in painting for advanced students.

**Painting, Graduate**  
**PNTG:6475 Graduate Drawing and Painting Workshop**  
3-4 s.h.  
Group and individual criticism, team-taught.

**PNTG:6480 Graduate Drawing and Painting Forum**  
1 s.h.  
Problems and issues of contemporary artists.

**PNTG:6495 Graduate Painting: Topics**  
3-4 s.h.  
Individual painting projects in desired medium; topics vary.

**PNTG:6499 Individual Instruction in Painting**  
ar.  

**Papermaking, Lower-Level Undergraduate**  
**BKAT:2110 Introduction to Book Arts**  
3 s.h.  
Topics related to artist books, hand bookbinding, letterpress printing, papermaking, and lettering arts. Same as UICB:2110.

**Papermaking, Upper-Level Undergraduate and Graduate**  
**BKAT:3100 Papermaking**  
3 s.h.  
History, fundamental techniques of Western and Eastern hand papermaking; projects in traditional sheet forming, basic paper chemistry, paper coloring. Offered spring semesters. Same as UICB:3100.

**BKAT:3280 Elements of Book Art**  
3 s.h.  
Overview of book art process and techniques for nonmajors; introduction to traditional bookbinding skills, nontraditional book structures, and content development for artist books. Same as UICB:3280.

**BKAT:3380 Elements of Letterpress**  
3 s.h.  
Introduction to letterpress printing; metal type, relief printing, page layout, and basic typography; basic use of Vandercook Proof Press; experimentation with diverse letterpress techniques; for non-book art majors. Same as UICB:3380.

**BKAT:3400 Calligraphy: Foundational Hands**  
3 s.h.  
Fundamental calligraphic skills using Roman majuscule, Humanistic minuscule, Italic; basic layout and color theory incorporated into letter practice. Same as UICB:3400.

**BKAT:4100 Paperworks**  
3 s.h.  
Conceptual and methodological approaches to 2-D and 3-D paper works; creation of works that couple unique properties of paper-pulp medium with personal visual ideas and clarity of intent; contemporary issues in paper pulp, medium's relationship to larger art and craft contexts. Same as UICB:4100.

**BKAT:4205 Bookbinding I: Materials and Techniques**  
3 s.h.  
Hands-on introduction to materials and techniques commonly used in bookbinding. Same as UICB:4205.

**BKAT:4210 Boxes and Enclosures**  
3 s.h.  
Hands-on techniques for a variety of book enclosures; appropriateness, aesthetic issues concerning box design; Japanese wraparound case, drop-spine box, hinged and lidded boxes, slipcase; technical skill development. Prerequisites: UICB:4205. Same as UICB:4210.
BKAT:4220 Moveable/Sculptural Books  3 s.h.
Varied formats for moveable and/or sculptural books; history; readings, hands-on model making. Same as UICB:4220.

BKAT:4230 Pop-Up Book Structures  3 s.h.
Hands-on exploration of varied aspects of paper engineering for bookmaking; historical and modern models studied and executed. Prerequisites: UICB:4205. Same as UICB:4230.

BKAT:4270 Bookbinding II  3 s.h.
Builds on skills acquired in UICB:4205; projects to complete six bindings based on historical and contemporary models; sewing styles, board attachments, endband types; nonadhesive and case-bound structures, varied materials and binding styles, their effects on structure, aesthetic considerations, further development of solid binding skills; historical development of particular binding practices. Prerequisites: UICB:4205. Same as UICB:4270.

BKAT:4280 Artists' Books  3 s.h.
Exploration of the book as a form for artistic expression; emphasis on conceptual development; relationship between content, form, and structure; how a book's structure and design can enhance and integrate part of the work's meaning. Prerequisites: UICB:4205 or BKAT:4205. Same as UICB:4280.

BKAT:4400 History of Western Letterforms  3 s.h.
History of Western letterforms, with focus on tools, materials, techniques; the major hands, their place in history, their influence on modern times; creation of letterforms using appropriate tools; hands-on approach with emphasis on understanding rather than mastery. Same as UICB:4400.

BKAT:4490 Studies in Letter Arts  3 s.h.
Special topics and advanced projects in calligraphy and letter arts. Prerequisites: UICB:3400 or UICB:4400. Same as UICB:4490.

Papermaking, Graduate

BKAT:5110 Islamic/Asian Papermaking History and Technique  3 s.h.
History, technique, and aesthetics of traditional Islamic and Asian hand papermaking. Same as UICB:5110.

BKAT:5120 Western Papermaking History and Technique  3 s.h.
History and technique of traditional European hand papermaking and related aesthetics; students gain confidence in pursuing independent production of handmade papers or undertaking related research in their own particular areas of interest; fiber preparation, sheet forming, and drying/finishing methods; concurrent readings and discussions of related history and aesthetics; special projects selected by student with instructor approval. Same as UICB:5130.

BKAT:5170 Advanced Papermaking Production  3 s.h.
Independent Western- or Japanese-style projects undertaken at UICB Research and Production Paper Facility at Oakdale Campus under faculty guidance; plan, implement, and evaluate professional scale production runs using full-scale equipment. Prerequisites: UICB:5110 or UICB:5130 or BKAT:5110 or BKAT:5120. Same as UICB:5170.

BKAT:5180 Advanced Projects in Paper  3 s.h.
Advanced independent projects undertaken in a classroom setting; collaborative group discussions to plan, implement, troubleshoot, and evaluate student projects. Prerequisites: UICB:5110 or UICB:5130 or BKAT:5110 or BKAT:5120. Same as UICB:5180.

BKAT:5210 Bookbinding III  3 s.h.
Bookbinding structures based on historical and contemporary models; differences in various binding practices, how these differences affect function, why the styles developed; experience choosing appropriate structures for particular uses; emphasis on fine tuning skills and techniques required for advanced binding practices; sewn endbands, rounding and backing, sewing on varied supports, board attachments, and covering methods. Requirements: for UICB:5210 — UICB:4205 and UICB:4270; for BKAT:5210 — BKAT:4205 or BKAT:4270 or UICB:4205 or UICB:4270. Same as UICB:5210.

BKAT:5260 Studies in Bookbinding  3 s.h.
Topics related to hand bookbinding. Same as UICB:5260.

Photography, Lower-Level Undergraduate

Courses ARTS:1510 Basic Drawing and ARTS:1520 Design Fundamentals are prerequisites for all photography courses for art majors; ARTS:1510 Basic Drawing is prerequisite for nonmajors.

PHTO:2510 Beginning Digital Photography  3 s.h.
How to use digital technology to make high-quality color and black-and-white photographs from scanned film and digital files; basic photography skills, including exposure, bracketing, composition; how to use raw files to make large digital prints; color profiles for fine digital printing. Prerequisites: ARTS:1510 and ARTS:1520.

PHTO:2513 Digital Photographic Imaging  3 s.h.
Working knowledge of digital image-making techniques, including image capture, image building/editing, printing/output options, work with Photoshop on Macintosh computers.

Photography, Upper-Level Undergraduate and Graduate

PHTO:3510 Intermediate Darkroom  3-4 s.h.
Darkroom techniques, including film developing and printing; theory and practice of photography as fine art and cultural phenomenon; development of visual literacy, students' critical awareness of their work. Requirements: PHTO:2510 for majors; PHTO:2510 or PHTO:2513 for nonmajors.

PHTO:3520 Intermediate Photography Digital  3-4 s.h.
Digital photography including landscape, portrait, collage, still life, manipulated images; black-and-white and color printing; computer technology; history of photography in political and social issues. Prerequisites: PHTO:2510.

PHTO:4510 Advanced Photography 3-4 s.h.
Individual projects; development of personal vision. Prerequisites: PHTO:3510 or PHTO:3520.

PHTO:4545 Materials and Techniques 4 s.h.
Concepts and techniques, from reading contemporary topics to understanding and applying nontraditional photographic processes and digital imaging. Prerequisites: PHTO:3510 or PHTO:3520.

PHTO:4555 Advanced Digital Imaging 4 s.h.
Varied image editing programs, with focus on Photoshop and the web. Prerequisites: PHTO:3510 or PHTO:3520.

PHTO:4599 Undergraduate Individual Instruction 1-3 s.h.
Individual instruction in photography for advanced students.

PHTO:4665 Introduction to 4x5 4 s.h.
Use of a 4x5 camera to correct perspective, depth of field; large format printing, negative processes. Prerequisites: PHTO:3510.

Photography, Graduate
PHTO:6575 Graduate Photography Workshop 4 s.h.
Projects; group critiques; readings.

PRNT:6675 Graduate Print Workshop 3-4 s.h.
Contemporary issues in printmaking; emphasis on development of personal work and independent studio practice through group critiques; special research projects, work in all print media.
PRNT:6699 Individual Instruction in Printmaking

Sculpture, Lower-Level Undergraduate
Courses ARTS:1510 Basic Drawing and ARTS:1520 Design Fundamentals are prerequisites for all sculpture courses for art majors; ARTS:1510 Basic Drawing is prerequisite for nonmajors.

SCLP:2810 Undergraduate Sculpture I 3 s.h.
Basic sculptural concepts, processes, investigation of materials such as plaster, clay, wood; emphasis on developing formal language, acquiring basic skills; spatial, conceptual, technical issues. Prerequisites: ARTS:1510 and ARTS:1520. GE: Literary, Visual, and Performing Arts.

SCLP:2820 Undergraduate Sculpture II 3 s.h.
Continuation of SCLP:2810; form, materials, processes, woodcarving, welding, concrete carving and direct application; expanding concept development; contemporary sculptural formats, collaborative process. Prerequisites: SCLP:2810.

Sculpture, Upper-Level Undergraduate and Graduate

SCLP:3840 Introduction to Robotic Art Studio 4 s.h.
Exploration, design, and creation of interactive artworks, kinetic sculpture, robotic art, sound works, light art, and performance environments; application of basic electronics and mechanical techniques; use of programmable microcontroller Arduino. Prerequisites: ARTS:1510 and ARTS:1520 and (SCLP:2810 or CERM:2010 or MTLS:2910 or TDSN:2210).

SCLP:3895 Topics in Sculpture 4 s.h.
Projects, reading; specialized conceptual forms and issues in contemporary sculpture, such as public art, installation. Prerequisites: SCLP:2810.

SCLP:4825 Casting in Hot Metal 4 s.h.
Foundry work, wax working, mold making, and processes. Prerequisites: SCLP:2820 or MTLS:2910.

SCLP:4830 Motion and Mechanisms 4 s.h.
Inherent properties of kinetic art and challenges of integrating motion into object and installation; artists who work with motion-based artwork; mechanical fabrication, basic electricity, switching, control, and various types of motors and mechanisms that can add motion to art-making process; projects engaging conceptual and technical aspects of kinetic sculpture, may include custom fabricated and recycled components. Prerequisites: ARTS:1510 and ARTS:1520.

SCLP:4835 Electronic Objects and Spaces 4 s.h.
Aesthetic use of electronics to sequence and control motion, light, and sound; introduction to basic electronics through hands-on workshops and discussions; demonstrations on how to build an Arduino, integrated circuits, power supplies, soldering, prototyping, motors, sensors; projects integrating electronics with objects and spaces; artist screenings and critiques. Prerequisites: ARTS:1510 and ARTS:1520.

SCLP:4840 Air, Actuators, and Motors 4 s.h.
Introduction to wide range of motors, actuators, and air devices available for integration in art projects; various forms of motor control and necessary means to power these devices; DC and AC motors, stepper motors, solenoids, electro magnets, relays, pneumatics, inflatables, and other air-driven devices; development of a project utilizing one or more systems; examples and media demonstrations to show how artists and scientists employ these systems. Prerequisites: ARTS:1510 and ARTS:1520.

SCLP:4899 Undergraduate Individual Instruction 1-3 s.h.
Individual instruction in sculpture for advanced students.

Sculpture, Graduate

SCLP:6264 Graduate Sculpture Workshop 3-4 s.h.
Critique seminar with readings for graduate sculptors and nonsculpture graduate students.

SCLP:6899 Individual Instruction in Sculpture arr.

Art Education, Upper-Level Undergraduate and Graduate

ARTE:3143 Methods of Art Education in Elementary Schools 3-4 s.h.
Application of studio methods to teaching children in Saturday Children's Art Class Program. Same as EDTL:3143.

ARTE:6267 Seminar: Current Issues in Art Education 3-4 s.h.
Analysis of literature in art education and related disciplines. Same as EDTL:6267.
Asian and Slavic Languages and Literatures

Director, Division of World Languages, Literatures, and Cultures
- Russell Ganim

Chair, Department of Asian and Slavic Languages and Literatures
- Russell Ganim

Undergraduate majors: Asian languages and literature (B.A.); Russian (B.A.)

Undergraduate minors: Asian languages; Russian studies

Graduate degree: M.A. in Asian civilizations

Faculty: http://clas.uiowa.edu/dwllc/asll/people

Web site: http://clas.uiowa.edu/dwllc/asll

The Department of Asian and Slavic Languages and Literatures offers instruction in languages of Asia and eastern Europe as well as in the literatures, civilizations, and cultures of the regions. In addition to offering degree programs, the department welcomes undergraduate and graduate students from across the University to enroll in courses that complement their degree programs or satisfy their personal interests.

The department offers language study in Chinese, Czech, Hindi-Urdu, Japanese, Korean, Russian, and Sanskrit.

Undergraduate students in all majors may satisfy the World Languages requirement of the General Education Program (p. 313) with courses in Chinese, Czech, Hindi-Urdu, Japanese, Korean, Russian, or Sanskrit; see "Language for General Education" below. They also may get acquainted with Asia and Eastern Europe by taking any of the department's General Education Program courses on Asian humanities and on Russian and Slavic literature and culture, all taught in English. Entering students may take the department's First-Year Seminars, one on Asian culture and civilization, the other on Slavic culture and civilization.

The Department of Asian and Slavic Languages and Literatures is one of the academic units in the Division of World Languages, Literatures, and Cultures (p. 228).

Undergraduate Programs of Study
- Major in Asian languages and literature (Bachelor of Arts)
- Major in Russian (Bachelor of Arts)
- Minor in Asian languages
- Minor in Russian

The major in Asian languages and literature gives students the opportunity to develop advanced skills in an Asian language while they study the people, literatures, and cultures of Asia. Students choose one of four tracks: Chinese, Hindi, Japanese, or Sanskrit.

Students interested in Asian studies may add a second major in international studies with an emphasis in Asian studies; see International Studies (p. 415) in the Catalog. Many other disciplines work well as second majors for Asian languages and literature students, such as history, art history, political science, religion, sociology, journalism, business, and anthropology.

Graduates have found careers in education, government, communication, business, and other fields in the United States and abroad. The program also provides excellent background for advanced study in a variety of fields in the humanities and social sciences and for professional schools, such as law and business.

The Russian major trains students in both written and spoken Russian and in Russian literature, culture, and civilization. The department encourages students to pursue a second major (e.g., global health, history, linguistics, political science) and to develop their interests in related or complementary fields. Students interested in focusing on a broader interdisciplinary understanding of the region may earn a second major in International Studies (p. 415).

Training in Russian is often an important asset to careers in the natural and physical sciences, engineering, medicine, business, journalism, library and information science, and the social and military sciences. It also may be appropriate preparation for study of law or international relations as well as Slavic languages and literatures, comparative literature, and other humanistic disciplines.

Some governmental agencies are interested in job candidates who have advanced training in Russian; these agencies give preference to applicants who combine strong language proficiency with a well-rounded background in area studies. Students who develop an exceptional facility with the Russian language may pursue careers in literary and technical translation and interpretation.

Bachelor of Arts: Asian Languages and Literature

The Bachelor of Arts with a major in Asian languages and literature requires a minimum of 120 s.h., including 27-30 s.h. of work for the major. Students choose one of four tracks: Chinese, Hindi, Japanese, or Sanskrit.

Credit required for the major depends on choice of track; requirements for each track are listed below. Students must maintain a g.p.a. of at least 2.00 in all courses for the major and in all UI courses for the major. They also must complete the College of Liberal Arts and Sciences General Education Program (p. 313).

The amount of approved transfer credit that may be applied to the major varies by track; students should consult their advisors about courses taken at other institutions, including study abroad.

The major in Asian languages and literature requires the following work.

Chinese Track

The Chinese track requires a minimum of 30 s.h. of work for the major. Students must complete the following courses.

CHINESE LANGUAGE

Students must successfully complete CHIN:2101 Second-Year Chinese: First Semester and CHIN:2102 Second-Year Chinese: Second Semester (total of 10 s.h.) at the University of Iowa with a grade of C or higher, or
the equivalent, before they may enroll in the following required courses.

All of these:

- CHIN:3101-CHIN:3102 Third-Year Chinese: First Semester - Third Year Chinese: Second Semester (6 s.h.)
- CHIN:4101 Classical Chinese: First Semester (3 s.h.)

Advanced Chinese language—one of these:

- CHIN:5101 Fifth-Year Chinese: First Semester (3 s.h.)
- CHIN:5102 Fifth-Year Chinese: Second Semester (3 s.h.)
- CHIN:5103 Readings in Chinese Literature (3 s.h.)
- CHIN:5106 Individual Chinese for Advanced Students (arr.)

CHINESE LITERATURE AND CINEMA

One of these:

- CHIN:3202 Chinese Literature: Prose (3 s.h.)
- CHIN:3341 Chinese Literature: Poetry (3 s.h.)

One of these:

- CHIN:4203 Modern Chinese Writers (3 s.h.)
- CHIN:4206 Transnational Chinese Cinemas (3 s.h.)

CHINESE LITERATURE AND CULTURE

The following courses support the study of literature and culture. Courses that pertain to Chinese culture (the arts, history, literature, politics, religion, and translation) and to the methodology of literary or cultural students, and are cross-listed with the Department of Asian and Slavic Languages and Literatures or are offered by other departments, may be counted toward this requirement. Course content may vary by semester or instructor; students should consult their advisors for approval.

Two of these:

- ASIA:2602 Civilizations of Asia: China (3 s.h.)
- ASIA:4507 Topics in Asian Studies (arr.)
- CHIN:1504 Asian Humanities: China (3 s.h.)
- CHIN:1702 Chinese Popular Culture (3 s.h.)
- CHIN:3201 Workshop in Chinese Literary Translation (3 s.h.)
- CHIN:4204 The Literature of Daoism (3 s.h.)
- CHIN:5201 Seminar in Chinese Fiction (3 s.h.)
- CHIN:5202 Seminar in Chinese Literature (arr.)

Hindi Track

The Hindi track requires a minimum of 30 s.h. of work for the major. Students must complete the following courses.

Additional South Asian studies courses numbered 3000 or above, including 1-3 s.h. of independent study

A list of advanced South Asian studies courses numbered 3000 or above is available from the department.

Hindi track students are urged to fulfill the General Education Program (p. 313) Historical Perspectives or International and Global Issues requirement (3 s.h.) by completing HIST:2606/ASIA:2606 Civilizations of Asia: South Asia.

Japanese Track

The Japanese track requires 30 s.h. of work for the major. Students may apply a maximum of 12 s.h. of approved transfer credit toward track requirements. Those who are planning to study abroad should consult with their Japanese track advisors in advance to determine whether their planned course work abroad will be accepted toward track requirements.

The following courses are prerequisite to the Japanese track; students may not count credit earned in these courses toward track requirements.

JPNS:1001 First-Year Japanese: First Semester (5 s.h.)
JPNS:1002 First-Year Japanese: Second Semester (5 s.h.)
JPNS:2001 Second-Year Japanese: First Semester (4-5 s.h.)
JPNS:2002 Second-Year Japanese: Second Semester (4-5 s.h.)

Work for the Japanese track includes third-year and fourth-year Japanese, literature and translation, linguistics and advanced language studies, and cultural studies. Students must complete the following courses.

THIRD- AND FOURTH-YEAR JAPANESE

Both of these sequences (12 s.h.):

JPNS:3001-JPNS:3002 Third-Year Japanese I-II (6 s.h.)
JPNS:4001-JPNS:4002 Fourth-Year Japanese I-II (6 s.h.)

LITERATURE AND TRANSLATION

Three of these (9 s.h.):

JPNS:3201 Workshop in Japanese Literary Translation (3 s.h.)
JPNS:3202 Traditional Japanese Literature in Translation (3 s.h.)
JPNS:3203 Modern Japanese Fiction in Translation (3 s.h.)
JPNS:3204 Topics in Japanese Literature in Translation (3 s.h.)
JPNS:3205 Major Authors in Modern Japanese Literature (3 s.h.)
JPNS:3206 Warriors Dreams (3 s.h.)
JPNS:3208 Japanese Film (3 s.h.)
JPNS:3210 Japanese Theater (3 s.h.)
JPNS:3601 Contemporary Japanese Culture (3 s.h.)
JPNS:4201 The Tale of Genji (3 s.h.)

LINGUISTICS AND ADVANCED LANGUAGE STUDIES

At least 6 s.h. from these:
CULTURAL STUDIES
Students complete one course (3 s.h.) chosen from the following lists.

Asian and Slavic languages and literatures:
JPNS:1506 Asian Humanities: Japan 3 s.h.
JPNS:3135 Postmodern Aesthetics and Japanese Culture 3 s.h.

Anthropology:
JPNS:2175 Japanese Society and Culture 3 s.h.

Art history:
JPNS:2250 Introduction to the Art of Japan 3 s.h.
JPNS:3260 Japanese Painting 3 s.h.

History:
JPNS:4610 Japan—Age of the Samurai 3 s.h.
JPNS:4615 Modern Japan 3 s.h.
JPNS:4620 Japan-US Relations 3 s.h.

Religious studies:
JPNS:1115 Japanese Religions 3 s.h.
JPNS:3660 Japanese Religion and Thought 3 s.h.

World languages, literatures, and cultures:
JPNS:3700 Topics in Global Cinema 3 s.h.

Sanskrit Track
The Sanskrit track requires a minimum of 27 s.h. for the major. Students must complete the following courses.

SOAS:4201-SOAS:4202 Third-Year Sanskrit: First Semester - Third-Year Sanskrit: Second Semester (students may substitute 6 s.h. of South Asian studies courses numbered 3000 or above, with the approval of their major advisors) 6 s.h.

Additional South Asian studies courses numbered 3000 or above, including 1-3 s.h. of independent study 15 s.h.

A list of advanced South Asian studies courses numbered 3000 or above is available from the department.

Sanskrit track students are urged to fulfill the General Education Program (p. 313) Historical Perspectives or International and Global Issues requirement (3 s.h.) by completing HIST:2606/ASIA:2606 Civilizations of Asia: South Asia.

Bachelor of Arts: Russian
The Bachelor of Arts with a major in Russian requires a minimum of 120 s.h., including 32 s.h. of work for the major earned in Russian courses. Students must maintain a g.p.a. of at least 2.00 in all courses for the major and in all UI courses for the major. They also must complete the College of Liberal Arts and Sciences General Education Program (p. 313).

The major in Russian requires the following courses.

Language—one of these:
SLAV:3113 Beginning Composition and Conversation I 4 s.h.
SLAV:3114 Beginning Composition and Conversation II 4 s.h.

Language—both of these sequences:
SLAV:3111-SLAV:3112 Third-Year Russian I-II 8 s.h.
SLAV:4111-SLAV:4112 Fourth-Year Russian I-II 8 s.h.

Russian and East European culture—four of these:
SLAV:1131 Introduction to Russian Culture 3 s.h.
SLAV:1132 Russia Today 3 s.h.
SLAV:1450 Diversities of Eastern Europe: Culture, Art, and Politics 3 s.h.
SLAV:1500 Ukraine, a Country at the Crossroads: An Interdisciplinary Seminar on Ukrainian History and Culture 3 s.h.
SLAV:1531 Slavic Folklore 3 s.h.
SLAV:1532 Religion and Culture of Slavs 3 s.h.
SLAV:2100 Secrets of Russian Mentality 3 s.h.
SLAV:2131 Women in Russian Society 3 s.h.
SLAV:2531 Topics in Russian, East European, and Eurasian Studies arr.
SLAV:3082 Youth Subcultures After Socialism 3 s.h.
SLAV:3100 West and East: Women in the Slavic World 3 s.h.
SLAV:3122 Tolstoy and Dostoevsky 3 s.h.
SLAV:3131 Health Care and Health Reforms in Russia 3 s.h.
SLAV:3202 Russian Literature in Translation 1860-1917 3 s.h.
SLAV:3221 Twentieth-Century Czech Authors 3 s.h.

Students majoring in Russian are urged to choose elective courses in economics, geographical and sustainability studies, history, political science, global health, and international studies. Nearly every avenue of professional training and employment requires a solid background in Russian area studies. For example, criteria for U.S. government employment include substantive knowledge in history, economics, political science, sociological disciplines, scientific specialties, demography, military-related skills, and in some cases, cultural and religious background. In-depth knowledge of literature or linguistics without other substantive background may be of limited practical use in finding employment.
B.A. with Teacher Licensure

Students majoring in Asian languages and literature (Chinese or Japanese track) or in Russian who are interested in earning licensure to teach in elementary and/or secondary schools must complete the College of Education's Teacher Education Program (TEP) in addition to the requirements for their major and all requirements for graduation. The TEP requires several College of Education courses and student teaching. Contact the Office of Education Services for details.

Students must satisfy all degree requirements and complete Teacher Education Program licensure before degree conferral.

Asian languages and literature majors must complete designated pedagogy and linguistics courses in the department in addition to the course work required for their major.

Students who plan to use their work toward a minor in Chinese, Japanese, or Russian as academic background for earning teacher licensure should contact the Office of Education Services about requirements.

Four-Year Graduation Plan

The following checkpoints list the minimum requirements students must complete by certain semesters in order to stay on the University's Four-Year Graduation Plan. (Courses in the major are those required to complete the major; they may be offered by departments other than the major department.)

B.A.: Asian Languages and Literature

Before the third semester begins: for students in Chinese and Japanese tracks, language work begun (students in the Hindi and Sanskrit tracks may begin language work in their sophomore year)

Before the fifth semester begins: at least first-year language competency

Before the seventh semester begins: at least second-year language competency and at least 90 s.h. earned toward the degree

Before the eighth semester begins: at least third-year, first-semester language competency and one additional course in the major (for the Japanese track, two additional courses in the major)

During the eighth semester: enrollment in all remaining course work in the major, all remaining General Education courses, and a sufficient number of semester hours to graduate

B.A.: Russian

Before the third semester begins: competence in first-year Russian

Before the fifth semester begins: competence in second-year Russian

Before the seventh semester begins: competence in third-year Russian, an additional course in the major, and at least 90 s.h. earned toward the degree

Before the eighth semester: competence in fourth-year Russian and two more courses in the major

During the eighth semester: enrollment in all remaining course work in the major, all remaining General Education courses, and a sufficient number of semester hours to graduate

Honors in the Major

Students majoring in Asian languages and literature or in Russian have the opportunity to graduate with honors in the major.

Asian languages and literature students must have the consent of the department chair and a faculty sponsor (an Asian specialist from any department) for departmental honors work. In order to graduate with honors in the major, they must register for ASIA:4301 Honors Tutorial and ASIA:4506 Senior Honors Thesis and must complete an acceptable thesis based on original research.

Students majoring in Russian must have junior or senior standing, a g.p.a. of at least 3.33 in Russian, and a cumulative University of Iowa g.p.a. of at least 3.33 in order to enroll in the honors program in Russian.

Students may earn up to 9 s.h. of honors credit in Russian; they earn 3 s.h. for each set of extensive readings with discussions, regular reports, and a semester paper that they complete. Contact the department for more information about requirements for graduation with honors in the Russian major.

In addition to honors in their majors, undergraduate students have a variety of opportunities for honors study and activities through membership in the University of Iowa Honors Program; visit Honors at Iowa to learn about the University's honors program.

Minor: Asian Languages

The minor in Asian languages is offered with four emphases: Chinese, Hindi, Japanese, and Sanskrit. Credit for the minor varies by emphasis. Students must maintain a g.p.a. of at least 2.00 in all courses for the minor and in all UI courses for the minor. Course work in the minor may not be taken pass/nonpass. Requirements for each emphasis are listed below.

CHINESE EMPHASIS

The minor in Asian languages with Chinese emphasis requires 15 s.h., including 12 s.h. earned in courses considered advanced for the minor taken at the University of Iowa. The minor must include the following course work. Some of these courses have prerequisites; students must complete all of a course’s prerequisites before they may register for that course.

Both of these sequences:

CHIN:3101-CHIN:3102 Third-Year Chinese: 6 s.h.
First Semester - Third Year Chinese: Second Semester

CHIN:4103-CHIN:4104 Fourth-Year Chinese: 6 s.h.
First Semester - Fourth-Year Chinese: Second Semester

One of these:

CHIN:3202 Chinese Literature: Prose 3 s.h.
CHIN:3341 Chinese Literature: Poetry 3 s.h.
CHIN:4203 Modern Chinese Writers 3 s.h.
CHIN:4206 Transnational Chinese Cinemas 3 s.h.
HINDI EMPHASIS
The minor in Asian languages with Hindi emphasis requires 14 s.h., including 11 s.h. earned in courses considered advanced for the minor taken at the University of Iowa. The courses SOAS:2101 First-Year Hindi-Urdu: First Semester and SOAS:2102 First-Year Hindi-Urdu: Second Semester do not count as advanced courses for the minor.

JAPANESE EMPHASIS
The minor in Asian languages with Japanese emphasis requires 15 s.h., including 12 s.h. earned in courses considered advanced for the minor taken at the University of Iowa.

The following courses are prerequisite to the Japanese emphasis; they do not count toward the minor.

JPNS:1001 First-Year Japanese: First Semester 5 s.h.
JPNS:1002 First-Year Japanese: Second Semester 5 s.h.
JPNS:2001 Second-Year Japanese: First Semester 4-5 s.h.
JPNS:2002 Second-Year Japanese: Second Semester 4-5 s.h.

The minor with Japanese emphasis must include the following courses.

JPNS:3001-JPNS:3002 Third-Year Japanese I-II 6 s.h.
One course in literature and translation 3 s.h.
One course in linguistics and advanced language studies 3 s.h.
One course in literature and translation, or in linguistics and advanced language studies, or in cultural studies 3 s.h.

Students select the courses in literature and translation, linguistics and advanced language studies, and cultural studies from those listed under "Bachelor of Arts: Asian Languages and Literature/Japanese Track" above.

SANSKRIT EMPHASIS
The minor in Asian languages with Sanskrit emphasis requires 15 s.h., including 12 s.h. earned in courses considered advanced for the minor taken at the University of Iowa. The advanced courses must be chosen from the following list.

SOAS:2902 First-Year Sanskrit: Second Semester 4 s.h.
SOAS:3901 Second-Year Sanskrit: First Semester 3 s.h.
SOAS:3902 Second-Year Sanskrit: Second Semester 3 s.h.
SOAS:4201 Third-Year Sanskrit: First Semester 3 s.h.
SOAS:4202 Third-Year Sanskrit: Second Semester 3 s.h.
SOAS:5201 Individual Sanskrit for Advanced Students arr.

The course SOAS:2901 First-Year Sanskrit: First Semester does not count as an advanced course for the minor.

Minor: Russian
The minor in Russian requires a minimum of 15 s.h. in Russian courses, including 12 s.h. earned in courses considered advanced for the minor taken at the University of Iowa. Students must maintain a g.p.a. of at least 2.00 in all courses for the minor and in all UI courses for the minor. Course work in the minor may not be taken pass/nonpass. Students may count a maximum of 3 s.h. taught in English toward the minor. The department recommends that students choose courses numbered 3000 or above for the minor, such as the following sequences.

SLAV:3111-SLAV:3112 Third-Year Russian I-II 8 s.h.
SLAV:3113-SLAV:3114 Beginning Composition and Conversation I-II 8 s.h.
SLAV:4111-SLAV:4112 Fourth-Year Russian I-II 8 s.h.

Language for General Education
Undergraduate students in all majors may satisfy the World Languages requirement of the College of Liberal Arts and Sciences General Education Program (p. 313) with course sequences in Chinese, Czech, Hindi-Urdu, Japanese, Korean, Russian, and Sanskrit.

Students who have had experience with Japanese or Russian should take the appropriate University of Iowa World Languages Placement Test, which helps determine the level at which they should begin study of the language. Students with backgrounds in Chinese, Czech, Hindi-Urdu, Korean, or Sanskrit may receive individual evaluations from the department.

CHINESE
The following sequence fulfills the General Education Program's World Languages requirement and is appropriate for students without previous knowledge of Chinese.

CHIN:1111 First-Year Chinese: First Semester 5 s.h.
CHIN:1112 First-Year Chinese: Second Semester 5 s.h.
CHIN:2101 Second-Year Chinese: First Semester 5 s.h.
CHIN:2102 Second-Year Chinese: Second Semester 5 s.h.

Students who have participated in ABRD:3411 Iowa in Tianjin after completing CHIN:1111 First-Year Chinese: First Semester and CHIN:1112 First-Year Chinese: Second Semester, and students from Chinese-speaking families who perform exceptionally well in CHIN:1111 First-Year Chinese: First Semester and CHIN:1112 First-Year Chinese: Second Semester, may fulfill the World Languages requirement with the following sequence.

CHIN:1111 First-Year Chinese: First Semester 5 s.h.
CHIN:1112 First-Year Chinese: Second Semester 5 s.h.
CHIN:2103 Accelerated Second-Year Chinese: First Semester 3 s.h.
CHIN:2104 Accelerated Second-Year Chinese: Second Semester 3 s.h.

Students who have taken CHIN:2103 and/or CHIN:2104 should not enroll in CHIN:2101 and/or CHIN:2102.

Additional course work is available, including advanced Chinese, classical Chinese, and business Chinese. Consult the department for appropriate placement in Chinese language courses.

CZECH
The following sequence fulfills the General Education Program's World Languages requirement and is most
appropriate for students without previous knowledge of Czech.

SLAV:1211 Conversational Czech I 3 s.h.
SLAV:1212 Conversational Czech II 3 s.h.
SLAV:2211 Conversational Czech III 3 s.h.
SLAV:2212 Conversational Czech IV 3 s.h.

HINDI-URDU
The following sequence fulfills the General Education Program’s World Languages requirement. Additional courses are available.

SOAS:2101 First-Year Hindi-Urdu: First Semester 5 s.h.
SOAS:2102 First-Year Hindi-Urdu: Second Semester 5 s.h.
SOAS:3101 Second-Year Hindi-Urdu: First Semester 4 s.h.
SOAS:3102 Second-Year Hindi-Urdu: Second Semester 4 s.h.

JAPANESE
The following sequence fulfills the General Education Program’s World Languages requirement and is appropriate for students without previous knowledge of Japanese.

JPNS:1001 First-Year Japanese: First Semester 5 s.h.
JPNS:1002 First-Year Japanese: Second Semester 5 s.h.
JPNS:2001 Second-Year Japanese: First Semester 4-5 s.h.
JPNS:2002 Second-Year Japanese: Second Semester 4-5 s.h.

KOREAN
The following sequence fulfills the General Education Program’s World Languages requirement and leads to elementary/intermediate proficiency in Korean.

ASIA:1101 First-Year Korean: First Semester 4 s.h.
ASIA:1102 First-Year Korean: Second Semester 4 s.h.
ASIA:2101 Second-Year Korean: First Semester 4 s.h.
ASIA:2102 Second-Year Korean: Second Semester 4 s.h.

Students interested in Korean language study beyond the General Education requirement may take third-year Korean courses listed under "Courses" toward the end of this Catalog section.

RUSSIAN
The following sequence fulfills the General Education Program’s World Languages requirement.

SLAV:1111 First-Year Russian I 5 s.h.
SLAV:1112 First-Year Russian II 5 s.h.
SLAV:2111 Second-Year Russian I 4 s.h.
SLAV:2112 Second-Year Russian II 4 s.h.

SANSKRIT
The following sequence fulfills the General Education Program’s World Languages requirement.

SOAS:2901 First-Year Sanskrit: First Semester 4 s.h.
SOAS:2902 First-Year Sanskrit: Second Semester 4 s.h.
SOAS:3901 Second-Year Sanskrit: First Semester 3 s.h.
SOAS:3902 Second-Year Sanskrit: Second Semester 3 s.h.

Students interested in Sanskrit language study beyond the General Education requirement may take third-year Sanskrit courses listed under "Courses" toward the end of this Catalog section.

Related Certificate: International Business
The College of Liberal Arts and Sciences and the Tippie College of Business offer the Certificate in International Business. The program entails study of international business and economics; international relations and institutions; a language; and the art, literature, culture, and/or politics of a geographic area. Students of Chinese, Japanese, Hindi, or Russian are likely to satisfy the certificate's language requirement while completing the requirements for their major. For information about the certificate, see International Business (p. 408) in the Catalog.

Graduate Programs of Study
• Master of Arts in Asian civilizations
The master's degree program in Asian civilizations prepares students for doctoral study in a variety of disciplines. It also may be a good choice for students planning nonacademic careers in which advanced knowledge of Asian civilizations could be useful. For example, students working toward professional degrees, such as an M.D. or J.D., may decide to earn the M.A. in Asian civilizations while completing the professional degree.

Master of Arts
The Master of Arts program in Asian Civilizations requires a minimum of 30 s.h. of graduate credit, including 24 s.h. earned in residence at the University of Iowa. All students must maintain a g.p.a. of 3.00 or higher. Detailed information on degree requirements is sent to all applicants.

M.A. students choose from several tracks: Hindi language and literature, Sanskrit language and literature, South Asian studies, Chinese literature and culture, Chinese linguistics, teaching Chinese as a foreign language, interdisciplinary Chinese studies, teaching Japanese as a foreign language, Japanese studies, and interdisciplinary Japanese studies.

By the end of the first semester in residence, students propose a study plan developed in consultation with their advisor and in accordance with guidelines for specializations within the program.

By the end of the final semester in residence, students are expected to demonstrate, either by departmental examination or the successful completion of courses at the appropriate level, advanced competence in Chinese, Japanese, Hindi-Urdu, or Sanskrit. Advanced competence is defined generally as fourth-year level course work in
Chinese or Japanese and third-year level in Hindi-Urdu and Sanskrit.

Admission

Applicants must meet the admission requirements of the Graduate College; see the Manual of Rules and Regulations of the Graduate College. The Department of Asian and Slavic Languages and Literatures requires a g.p.a. of at least 3.00 for regular admission and a g.p.a. of at least 2.75 for conditional admission.

Applicants mustsubmit a statement of purpose, a research paper written in English, three letters of recommendation, and scores on the Graduate Record Exam (GRE) General Test. Applicants whose first language is not English must score at least 97 (Internet-based) on the Test of English as a Foreign Language (TOEFL).

Both international and U.S. graduate applications requesting financial support for the following academic year are due February 1. All other applications are accepted until April 15 for fall admission and October 1 for spring admission.

Application materials are available from the department.

Study Abroad

The department strongly urges its students to seek opportunities for summer language study and study abroad to accelerate the language acquisition process. The University’s memberships in the American Institute of Indian Studies and the China Cooperative Language and Study Programs consortium help facilitate students’ access to quality international programs in India and China. The government of the People’s Republic of China offers scholarships for two students to live and study in mainland China each year.

The UI-Nanzan Exchange allows Iowa students to pay Iowa tuition, room, and board while attending the Center for Japanese Studies at Nanzan University in Nagoya, Japan. There also is a cooperative agreement with the Landour Language School in the Himalayan foothills of India. The South Asian Studies Program has launched a new study abroad program in Mysore and Bangalore, India, where students have the opportunity to study a variety of aspects of traditional and modern Indian civilization.

Iowa students participate in summer, semester, or academic year programs in Russian under the auspices of the American Council of Teachers of Russian (ACTR). The association directs academic language training programs in the cities of Moscow, St. Petersburg, and Vladimir.

Many students participate in summer, semester-long, and year-long study abroad programs in India, China, and Japan offered through other U.S. universities. In many cases credit is transferable, and it is possible for a student to study abroad and still complete the Four-Year Graduation Plan. There are many resources available for funding research and study abroad. It also may be possible for students to apply University of Iowa financial aid to their study abroad programs.

Contact the Department of Asian and Slavic Languages and Literatures or International Programs Study Abroad for more information.

Summer Study, Internships

The department offers an intensive course of language study (second year) each summer in which students complete the equivalent of one academic year of study (the equivalent of one course for each of two semesters, totaling 8 s.h.). Scholarships are available for summer intensive Russian.

Students are encouraged to enrich their programs of study through internships designed to combine work experience in Asia or the United States with study or research projects. The University’s Pomerantz Career Center maintains a list of internships.

Activities

Student Associations

Students have many opportunities to enrich their studies in Asian languages and literature while living in Iowa City. The University sponsors student associations for students from many Asian countries, including mainland China, Japan, Korea, India, Pakistan, and Taiwan. All University of Iowa students are welcome to join. Various international community groups sponsor cultural events and holiday celebrations throughout the year.

Residence in Living-Learning Community

The Global Mosaic Living-Learning Community welcomes American and international first-year and second-year students who wish to broaden their knowledge of international issues, languages, and cultures. Global Mosaic members live in Mayflower Residence Hall and enjoy a variety of programs on diverse cultures, the arts, fashion, cinema, dining and cuisine, study abroad, and more. Students must apply to live in the Global Mosaic Living-Learning Community; see the Living-Learning Communities web page.

Facilities

Language Media Center

The University’s Language Media Center provides facilities for language learning, teaching, and research. Equipment in the center includes state-of-the-art computer, audio, and video facilities as well as standard and short-wave radios, tape and cassette recorders, record players, and soundproof recording rooms. An electronic classroom, a soundproof workroom, and a library of tape, disc, and cassette recordings also are available.

University of Iowa Libraries

Since 1960 University of Iowa Libraries has routinely acquired most American titles in Asian studies and selected overseas scholarly publications in English and other Western languages. The Main Library’s Asian collection includes approximately 80,000 volumes in Asian languages and about 140,000 Western-language volumes on Asian subjects. The University has been a member of the Library of Congress Foreign Currency Exchange Program for Indian books and periodicals since 1975. The library’s nonprint media collection includes a growing number of Asian feature films. A Chinese-Japanese-Korean computer terminal gives students and faculty access.
to the growing Research Libraries Information Network database in Asian languages.

Financial Support

Undergraduate and graduate students have access to the following financial aid and scholarship resources. Contact the Department of Asian and Slavic Languages and Literatures for application information.

Cheng/Liu Scholarship: Undergraduate and graduate students currently majoring in Chinese in the Department of Asian and Slavic Languages and Literatures at the University of Iowa may apply for the Cheng/Liu Scholarship. The award can be used for summer Chinese language study.

Fairall Scholarship: Undergraduate or graduate majors who have attended and/or graduated from Iowa elementary or secondary schools may be nominated by the department to receive a Fairall Scholarship. Preference is given to Japanese studies students. Applications are available late spring, with scholarships to be awarded the following fall semester.

Foreign language and area studies fellowships: Only U.S. citizens are eligible. Graduate students combining work in Asian languages at an advanced level with interdisciplinary or professional programs may apply. The award is offered by International Programs for academic year and summer language study.

Graduate assistantships: The department offers teaching assistantships for graduate students in the program. All applicants to graduate study in the program receive information on applying for an assistantship. Assistantships are awarded each spring for the following academic year.

Graduate international research: Opportunities for funding research abroad include Stanley Fellowships for Graduate Student Research Abroad, CIREH Research Scholarships in International Health, Fulbright Grants, and Foreign Language Area Scholarships.

Summer language scholarships: Currently enrolled undergraduate and graduate students may compete for a Stanley-University of Iowa Foundation Support Organization Summer Language Scholarship, to be used for intensive summer language study in Chinese, Hindi-Urdu, Japanese, or Sanskrit. Eight to ten awards of $2,000-$2,500 are made each summer. Applications are due March 1.

Support for undergraduate study abroad: Opportunities for undergraduates to study abroad include the Presidential Scholarships for Study Abroad and the Stanley Scholarships for International Research and Study.

Courses

Language for Undergraduate and Graduate Students

Chinese, Lower-Level Undergraduate

High school students and University of Iowa students who would like to learn Chinese but do not plan to use Chinese to satisfy the World Languages requirement of the College of Liberal Arts and Sciences General Education Program may wish to take the beginning Chinese courses CHIN:1115 and CHIN:1116 in sequence and may follow them with the second-year courses CHIN:2101 and CHIN:2102. See the course descriptions below.

CHIN:1101 Conversational Chinese I 1 s.h.
Introduction to modern Chinese, with focus on communication "survival" skills for discussing oneself, family, daily activities, interests, personal preferences, food, shopping, travel, lodging; situational activities and performance.

CHIN:1102 Conversational Chinese II 1 s.h.
Continuation of CHIN:1101, with focus on speaking and listening.

CHIN:1111 First-Year Chinese: First Semester 5 s.h.
Beginning Chinese; offered through UI Confucius Institute; first of a four-course sequence.

CHIN:1112 First-Year Chinese: Second Semester 5 s.h.
Continuation of CHIN:1111. Offered spring semesters. Prerequisites: CHIN:1111. Requirements: undergraduate standing. GE: World Languages First Level Proficiency.

CHIN:1115 Beginning Chinese I 3 s.h.
Beginning Chinese; offered through UI Confucius Institute; first of a four-course sequence.

CHIN:1116 Beginning Chinese II 3 s.h.
Continuation of CHIN:1115; offered through UI Confucius Institute; second of a four-course sequence. Requirements: CHIN:1115 or equivalent as demonstrated in written and oral exams.

CHIN:2101 Second-Year Chinese: First Semester 5 s.h.

CHIN:2102 Second-Year Chinese: Second Semester 5 s.h.

CHIN:2103 Accelerated Second-Year Chinese: First Semester 3 s.h.

CHIN:2104 Accelerated Second-Year Chinese: Second Semester 3 s.h.
Intermediate Chinese. Prerequisites: grade of C or higher in CHIN:2103. GE: World Languages Fourth Level Proficiency.

Chinese, Upper-Level Undergraduate

CHIN:3101 Third-Year Chinese: First Semester 3 s.h.
Reading of advanced modern Chinese texts; speaking, writing. Offered fall semesters. Prerequisites: CHIN:2102.

CHIN:3102 Third Year Chinese: Second Semester 3 s.h.
Continuation of CHIN:3101. Offered spring semesters. Prerequisites: CHIN:3101.

CHIN:3103 Business Chinese I 3 s.h.
Skill development in communicating with Chinese counterparts on a number of domains in business translations; first of a two-course sequence. Prerequisites: CHIN:2102.

CHIN:3104 Business Chinese II 3 s.h.
Skill development in communicating with Chinese counterparts on a number of domains in business translations; second of a two-course sequence. Prerequisites: CHIN:3102 or CHIN:3103.

CHIN:4101 Classical Chinese: First Semester 3 s.h.
Late Zhou period; readings from Zhangouo, Mengzi, Zhuangzi; focus on grammatical analysis, exact translation. Offered fall semesters. Prerequisites: CHIN:2102.

CHIN:4102 Classical Chinese: Second Semester 3 s.h.
Continuation of CHIN:4101. Offered spring semesters. Prerequisites: CHIN:4101.

CHIN:4103 Fourth-Year Chinese: First Semester 3 s.h.
Proficiency through oral and written discussions of modern texts. Offered fall semesters. Prerequisites: CHIN:3102.

CHIN:4104 Fourth-Year Chinese: Second Semester 3 s.h.
Offered spring semesters. Prerequisites: CHIN:4103.

Chinese, Graduate

CHIN:5101 Fifth-Year Chinese: First Semester 3 s.h.
Improvement of language skills in modern Chinese: listening, speaking, reading, writing; skill development in reading authentic texts related to topics of student interest. Prerequisites: CHIN:4104.

CHIN:5102 Fifth-Year Chinese: Second Semester 3 s.h.
Continuation of CHIN:5101. Prerequisites: CHIN:5101.

CHIN:5103 Readings in Chinese Literature 3 s.h.

CHIN:5105 Literary Chinese I 3 s.h.
Readings from literary and historical texts of Han and Wei-Jin periods. Prerequisites: CHIN:4102.

Czech, Lower-Level Undergraduate

SLAV:1211 Conversational Czech I 3 s.h.
Development of basic reading and writing skills, ability to understand and speak everyday Czech; history and culture of Czech-speaking countries through discussions, readings, and videos. GE: World Languages First Level Proficiency.

SLAV:1212 Conversational Czech II 3 s.h.
Continuation of SLAV:1211; development of basic reading and writing skills, ability to understand and speak everyday Czech; history and culture of Czech-speaking countries through discussions, readings, and videos. Prerequisites: SLAV:1211. GE: World Languages Second Level Proficiency.

SLAV:2211 Conversational Czech III 3 s.h.
Continuation of SLAV:1212; development of reading and writing skills, ability to understand and speak everyday Czech; history and culture of Czech-speaking countries through discussions, readings, and videos. Prerequisites: SLAV:1212. GE: World Languages Second Level Proficiency.

SLAV:2212 Conversational Czech IV 3 s.h.
Continuation of SLAV:2211; development of reading and writing skills, ability to understand and speak everyday Czech; history and culture of Czech-speaking countries through discussions, readings, and videos. Prerequisites: SLAV:2211. GE: World Languages Fourth Level Proficiency.

Czech, Upper-Level Undergraduate and Graduate

SLAV:3145 Third-Year Czech I 4 s.h.
Advanced knowledge of Czech grammar; reading, comprehension, conversation, and writing skills; varied techniques and activities for proficiency in Czech; conversation in small groups, presentation of oral reports, written compositions, group projects; articles from the press, contemporary Czech short stories, videos of contemporary Czech cultural scene. Prerequisites: SLAV:2212.

SLAV:3146 Third-Year Czech II 4 s.h.
Continuation of SLAV:3145; advanced knowledge of Czech grammar and basic syntax structures of Czech sentences; reading, aural comprehension, conversation, writing skills; short stories from Czech Literature, Internet press articles, short compositions; videos of contemporary Czech cultural scene. Prerequisites: SLAV:3145.

Hindi-Urdu, Lower-Level Undergraduate

SOAS:2101 First-Year Hindi-Urdu: First Semester 5 s.h.
Reading, writing, speaking. Offered fall semesters of odd years. GE: World Languages First Level Proficiency.

SOAS:2102 First-Year Hindi-Urdu: Second Semester 5 s.h.
Continuation of SOAS:2101. Offered spring semesters of even years. Prerequisites: SOAS:2101. Requirements: undergraduate standing. GE: World Languages Second Level Proficiency.

**Hindi-Urdu, Upper-Level Undergraduate and Graduate**

SOAS:3101 Second-Year Hindi-Urdu: First Semester 4 s.h.
Conversation, reading of folktales and modern short stories. Offered fall semesters of even years. Prerequisites: SOAS:2102. GE: World Languages Second Level Proficiency.

SOAS:3102 Second-Year Hindi-Urdu: Second Semester 4 s.h.
Continuation of SOAS:3101. Offered spring semesters of odd years. Prerequisites: SOAS:3101. Requirements: undergraduate standing. GE: World Languages Fourth Level Proficiency.

SOAS:4101 Third-Year Hindi-Urdu: First Semester 3 s.h.
Advanced level Hindi texts; speaking, writing. Offered fall semesters. Prerequisites: SOAS:3102.

SOAS:4102 Third-Year Hindi-Urdu: Second Semester 3 s.h.
Continuation of SOAS:4101. Offered spring semesters. Prerequisites: SOAS:4101.

**Japanese, Lower-Level Undergraduate**

JPNS:1001 First-Year Japanese: First Semester 5 s.h.

JPNS:1002 First-Year Japanese: Second Semester 5 s.h.

JPNS:2001 Second-Year Japanese: First Semester 4-5 s.h.

JPNS:2002 Second-Year Japanese: Second Semester 4-5 s.h.

**Japanese, Upper-Level Undergraduate and Graduate**

JPNS:3001 Third-Year Japanese I 3 s.h.
Modern Japanese; focus on speaking, listening, reading, writing; materials related to everyday life and civilization in Japan. Offered fall semesters. Prerequisites: JPNS:2002.

JPNS:3002 Third-Year Japanese II 3 s.h.
Continuation of JPNS:3001. Offered spring semesters. Prerequisites: JPNS:3001.

JPNS:3107 Classical Japanese: First Semester 3 s.h.
Grammar, readings in classical Japanese. Offered fall semesters. Prerequisites: JPNS:3002.

JPNS:4001 Fourth-Year Japanese I 3 s.h.
Modern Japanese; focus on reading, writing, speaking, listening. Offered fall semesters. Prerequisites: JPNS:3002.

JPNS:4002 Fourth-Year Japanese II 3 s.h.
Continuation of JPNS:4001. Offered spring semesters. Prerequisites: JPNS:4001.

JPNS:4501 Fifth-Year Japanese I 3 s.h.
Modern Japanese; emphasis on communication skills. Offered fall semesters. Prerequisites: JPNS:4001 and JPNS:4002.

JPNS:4502 Fifth-Year Japanese II 3 s.h.
Continuation of JPNS:4501. Offered spring semesters. Prerequisites: JPNS:4501.

**Korean, Lower-Level Undergraduate**

ASIA:1051 Korean for Travel and Business 2 s.h.
Introduction to basic communication skills and Korean culture; Korean alphabet (Hangeul), survival Korean expressions, cultural etiquette and norms; speaking, comprehension, reading, and writing in basic Korean; Korean business culture; classroom activities and assignments based on authentic material.

ASIA:1101 First-Year Korean: First Semester 4 s.h.
Modern Korean; speaking, listening, reading, writing. Offered fall semesters. GE: World Languages First Level Proficiency.

ASIA:1102 First-Year Korean: Second Semester 4 s.h.
Continuation of ASIA:1101. Offered spring semesters. Prerequisites: ASIA:1101. GE: World Languages Second Level Proficiency.

ASIA:2101 Second-Year Korean: First Semester 4 s.h.
Continuation of ASIA:1102; conversation and readings in intermediate Korean language; Korean culture. Prerequisites: ASIA:1102. GE: World Languages Second Level Proficiency.

ASIA:2102 Second-Year Korean: Second Semester 4 s.h.
Continuation of ASIA:2101. Prerequisites: ASIA:2101. GE: World Languages Fourth Level Proficiency.

**Korean, Upper-Level Undergraduate and Graduate**

ASIA:3101 Third-Year Korean: First Semester 3 s.h.
Continuation of ASIA:2102; advanced intermediate Korean—conversation and grammar skills beyond basic intermediate level; vocabulary expansion with increasingly complex, abstract concepts; how to advance one’s opinion and discuss thoughts, ideas. Prerequisites: ASIA:2102.

**ASIA:3102 Third-Year Korean: Second Semester**
3 s.h.
Continuation of ASIA:3101; conversation and grammar skills beyond basic intermediate level; writing skills for formal occasions; advanced discussion skills—how to advance one’s opinion and share thoughts and ideas; traditional and modern Korean culture. Prerequisites: ASIA:3101.

**ASIA:4000 Fourth Year Korean: First Semester**
3 s.h.
Continuation of ASIA:3102; development of intermediate high to advanced-level Korean; enlarging vocabulary, exploring Korean sentence structures, reading various types of texts, listening to authentic Korean materials; Korean society and culture; content-based learning methodology. Prerequisites: ASIA:3102.

**ASIA:4001 Fourth Year Korean: Second Semester**
3 s.h.
Continuation of ASIA:4000; development of intermediate high- to advanced-level Korean speaking ability; enlarging vocabulary, exploring Korean sentence structures, reading various types of texts, and listening to authentic Korean materials; Korean society and culture; materials provided to prepare for Korean standardized tests; content-based learning methodology. Prerequisites: ASIA:3102.

**Russian, Upper-Level Undergraduate and Graduate**

**SLAV:3111 Third-Year Russian I** 4 s.h.
Advanced Russian grammar, reading, conversation, and written skills through oral reports, compositions, conversation. Prerequisites: SLAV:2112.

**SLAV:3112 Third-Year Russian II** 4 s.h.
Advanced Russian grammar, reading, conversation, and written skills through oral reports, compositions, conversation. Prerequisites: SLAV:3111.

**SLAV:3113 Beginning Composition and Conversation I** 4 s.h.
Russian oral and aural skills developed through idiomatic usage, stylistics, phonetics, intonation, grammar review; supplemented by short stories, newspaper texts. Taught in Russian. Prerequisites: SLAV:2112.

**SLAV:3114 Beginning Composition and Conversation II** 4 s.h.
Russian oral and aural skills developed through idiomatic usage, stylistics, phonetics, intonation, grammar review; supplemented by short stories, conversation handbooks, current periodicals. Taught in Russian. Prerequisites: SLAV:2112.

**SLAV:3115 Russian for Heritage Learners** 3 s.h.
Linguistic problems (grammar and vocabulary), communicative problems (understanding of written and oral advanced Russian speech), cultural problems (similarities and differences between cultures); for Russian heritage speakers.

**SLAV:3116 Russian for Heritage Learners II** 3 s.h.
Continuation of SLAV:3115.

**SLAV:4111 Fourth-Year Russian I** 4 s.h.
Perfecting spoken Russian and aural comprehension of native speech. Taught in Russian. Requirements: SLAV:3112 or three years of college-level Russian.

**SLAV:4112 Fourth-Year Russian II** 4 s.h.
Perfecting spoken Russian and aural comprehension of native speech. Taught in Russian. Requirements: SLAV:4111 or three years of college-level Russian.

**Sanskrit, Lower-Level Undergraduate**

**SOAS:2901 First-Year Sanskrit: First Semester** 4 s.h.
Grammar, basic vocabulary; elementary readings. Offered fall semesters of even years. Requirements: undergraduate standing. GE: World Languages First Level Proficiency. Same as CLSA:2901.

**SOAS:2902 First-Year Sanskrit: Second Semester** 4 s.h.
Sanskrit, Upper-Level Undergraduate and Graduate

SOAS:3901 Second-Year Sanskrit: First Semester 3 s.h.
Readings in epic and puranic texts. Offered fall semesters of odd years. Prerequisites: SOAS:2902. Requirements: undergraduate standing. GE: World Languages Second Level Proficiency. Same as CLSA:3901.

SOAS:3902 Second-Year Sanskrit: Second Semester 3 s.h.
The *Bhagavadgita* and related religious/philosophical texts. Offered spring semesters of even years. Prerequisites: SOAS:3901. Requirements: undergraduate standing. GE: World Languages Fourth Level Proficiency. Same as CLSA:3902.

SOAS:4201 Third-Year Sanskrit: First Semester 3 s.h.
Readings in philosophical and literary Sanskrit. Offered fall semesters. Prerequisites: SOAS:3902.

SOAS:4202 Third-Year Sanskrit: Second Semester 3 s.h.
Continuation of SOAS:4201. Offered spring semesters. Prerequisites: SOAS:4201.

Lower-Level Undergraduate

Asian Culture and Civilization

ASIA:1000 First-Year Seminar 1-2 s.h.
Small discussion class taught by a faculty member; topics chosen by instructor; may include outside activities (e.g., films, lectures, performances, readings, visits to research facilities). Requirements: first- or second-semester standing.

ASIA:1040 Living Religions of the East 3 s.h.
Religious beliefs, practices in India, China, Japan. GE: Values, Society, and Diversity. Same as RELS:1404.

ASIA:1060 Introduction to Buddhism 3 s.h.
Basic tenets, religious paradigms, historical phases important in the development of Buddhism; from the Buddha's life to evolution of Mahāyāna Buddhism; readings from India, Tibet, China, Japan, Korea, Southeast Asia. GE: Values, Society, and Diversity. Same as RELS:1506.

ASIA:1110 Gods, Buddhas, and Ghostly Officials: The Past and Present of Chinese Religions 3 s.h.
History of religious beliefs and practices in China; role in modern-day Chinese society; specific case studies that illuminate current situation of religion in China and impact on Chinese society; focus on the still widespread worship of gods and ancestors, the Confucian, Buddhist and Daoist traditions, recent upsurge of Christianity in China, and emergence of new religions (e.g., the Falun gong). Same as RELS:1510.

ASIA:1135 Korean Language in Culture and Society 3 s.h.
Introduction to various sociolinguistic phenomena in Korean society; general linguistic characteristics of Korean; Confucianism and honorifics; language changes in North and South Korea; gender differences and generation differences; Korean contacts with English, Chinese, Japanese, others. Taught in English.

ASIA:1500 Asian Humanities: Korea 3 s.h.
Introduction to most representative cultural heritages in Korean humanities tradition throughout 4,500 years of Korean history; English translations of famous works in Korean traditional literature, performing and visual arts, philosophy; understanding the essence of traditional Korean culture through exposure to various aspects of Korean humanities; how Korean traditional culture is reflected in contemporary pop culture; readings and discussions taught in English, video materials with English subtitles.

ASIA:1704 The Languages of Asia in Cultural and Historical Perspective 3 s.h.
Chinese, Japanese, Korean, Sanskrit and Hindi; cultural and ethnic factors which have affected and are affected by each language; nontechnical introduction to the structure of the language, discussion of the script in which the language is written, and the history of the language, including a brief outline of the political and cultural history of each pertinent linguistic area and the ways linguistic history has been affected by these factors.

ASIA:1706 Understanding Korean Culture Wave 3 s.h.
Introduction to the Korean culture wave and characteristics of contemporary Korean popular culture; lectures with discussions of readings, various audio-visual references (i.e., films, television dramas, music videos, cartoon, Internet contents).

ASIA:1770 Asian Humanities: Middle East 3 s.h.
How the self has been constructed in literary texts from premodern and modern Islamic world.

ASIA:2231 Introduction to the Art of China 3 s.h.
Visual arts of China and their history; emphasis on understanding in context of Chinese civilization, history. Same as ARTH:2220.

ASIA:2444 Envision India 3 s.h.
Introduction to world view and civilization of the South Asian subcontinent, not as a timeless and isolated culture, but as a dynamic and interactive part of evolving global cultural exchanges.

ASIA:2450 India Beat: The Aesthetics and Politics of India Today 3 s.h.
Ways in which music forms a crucial part of Indian public sphere, reflecting and shaping culture, society, and economy; wide range of genres commonly performed and heard across India and South Asia today (i.e., film music, several folk forms, classical, semi-classical, Indipop, rock) and locating each of them in their respective historical, cultural, and socioeconomic contexts; exploration of themes and questions (i.e., emergence and impact of technologies of mass production, distribution of music in colonial and post-independence India).
ASIA:2602 Civilizations of Asia: China 3 s.h.

ASIA:2604 Civilizations of Asia: Japan 3-4 s.h.
GE: Historical Perspectives; International and Global Issues. Same as HIST:2604.

ASIA:2606 Civilizations of Asia: South Asia 3-4 s.h.

ASIA:2887 Perspectives on Korea 3 s.h.
History of Korea from earliest times to present; changing meanings of Korea and Koreans; relevant issues of politics, society, and culture; events that shaped ancient Korean kingdoms, the Choson dynasty (1392-1910), Japanese occupation, and divided Korean peninsula; how present perspectives on Korea have influenced understandings of its past; placement of Korea within a regional and global context to examine Korea's relationship with the world. Same as HIST:2687.

CHIN:1070 Asian Art and Culture 3 s.h.
Art from India, China, and Japan in many media and forms, in their cultural and historical contexts; cultural distinctions of these Asian civilizations as seen through the visual arts; chronology used to highlight historical processes and provide perspectives on continuity and change. GE: Historical Perspectives; Literary, Visual, and Performing Arts. Same as ARTH:1070.

CHIN:1504 Asian Humanities: China 3 s.h.
Literary and philosophical texts of China in English translation. GE: Values, Society, and Diversity.

CHIN:1702 Chinese Popular Culture 3 s.h.
Introduction to popular culture from the People's Republic of China, Taiwan, Hong Kong, and the Chinese diaspora; shifting relationships among cultural production, media and technology, and political thought; influences of Japan, Korea, and the West; materials drawn from film, television shows, music, new media, popular literature, comics, magazines, advertising, fashion, art, and material culture; no previous knowledge of Chinese is required.

CHIN:1800 Chinese Character Writing and Calligraphy 1 s.h.
Introduction to Chinese script and Chinese character handwriting (including brush writing) techniques; historical development of Chinese writing styles, Chinese character formation, fundamentals of Chinese character writing (stroke sequence, character structure); basic techniques of using Chinese brush; appreciation of Chinese calligraphy as an art form; hands-on practice in writing Chinese characters using a hard pen and Chinese writing brush. Recommendations: enrollment in a Chinese language course.

SOAS:1502 Asian Humanities: India 3 s.h.
Introduction to four thousand years of South Asian civilization, through popular stories. GE: Values, Society, and Diversity. Same as RELS:1502.

SOAS:1550 Sex, Music, and Pop Culture in India 3 s.h.
Exploration of debates and conflicts around gender and sexuality in Indian and South Asian popular culture, particularly music; shifting representations of gender relations, sexuality, gender/sexual identities in Indian music; focus on postcolonial period; how folk music, film songs, and classical music (among other genres) have dealt with issues such as changing conceptions of womanhood or masculinity, "queer" or gender/sexually variant communities and identities; how popular culture has negotiated questions of gender and sexuality in relation to nationhood, globalization, and cultural identity.

Japanese Culture and Civilization

JPNS:1115 Japanese Religions 3 s.h.
Religions of Japan from ancient times to the present day; elite and popular Japanese interpretations of Chinese Buddhist and Daoist traditions; the parallel development of an indigenous kami tradition; contemporary new religious movements; focus on the codification of a variety of religious (and sometimes quasi-religious) paths, including the way of tea, the way of the brush, and the way of the samurai. Same as RELS:1610.

JPNS:1200 Special Topics in Japanese 3 s.h.
Topics vary.

JPNS:1506 Asian Humanities: Japan 3 s.h.
Introduction to premodern, modern, and contemporary Japanese images, myths, and literature in English translation. GE: Values, Society, and Diversity.

JPNS:2175 Japanese Society and Culture 3 s.h.
Cultural anthropology of Japan, including historical tradition, religious ethos, social organization, human ecology, educational and political institutions; emphasis on how these aspects relate to and influence one another. GE: Values, Society, and Diversity. Same as ANTH:2175.

JPNS:2250 Introduction to the Art of Japan 3 s.h.
Chronological survey of Japan's visual arts in their historical and cultural contexts from Neolithic age to present; extensive use of slides, films, other visual materials. Same as ARTH:2250.

Slavic Culture and Civilization

SLAV:1000 First-Year Seminar 1 s.h.
Cultural, literary, architectural, and historical beauty of Prague, the capital of the Czech Republic. Requirements: first- or second-semester standing.

SLAV:1050 Russian for Travelers and Business People 2 s.h.
How Russian culture continues to shape current geopolitical and sporting events (e.g., World Cup Soccer 2018); emphasis on learning basic survival Russian phrases, cultural etiquette and norms. Taught in English.

SLAV:1131 Introduction to Russian Culture 3 s.h.
Development of cultural history in Russia from middle ages to present; painting, music architecture, literature viewed against their political, historical, and social settings. Taught in English. GE: Values, Society, and Diversity.
SLAV:1132 Russia Today 3 s.h.
Contemporary Russia, with focus on prevailing social, political, economic, ethnic, environmental conditions; attention to historical evolution of problems, current factors; what these factors might portend for the future. Taught in English. GE: International and Global Issues; Values, Society, and Diversity.

SLAV:1450 Diversities of Eastern Europe: Culture, Art, and Politics 3 s.h.
Exploration of major cultural and social changes in Central Europe since the 1950s; very similar, yet different experiences of four nations with a communist takeover, including crushed attempts to reform and humanize socialism and their final reach for freedom and democracy in 1989; current cultural and social situations of each country as they took advantage of newly available opportunities.

SLAV:1500 Ukraine, a Country at the Crossroads: An Interdisciplinary Seminar on Ukrainian History and Culture 3 s.h.
Cultural specificity of Ukraine as a large multicultural European country; vital background information for analysis of present-day political events; strategic location between East and West; centuries-long history and culture; all readings in English, no knowledge of Russian or Ukrainian required. Same as CL:1500.

SLAV:1531 Slavic Folklore 3 s.h.
Introduction to culture, history, and art of eastern European peoples; pagan, dualistic, and animistic beliefs and their coexistence with Christian faith in eastern Europe. GE: Historical Perspectives; Values, Society, and Diversity.

SLAV:1532 Religion and Culture of Slavs 3 s.h.
Early and medieval Slavic history, with focus on Russian and Czech art, literature, and religion from 10th through 17th century. GE: Historical Perspectives; Values, Society, and Diversity.

SLAV:2100 Secrets of Russian Mentality 3 s.h.
Deeper insight of Russian mentality through philosophical, historical, cultural, and practical developments that have shaped Russian behavior and thought.

SLAV:2122 Cult Films of the Last Soviet Generation 3 s.h.
Political and cultural circumstance of one of the world's most volatile and powerful regions; how life within what was considered an "Evil Empire" from 1960s to 1980s was far from primitive; how creative intelligentsia continued producing and enjoying excellent motion pictures despite multiple bans and regulations; implications for contemporary life; wider understanding of Russian aesthetics.

SLAV:2131 Women in Russian Society 3 s.h.
Historical developments that have shaped women's role in contemporary Russian society; readings in cultural history, political science, autobiographical and fictional literature, contemporary film. Taught in English.

SLAV:2232 Romani (Gypsy) Cultures of Eastern Europe 3 s.h.
Aspects of culture shared by most Roma (Gypsies) around the world; samples of folklore from Europe; impact of Roma on European literature, music, and culture; readings in English; no previous knowledge of Russian or Romani required. Same as CL:2700.

SLAV:2531 Topics in Russian, East European, and Eurasian Studies 3 s.h.
Same as CL:2531.

Upper-Level Undergraduate and Graduate

Asian Culture and Civilization

ASIA:3120 Autobiography in Islamic Literary Cultures 3 s.h.
How the self has been constructed in Islamic literary cultures from classical Islamic period to modernity.

ASIA:3219 Chinese Art and Culture 3 s.h.
Archaeological discoveries, sculpture, painting, architecture, calligraphy, other arts of Greater China area in historical and cultural contexts of past 5,000 years. Prerequisites: ARTH:1060 or ARTH:2220. Same as ARTH:3220.

ASIA:3220 Chinese Painting I: Pagodas and Palaces 3 s.h.
Early Chinese painting from fourth century B.C.E. through 14th century C.E.; figural style, religious art, emergence of landscape, other nonreligious subjects, interconnectedness of painting and calligraphy as fine arts. Same as ARTH:3230.

ASIA:3270 Themes in Asian Art History 3 s.h.
Same as ARTH:3270.

ASIA:3414 Government and Politics of the Far East 3 s.h.
Functions, institutions of government in countries of Far East; focus on social, economic, historical environments. GE: International and Global Issues; Social Sciences. Same as POLI:3414.

ASIA:3550 Islam, Secularity, Modernity 3 s.h.
How religiosity and secularity are experienced in the Muslim world today.

ASIA:3560 Topics in Asian Religions 3 s.h.
Same as RELS:3560.

ASIA:3655 Zen Buddhism 3 s.h.
Prerequisites: RELS:1404 or RELS:1506 or RELS:1510. Same as RELS:3655.

ASIA:3700 Topics in Global Cinema 3 s.h.
Identification of new models and methods to investigate cinema's relationship to current global issues beyond traditional scholarly focus in Western Europe and the United States; exploration of an emerging field, moving away from the paradigm of national cinema and bringing together shared theoretical frameworks while acknowledging different historical and cultural contexts. Same as WLLC:3700, JPNS:3700.
For thousands of years, Krishna, the dark-skinned flute-player, has been central to the religious experience of many Hindus; his diverse roles as mischievous divine child, sensual teenage cowherd, and adult statesman, warrior, and philosopher celebrated in poetry and prose, painting and sculpture, music, dance, drama, film, and television; exploration of multiple facets of Krishna's character through literary and visual sources, performances; focus on Indian interpretations of erotic content prominent in his story and to the figure of Radha, Krishna's mistress and beloved. Same as RELS:3448.

SOAS:3500 Queerness in South Asian Literature and Cinema
Debates and conflicts around gender or sexual variance in South Asian cultural spheres; shifting representations of queerness—a broad label for non-normative gender/sexual practices or identities—in literature and films from India and neighboring regions; diverse constructions of gender/sexuality in precolonial India; focus on postcolonial period when regulation of deviant gender/sexuality became tied to colonial administration and emerging national identity; how cultural representations constructed normative or deviant genders/sexualities in relation to class, caste, and nationhood.

SOAS:3920 Enlightenment: Cross-Cultural Experiments in Religious Realization
Enlightenment as one of the most important ideas that feeds contemporary religious and spiritual imagination; exploration of this concept in contemporary religious and spiritual discourse. Same as RELS:3582.

SOAS:4103 Individual Hindi for Advanced Students
Readings in medieval and modern Hindi.

SOAS:4802 South Asian Research Seminar
Faculty and student research.

Chinese Culture and Civilization
CHIN:3201 Workshop in Chinese Literary Translation
Translation from Chinese to English with emphasis on literary translation; issues in theory and practice of translation; special features of Chinese as a source language for translation. Prerequisites: CHIN:3102. Same as TRNS:3202.

CHIN:3202 Chinese Literature: Prose
Readings in Chinese prose, primarily fiction, from third century B.C. to 1900 A.D., in English translation.

CHIN:3260 Conversational Business Chinese

CHIN:3302 Introduction to Chinese Linguistics
Aspects of modern Chinese linguistics, such as Chinese phonology, syntax, pedagogical grammar, history of the language. Taught in English. Same as SLA:3302, LING:3302.
Japanese Culture and Civilization

CHIN:3341 Chinese Literature: Poetry 3 s.h.
Readings in classical and modern Chinese poetry in English translation. Same as CL:3341.

CHIN:4203 Modern Chinese Writers 3 s.h.
Readings in modern and contemporary Chinese fiction; in English translation. Same as CL:4203.

CHIN:4204 The Literature of Daoism 3 s.h.
Texts of philosophical, religious Daoism; Daoism in traditional Chinese political theory, literature, the arts, alchemy and medicine, sexual custom, combat. Taught in English. Same as RELS:4404.

CHIN:4206 Transnational Chinese Cinemas 3 s.h.
Films from Mainland China, Hong Kong, Taiwan, and Chinese diasporic communities, silent era to present; relationship of film to nation-state, cultural interflows, media technologies, ideologies. English subtitles. Same as CINE:4674.

Japanese Culture and Civilization

JPN:3128 Introduction to Japanese Linguistics 3 s.h.
Phonology, morphology, syntax, semantics, pragmatics; basic structural features of Japanese language.

JPN:3135 Postmodern Aesthetics and Japanese Culture 3 s.h.
Japanese postmodern trends (from Zen Buddhism to the habits of contemporary otaku consumers); examination of aesthetics including works of literature, film, visual art, and electronic media.

JPN:3201 Workshop in Japanese Literary Translation 3 s.h.
Workshop in translation from Japanese to English, with emphasis on literary translation; issues in theory and practice of translation; special features of Japanese as a source language for translation. Corequisites: JPN:3001, if not taken as a prerequisite. Same as TRNS:3201.

JPN:3202 Traditional Japanese Literature in Translation 3 s.h.
From seventh century to early modern times. Same as CL:3204.

JPN:3203 Modern Japanese Fiction in Translation 3 s.h.
Nineteenth century to present. Same as CL:3203.

JPN:3204 Topics in Japanese Literature in Translation 3 s.h.
Topics vary.

JPN:3205 Major Authors in Modern Japanese Literature 3 s.h.
Modern Japanese literary works in English translation.

JPN:3206 Warriors Dreams 3 s.h.
Images of the warrior in traditional Japanese literature, from poetry of the eighth century to romances of the 19th century; readings in English. Same as CL:3206.

JPN:3208 Japanese Film 3 s.h.
History of Japanese cinema with particular attention paid to Japanese conventions and innovations that differ from classical Hollywood or European paradigms (benshi silent-film narrators, jidaigeki period films, wartime propaganda, postwar melodrama, avant-garde Japanese New Wave, rise of Japanese documentary, anime); screenings may include works by world-famous directors (Mizoguchi, Ozu, Kurosawa) and later masters (Ichikawa Kon, Suzuki Seijun, Itami Juzo); knowledge of film or Japanese is not necessary; all readings in English, films screened with Japanese subtitles.

JPN:3210 Japanese Theater 3 s.h.
Major forms of Japanese theater and performance including Nō and kyōgen, the bunraku puppet theater, kabuki, shingeki “Western” theater, benshi film narration, butoh modern dance, counterculture and street theater of the 1960s, and Japanese musicals; focus on textual analysis and performance practices; weekly screenings of theatrical performances and student-led staged readings of contemporary performances; all readings in English and screenings have subtitles or accompanying scripts; no knowledge of Japanese required.

JPN:3260 Japanese Painting 3 s.h.
Japanese painting in its historical, cultural contexts; focus on developments of successive eras—religious art; narrative, other literary connections; Zen; decorative traditions; popular arts; Japan and the modern world. Same as ARTH:3260.

JPN:3401 Language in Japanese Society 3 s.h.
Aspects of the Japanese language that reflect culture, social structures of Japan; communication styles and strategies, cross-cultural communication, language in media, metaphors.

JPN:3402 Japan: Culture and Communication 3 s.h.

JPN:3500 Business Japanese I 3 s.h.
Introduction to essential linguistic skills and practical knowledge needed to effectively communicate in Japanese in various professional contexts in socially appropriate manners; business-related expressions, vocabulary, honorifics; development of skills utilizing them in verbal and written modes; sociocultural knowledge associated with Japanese business context, including manners and customs; readings, films, discussions. Corequisites: JPN:3002, if not taken as a prerequisite.

JPN:3501 Business Japanese II 3 s.h.
Continuation of JPN:3500; advanced linguistic skills needed to become effective communicators in business or other professional settings; students conduct research, evaluate information, propose a new project, and complete a formal presentation in Japanese; for students who wish to work at Japan-related companies or become professionals in Japan in fields other than business. Prerequisites: JPN:3500.

JPN:3601 Contemporary Japanese Culture 3 s.h.
Cultural texts and practices in contemporary Japan: literature, film, television, manga.
JPNS:3660 Japanese Religion and Thought 3 s.h.
Same as RELS:3660.

JPNS:3700 Topics in Global Cinema 3 s.h.
Identification of new models and methods to investigate cinema's relationship to current global issues beyond traditional scholarly focus in Western Europe and the United States; exploration of an emerging field, moving away from the paradigm of national cinema and bringing together shared theoretical frameworks while acknowledging different historical and cultural contexts. Same as WLLC:3700, ASIA:3700.

JPNS:4201 The Tale of Genji 3 s.h.
Close reading in English of Murasaki Shikibu's Tale of Genji; tale's literary and social contexts, and later reception. Same as CL:4201.

JPNS:4610 Japan—Age of the Samurai 3 s.h.
Society, culture, and politics of feudal Japan; social class, gender, norms, and political and economic developments explored through cinema and literature. Same as HIST:4610.

JPNS:4615 Modern Japan 3 s.h.
Political, social, and cultural developments of Japanese feudalism; feature films, fiction. Same as HIST:4615.

JPNS:4620 Japan-US Relations 3 s.h.
Political, social, economic, and cultural developments in Japan mid-19th to late-20th century. Same as HIST:4620.

Korean Culture and Civilization

ASIA:4050 Two Koreas: Political Economy or Regional Rivalry 3 s.h.
Introduction to the Korean peninsula; focus on nature of North and South Korean regional rivalry and its global impacts; theoretical and historical explanations; various security issues including North Korean nuclear threat, military alliances, and reunification prospects; economic issues including differential growth paths, South Korea's rapid growth, and recent economic woes in both Koreas. Same as POLI:4050.

ASIA:4151 Selected Readings in Korean I 3 s.h.
Korean literary works and various readings related to Korean history, culture, and society; expansion of Korean literacy and cultural knowledge through readings; advanced Korean texts. Prerequisites: ASIA:3102.

ASIA:4152 Selected Readings in Korean II 3 s.h.
Reading various genres of more advanced texts than those covered in ASIA:4150; short stories, poetry, and essays familiar with educated Korean people; texts related to history and current events (e.g., articles from newspapers or magazines); texts written in hangul (Korean characters) and hanja (Chinese characters); Korean literature, history, and culture. Prerequisites: ASIA:3102.

Slavic Culture and Civilization

SLAV:3082 Youth Subcultures After Socialism 3-4 s.h.
Examination of youth subculture (i.e., distinct style and identity, beliefs, value system, fashion and favorite music) on the territory of post-communist Europe and its relations with the mainstream culture; how young people of Russia express their individuality after years of dullness and monotony. GE: Values, Society, and Diversity.

SLAV:3100 West and East: Women in the Slavic World 3 s.h.
Roles of women in two Slavic countries—Islamic Republic of Dagestan in Russia, and the Czech Republic—using approaches from the social sciences and humanities; Christian/Catholic traditions in the western Slavic country (i.e., Czechoslovakia/Czech Republic) and Islamic influences in eastern parts of Russia; analysis of women's egalitarian roles in socialist societies of 1980s, the impact of the major political, economic, and social transitions on women's lives in 1990s.

SLAV:3122 Tolstoy and Dostoevsky 3-4 s.h.
Tolstoy's War and Peace and Anna Karenina; Dostoevsky's Crime and Punishment, The Idiot, The Brothers Karamazov, and short stories. Taught in English. Same as CL:3122.

SLAV:3124 Invitation to Nabokov 3-4 s.h.
Nabokov's works and his writings on Russian literature.

SLAV:3131 Health Care and Health Reforms in Russia 3 s.h.
Societal changes and their continuing effect on the Russian health care system since 1991; guest lectures from public health, nursing, medicine, cultural anthropology. Same as GHS:3131.

SLAV:3202 Russian Literature in Translation 1860-1917 3 s.h.
Survey of major works, figures, and trends of 19th- and early 20th-century Russian literature; age of the Russian novel; works of Turgenev (Fathers and Sons), Tolstoy (Confession), Dostoevsky (The Idiot, The Brothers Karamazov), and Chekhov (plays). Same as CL:3302.

SLAV:3221 Twentieth-Century Czech Authors 3 s.h.
Twentieth-century prose literature of Czechoslovakia; philosophical works of Capek, Hrabal, Kundera, Klima, Havel. Taught in English. Same as CL:3221.

SLAV:3250 Readings in Russian Literature 3 s.h.
Readings of poetry and prose by Russian authors. Requirements: third-year Russian.

SLAV:3480 Literature and Translation 3 s.h.
Translation in the broadest sense; originality, authority, authorship, accuracy, ownership, audience; issues problematizing differences between medium and message. Same as TRNS:3480.

SLAV:3990 Special Readings arr.
Russian-language materials determined by student and instructor. Requirements: 16 s.h. of Russian language instruction.

SLAV:4990 Independent Research arr.
Directed study.
SLAV:4995 Honors  
Requirements: consent of program coordinator.

Graduate

Asian Culture, Linguistics, Pedagogy, Individual Study

ASIA:5102 Individual Korean for Advanced Students  
Korea's modern/traditional culture, history, and current social issues; reading, translating authentic articles. Prerequisites: ASIA:3102.

ASIA:6501 M.A. Thesis  
Offered fall semesters.

ASIA:6502 M.A. Thesis  
Offered spring semesters.

ASIA:6520 Seminar: South Asian Religion  
Topics in South Asian religions. Same as RELS:6520.

ASIA:6901 Second Language Acquisition Research and Theory  
Theories regarding success and failure in acquisition of second or subsequent languages; research, issues. Same as FREN:6901, SLA:6901, SPAN:6901, JPNS:6901.

ASIA:6903 Second Language Acquisition Research and Theory II  
Continuation of SLA:6901. Prerequisites: SLA:6901. Same as SLA:6902, SPAN:6902.

ASIA:6955 Topics in Second Language Acquisition: Listening  
Theory, pedagogy, research, and assessment in second language listening. Same as SLA:6955.

ASIA:7606 Readings in Chinese History  
Same as HIST:7606.

SOAS:5201 Individual Sanskrit for Advanced Students  
Research, translation projects. Requirements: fourth-year proficiency.

Chinese Culture, Linguistics, Pedagogy, Individual Study

CHIN:5021 Seminar in Chinese Fiction  
Novels, novelettes; 16th to 18th centuries (Ming and Qing periods). Requirements: ability to read original texts. Same as CL:5201.

CHIN:5022 Seminar in Chinese Literature  
Requirements: two years of modern Chinese and one year of classical Chinese. Same as CL:5202.

CHIN:6401 Teaching Chinese as a Second Language VI  
Participation in Chinese second language material development projects under instructor's guidance.

CHIN:7401 Teaching Chinese as a Second Language I  
Research, theory on acquisition of Chinese as a non-native language. Same as SLA:7406.

CHIN:7403 Teaching Chinese as a Second Language III  
Development, application of technological teaching/learning materials; emphasis on designing computer-based materials that increase learner interaction in contextualized cultural environments.

CHIN:7404 Teaching Chinese as a Second Language IV  
Overview of goals, concepts, principles, research, and issues in assessment and testing of Chinese as a second language. Same as SLA:7804.

CHIN:7405 Teaching Chinese as a Second Language V  
Seminar on research design; for M.A. students planning to write a thesis or project, or graduate students seeking knowledge in designing qualitative or quantitative studies. Prerequisites: CHIN:7401 and PSQF:4143. Same as SLA:7405.

Japanese Culture, Linguistics, Pedagogy, Individual Study

JPNS:5301 Japanese Linguistics  
Japanese language as linguistic system; basic linguistic terminology; sound systems, grammar, meanings, usages. Prerequisites: JPNS:4502.

JPNS:5401 Japanese as a Foreign Language: Practical Applications  
Instructional methodology, curriculum, and material design; hands-on experience. Prerequisites: JPNS:4502. Same as SLA:5441.

JPNS:5901 Practicum in Teaching Japanese as a Foreign Language  
Teaching apprenticeship guided and supervised by a faculty member skilled in University curriculum and instruction.

JPNS:5902 Individual Japanese for Advanced Students  

JPNS:6403 Special Topics in Japanese Linguistics  
3 s.h.
Topics in applied linguistics and language pedagogy related to Japanese language. Same as SLA:6403.

**JPNS:6901 Second Language Acquisition Research and Theory**  3 s.h.
Theories regarding success and failure in acquisition of second or subsequent languages; research, issues. Same as FREN:6901, ASIA:6901, SLA:6901, SPAN:6901.

**JPNS:7101 Readings in Modern Japanese**  3 s.h.
Readings in modern Japanese.

**JPNS:7201 Seminar in Japanese Literature**  3 s.h.
Requirements: three years of Japanese.

**JPNS:7630 Readings: Japanese History**  arr.
Same as HIST:7630.

**Slavic Culture, Linguistics, Pedagogy, Individual Study**

**SLAV:5220 Seminar: Russian Linguistics**  3 s.h.
Topics may include Russian morphosyntax, colloquial Russian, Russian pragmatics, Slavic gender linguistics.
Biology

Chair
- Bernd Fritzsch

Undergraduate major: biology (B.A., B.S.)
Undergraduate minor: biology
Graduate degrees: M.S. in integrated biology; Ph.D. in integrated biology
Faculty: http://biology.uiowa.edu/people/faculty
Web site: http://www.biology.uiowa.edu

The Department of Biology offers undergraduate and graduate programs that prepare students for careers in a wide variety of fields such as health science or biological research, technology, and education. It also offers several courses that undergraduate students in all majors may use to satisfy the General Education Program Natural Sciences requirement and other courses on topics of general interest for undergraduate non-biology majors, including a First-Year Seminar course designed for entering students. The department also administers the interdisciplinary Biomedical Sciences major leading to a Bachelor of Science degree.

Undergraduate Programs of Study

- Major in biology (Bachelor of Arts, Bachelor of Sciences)
- Minor in biology

The major in biology prepares students to enter research or service careers associated with private industry or government programs and for primary and secondary school teaching. It also prepares them to enter advanced degree programs leading to careers in higher education and to independent research in a variety of biological fields, or for practice in health professions such as medicine, dentistry, pharmacy, nursing, veterinary medicine, medical technology, and physical therapy.

Students majoring in biology may earn a Bachelor of Science or a Bachelor of Arts degree. All students complete the chemistry/physics/mathematics foundation and the biology core. In addition, B.S. students choose one of six tracks, while B.A. students choose courses from several breadth menus and have a wider selection of elective courses.

The department acquaints undergraduate students with the nature of practicing scientists’ work by offering BIOL:3994 Introduction to Research (requires a Department of Biology faculty sponsor), BIOL:4898 Communicating Research (a course supporting students involved in research), and BIOL:4999 Honors Investigations (requires membership in the Biology Honors Program). Students associate with one of the department’s research groups in experiments, discussion of current research, study of specialized topics, and attendance at research seminars.

Students interested in field biology, zoology, or botany may take varied courses in those subjects offered during the summer at Iowa Lakeside Laboratory, in northwestern Iowa.

Bachelor of Science

The Bachelor of Science with a major in biology requires a minimum of 120 s.h., including at least 65-76 s.h. of work for the major. Students must maintain a g.p.a. of at least 2.00 in all courses for the major and in all UI courses for the major. They also must complete the College of Liberal Arts and Sciences General Education Program.

The major is divided into six tracks that emphasize the most dynamic and active areas in the biological sciences. Five of the tracks—cell and developmental biology, genetics and biotechnology, evolutionary biology, neurobiology, and plant biology—emphasize distinct areas. The sixth track—comprehensive biology—provides highly diverse content. Students working toward a B.S. must complete the chemistry/physics/mathematics foundation, the biology core, and one of the six tracks.

Students who wish to apply transfer credit toward graduation with a major in biology should consult their biology advisor.

CHEMISTRY/PHYSICS/MATHEMATICS FOUNDATION

All of these:
- CHEM:1110 & CHEM:1120 Principles of Chemistry I-II 8 s.h.
- CHEM:2210 Organic Chemistry I 3 s.h.

One of these sequences:
- PHYS:1511-PHYS:1512 College Physics I-II 8 s.h.
- PHYS:1611-PHYS:1612 Introductory Physics I-II 8 s.h.

One of these:
- MATH:1460 Calculus for the Biological Sciences 4 s.h.
- MATH:1550 Engineering Mathematics I: Single Variable Calculus 4 s.h.
- MATH:1850 Calculus I 4 s.h.

One of these:
- STAT:2010 Statistical Methods and Computing (preferred for evolution track) 3 s.h.
- STAT:3510 Biostatistics 3 s.h.

BIOLOGY CORE

All of these:
- BIOL:1411-BIOL:1412 Foundations of Biology - Diversity of Form and Function 8 s.h.
- BIOL:2512 Fundamental Genetics 4 s.h.
- BIOL:3172 Evolution 4 s.h.

Tracks for the Bachelor of Science

Bachelor of Science students majoring in biology must select a single track. Each track includes seven or eight courses. The experiential elective requirement may be satisfied by taking an appropriate investigative lab for the track, or through several other options: students who use BIOL:4999 Honors Investigations to fulfill the experiential elective requirement must complete a minimum of 6 s.h. in that course; students who use BIOL:3994 Introduction to Research must complete a minimum of 5 s.h. in that course in combination with 1 s.h. in BIOL:4898 Communicating Research; and students who
use BIOL:4897 Advanced Teaching Internship in Biology must complete a minimum of 4 s.h. in that course.

CELL AND DEVELOPMENTAL BIOLOGY TRACK
The cell and developmental biology track provides education in the structure and function of cells and in the principles of development as they apply to animals and plants. This track is appropriate for students who wish to pursue graduate study in cellular and developmental biology, to prepare for professional study in medicine and other health-related fields, or to take positions in laboratories and companies engaged in cancer research and related fields.

Group 1 (Biochemistry)
One of these:
- BIOC:3110 Biochemistry 3 s.h.
- BIOC:3120 & BIOC:3130 Biochemistry and Molecular Biology I-II 6 s.h.

Group 2 (Cell/Developmental Biology Core)
This course:
- BIOL:2723 Cell Biology 3 s.h.
One of these:
- BIOL:3233 Introduction to Developmental Biology 3 s.h.
- BIOL:3363 Plant Developmental Biology 3 s.h.
One of these:
- BIOL:3626 Cell Biology Laboratory 4 s.h.
- BIOL:3736 Developmental Biology Lab 4 s.h.

Group 3 (Experiential Elective)
One of these:
- BIOL:3626 Cell Biology Laboratory (if not used for group 2 above) 4 s.h.
- BIOL:3656 Neurobiology Laboratory 4 s.h.
- BIOL:3676 Evolution Lab 4 s.h.
- BIOL:3716 Genetics and Biotechnology Lab 4 s.h.
- BIOL:3736 Developmental Biology Lab (if not used for group 2 above) 4 s.h.
- BIOL:3994 & BIOL:4898 Introduction to Research - Communicating Research 6 s.h.
- BIOL:4897 Advanced Teaching Internship in Biology 4 s.h.
- BIOL:4999 Honors Investigations (in cell/developmental biology) 6 s.h.

Group 4 (Electives)
At least two of these, with a minimum of one course numbered 3000 or above:
- BIOL:2254 Endocrinology 3 s.h.
- BIOL:2603 Mechanisms of Aging 3 s.h.
- BIOL:2753 Introduction to Neurobiology 3 s.h.
- BIOL:3233 Introduction to Developmental Biology (if not used for group 2 above) 3 s.h.
- BIOL:3253 Neurobiology 4 s.h.
- BIOL:3314 Genomics 3 s.h.
- BIOL:3343 Animal Physiology 3 s.h.
- BIOL:3363 Plant Developmental Biology (if not used for group 2 above) 3 s.h.
- BIOL:3663 Plant Response to the Environment 3 s.h.
- BIOL:3713 Molecular Genetics 4 s.h.
- BIOL:4213 Bioinformatics 4 s.h.
- BIOL:4333 Genes and Development 3 s.h.
- BIOL:4753 Developmental Neurobiology 3 s.h.
- MICR:2157 General Microbiology 5 s.h.
- MICR:3147 Survey of Immunology 3 s.h.

EVOLUTIONARY BIOLOGY TRACK
The evolutionary biology track provides education in the principles of evolution as they apply to understanding diversity within and among species, from genomic, ecological, and historical perspectives. This track is appropriate for students who wish to pursue graduate study in evolutionary biology and related fields or to take positions in laboratories using population genetics or phylogenetic approaches such as forensics, fisheries, and human disease mapping.

Group 1 (Biochemistry)
One of these:
- BIOC:3110 Biochemistry 3 s.h.
- BIOC:3120 & BIOC:3130 Biochemistry and Molecular Biology I-II 6 s.h.

Group 2 (Evolution Core)
Both of these:
- BIOL:2673 Ecology 3 s.h.
- BIOL:3676 Evolution Lab 4 s.h.
One of these:
- BIOL:3314 Genomics 3 s.h.
- BIOL:4273 Population Genetics and Molecular Evolution 3 s.h.
- BIOL:4373 Molecular Phylogenetics 3 s.h.

Group 3 (Experiential Elective)
One of these:
- BIOL:3716 Genetics and Biotechnology Lab 4 s.h.
- BIOL:3994 & BIOL:4898 Introduction to Research - Communicating Research 6 s.h.
- BIOL:4897 Advanced Teaching Internship in Biology 4 s.h.
- BIOL:4999 Honors Investigations (in evolution) 6 s.h.
- EVNS:3095 Field Ecology 4 s.h.
- An approved Iowa Lakeside Laboratory course 4 s.h.

Group 4 (Electives)
At least two of these, with a minimum of one course numbered 3000 or above:
- BIOL:2346 Vertebrate Zoology 4 s.h.
- BIOL:2374 Biogeography 3 s.h.
- BIOL:3244 Animal Behavior 3-5 s.h.
- BIOL:3314 Genomics (if not used for group 2 above) 3 s.h.
- BIOL:3663 Plant Response to the Environment 3 s.h.
- BIOL:4213 Bioinformatics 4 s.h.
BIOL:4273 Population Genetics and Molecular Evolution (if not used for group 2 above) 3 s.h.
BIOL:4373 Molecular Phylogenetics (if not used for group 2 above) 3 s.h.
ANTH:3307 Modern Human Origins 3 s.h.
ANTH:3325 Human Evolutionary Genetics 3 s.h.
EES:3220 Evolution of the Vertebrates 3 s.h.
EES:4440 Phylogenetics and Biodiversity 3 s.h.
EES:4700 Evolution of Ecosystems 3 s.h.

GENETICS AND BIOTECHNOLOGY TRACK
The genetics and biotechnology track provides education in the key principles of transmission, maintenance, regulation, and manipulation of genes. This track is appropriate for students who wish to pursue graduate study in fields related to genetics or to enter the modern biotechnology industry. It also provides excellent preparation for professional study in medicine and other health-related fields.

Group 1 (Biochemistry)
One of these:
BIOC:3110 Biochemistry 3 s.h.
BIOC:3120 & BIOC:3130 Biochemistry and Molecular Biology I-II 6 s.h.

Group 2 (Genetics Core)
All of these:
BIOL:3314 Genomics 3 s.h.
BIOL:3713 Molecular Genetics 4 s.h.
BIOL:3716 Genetics and Biotechnology Lab 4 s.h.

Group 3 (Experiential Elective)
One of these:
BIOL:3626 Cell Biology Laboratory 4 s.h.
BIOL:3676 Evolution Lab 4 s.h.
BIOL:3736 Developmental Biology Lab 4 s.h.
BIOL:3994 & BIOL:4898 Introduction to Research - Communicating Research 6 s.h.
BIOL:4897 Advanced Teaching Internship in Biology 4 s.h.
BIOL:4999 Honors Investigations (in neurobiology) 6 s.h.

Group 4 (Electives)
At least two of these, with a minimum of one course numbered 3000 or above:
BIOL:2603 Mechanisms of Aging 3 s.h.
BIOL:2723 Cell Biology 3 s.h.
BIOL:3233 Introduction to Developmental Biology 3 s.h.
BIOL:3363 Plant Developmental Biology 3 s.h.
BIOL:3663 Plant Response to the Environment 3 s.h.
BIOL:4213 Bioinformatics 4 s.h.
BIOL:4273 Population Genetics and Molecular Evolution 3 s.h.
BIOL:4333 Genes and Development 3 s.h.
BIOL:4373 Molecular Phylogenetics 3 s.h.
MICR:3170 Microbial Genetics 3 s.h.

NEUROBIOLOGY TRACK
The neurobiology track provides education in nervous system function at all levels, from molecular to systems biology. This track is appropriate for students who wish to pursue graduate study in neurobiology and related areas, including psychology and the social sciences; to enter laboratories that study the therapeutic basis of neurological disorders; or to work in pharmaceutical companies. It also provides good preparation for professional study in medicine and other health-related fields.

Group 1 (Biochemistry)
One of these:
BIOC:3110 Biochemistry 3 s.h.
BIOC:3120 & BIOC:3130 Biochemistry and Molecular Biology I-II 6 s.h.

Group 2 (Neurobiology Core)
All of these:
BIOL:2753 Introduction to Neurobiology 3 s.h.
BIOL:3244 Animal Behavior 5 s.h.
BIOL:3253 Neurobiology 4 s.h.
BIOL:3656 Neurobiology Laboratory 4 s.h.

Group 3 (Experiential Elective)
One of these:
BIOL:3626 Cell Biology Laboratory 4 s.h.
BIOL:3676 Evolution Lab 4 s.h.
BIOL:4999 Honors Investigations (in neurobiology) 6 s.h.

Group 4 (Electives)
At least two of these, with a minimum of one course numbered 3000 or above:
BIOL:2254 Endocrinology 3 s.h.
BIOL:2603 Mechanisms of Aging 3 s.h.
BIOL:2723 Cell Biology 3 s.h.
BIOL:3233 Introduction to Developmental Biology 3 s.h.
BIOL:3343 Animal Physiology 3 s.h.
BIOL:4353 Neurophysiology 3 s.h.
BIOL:4753 Developmental Neurobiology 3 s.h.

PLANT BIOLOGY TRACK
The plant biology track provides education in how plants grow, how they have evolved, and how they interact with other organisms. This track is appropriate for students who wish to pursue graduate study in biology specializing in plants. It also is good preparation for positions in plant biotechnology companies that work in biofuels development, crop improvement, or carbon dioxide sequestration, or in agencies dedicated to the conservation of natural lands.
**Group 1 (Biochemistry)**
One of these:
- BIOC:3110 Biochemistry 3 s.h.
- BIOC:3120 & BIOC:3130 Biochemistry and Molecular Biology I-II 6 s.h.

**Group 2 (Plant Biology Core)**
Both of these:
- BIOL:3363 Plant Developmental Biology 3 s.h.
- BIOL:3663 Plant Response to the Environment 3 s.h.
One of these:
- BIOL:3676 Evolution Lab 4 s.h.
- BIOL:3716 Genetics and Biotechnology Lab 4 s.h.

**Group 3 (Experiential Elective)**
One of these:
- BIOL:3626 Cell Biology Laboratory 4 s.h.
- BIOL:3676 Evolution Lab (if not used for group 2 above) 4 s.h.
- BIOL:3716 Genetics and Biotechnology Lab (if not used for group 2 above) 4 s.h.
- BIOL:3736 Developmental Biology Lab 4 s.h.
- BIOL:3994 & BIOL:4898 Introduction to Research - Communicating Research 6 s.h.
- BIOL:4897 Advanced Teaching Internship in Biology 4 s.h.
- BIOL:4999 Honors Investigations (in plant biology) 6 s.h.
- ENVS:3095 Field Ecology 4 s.h.
An approved Iowa Lakeside Laboratory course on plant diversity or plant ecology 4 s.h.

**Group 4 (Electives)**
At least two of these, with a minimum of one course numbered 3000 or above:
- BIOL:2374 Biogeography 3 s.h.
- BIOL:2673 Ecology 3-4 s.h.
- BIOL:2723 Cell Biology 3 s.h.
- BIOL:3233 Introduction to Developmental Biology 3 s.h.
- BIOL:3314 Genomics 3 s.h.
- BIOL:3713 Molecular Genetics 4 s.h.
- BIOL:4213 Bioinformatics 4 s.h.
- BIOL:4273 Population Genetics and Molecular Evolution 3 s.h.
- EES:4700 Evolution of Ecosystems 3 s.h.

**Group 5 (Investigative Lab)**
One of these:
- BIOL:3626 Cell Biology Laboratory 4 s.h.
- BIOL:3656 Neurobiology Laboratory 4 s.h.
- BIOL:3676 Evolution Lab 4 s.h.
- BIOL:3716 Genetics and Biotechnology Lab 4 s.h.
- BIOL:3736 Developmental Biology Lab 4 s.h.

**Group 6 (Experiential Elective)**
At least one of these:
- BIOL:3626 Cell Biology Laboratory (if not used for group 5 above) 4 s.h.
- BIOL:3656 Neurobiology Laboratory (if not used for group 5 above) 4 s.h.
- BIOL:3676 Evolution Lab (if not used for group 5 above) 4 s.h.
- BIOL:3716 Genetics and Biotechnology Lab (if not used for group 5 above) 4 s.h.
- BIOL:3736 Developmental Biology Lab (if not used for group 5 above) 4 s.h.
- BIOL:3994 & BIOL:4898 Introduction to Research - Communicating Research 6 s.h.
- BIOL:4897 Advanced Teaching Internship in Biology 4 s.h.
- BIOL:4999 Honors Investigations 6 s.h.
An approved Iowa Lakeside Laboratory course 4 s.h.

**Group 1 (Biochemistry and Molecular Biology)**
One of these sequences:
- BIOC:3120 & BIOC:3130 Biochemistry and Molecular Biology I-II 6 s.h.
- BIOL:3314 & BIOC:3110 Genomics - Biochemistry 6 s.h.
- BIOL:3713 & BIOC:3110 Molecular Genetics - Biochemistry 7 s.h.

**Group 2 (Cellular Biology)**
One of these:
- BIOL:2723 Cell Biology 3 s.h.
- BIOL:2753 Introduction to Neurobiology 3 s.h.

**Group 3 (Biological Systems)**
One of these:
- BIOL:2254 Endocrinology 3 s.h.
- BIOL:3233 Introduction to Developmental Biology 3 s.h.
- BIOL:3244 Animal Behavior 3-5 s.h.
- BIOL:3343 Animal Physiology 3 s.h.
- BIOL:3363 Plant Developmental Biology 3 s.h.
- BIOL:3663 Plant Response to the Environment 3 s.h.

**Group 4 (Population Biology)**
One of these:
- BIOL:2374 Biogeography 3 s.h.
- BIOL:2673 Ecology 3 s.h.
- BIOL:4273 Population Genetics and Molecular Evolution 3 s.h.

**Group 5 (Investigative Lab)**
One of these:
- BIOL:3626 Cell Biology Laboratory 4 s.h.
- BIOL:3656 Neurobiology Laboratory 4 s.h.
- BIOL:3676 Evolution Lab 4 s.h.
- BIOL:3716 Genetics and Biotechnology Lab 4 s.h.
- BIOL:3736 Developmental Biology Lab 4 s.h.

**Group 6 (Experiential Elective)**
At least one of these:
- BIOL:3626 Cell Biology Laboratory (if not used for group 5 above) 4 s.h.
- BIOL:3656 Neurobiology Laboratory (if not used for group 5 above) 4 s.h.
- BIOL:3676 Evolution Lab (if not used for group 5 above) 4 s.h.
- BIOL:3716 Genetics and Biotechnology Lab (if not used for group 5 above) 4 s.h.
- BIOL:3736 Developmental Biology Lab (if not used for group 5 above) 4 s.h.
- BIOL:3994 & BIOL:4898 Introduction to Research - Communicating Research 6 s.h.
- BIOL:4897 Advanced Teaching Internship in Biology 4 s.h.
- BIOL:4999 Honors Investigations 6 s.h.
An approved Iowa Lakeside Laboratory course 4 s.h.

**COMPREHENSIVE BIOLOGY TRACK**
The comprehensive biology track offers a diverse, well-balanced introduction to the major fields of biology. This track prepares students for graduate study in the biological sciences and in science education and for work in laboratories that engage in research and applications in many fields of biology. It also provides broadly based preparation for professional study in medicine and other health-related fields.

**Group 1 (Biochemistry and Molecular Biology)**
One of these sequences:
Suggested Schedule for First-Year Science Courses

The following first-year schedule of science courses is recommended for all biology majors (B.A. or B.S. students).

First-semester science courses:

- CHEM:1110 Principles of Chemistry I 4 s.h.
- Calculus or mathematics leading to calculus 5-10 s.h.

Second-semester science courses:

- BIOL:1411 Foundations of Biology 4 s.h.
- CHEM:1120 Principles of Chemistry II 4 s.h.
- Calculus (if not taken during the first semester) 5 s.h.

Bachelor of Arts

The Bachelor of Arts with a major in biology requires a minimum of 120 s.h., including at least 62-73 s.h. of work for the major. Students must maintain a g.p.a. of at least 2.00 in all courses for the major and in all UI courses for the major. They also must complete the College of Liberal Arts and Sciences General Education Program.

The major for the Bachelor of Arts prepares students for graduate study in the biological sciences and is especially appropriate for those interested in careers in biological science education at all levels. It also provides suitable preparation for professional positions in laboratory or field research or for professional study in medicine and other health-related fields.

The B.A. program is broadly based. It introduces students to key concepts in important areas of biology and, compared to the B.S. program, provides more flexibility in choosing elective courses. Students working toward a Bachelor of Arts must complete the chemistry/physics/math foundation; the biology core; one course from each of three breadth menus; one course with a laboratory; and three elective courses, which may include one course in the history or philosophy of science.

Students who wish to apply transfer credit toward graduation with a major in biology should consult their biology advisor.

CHEMISTRY/PHYSICS/MATHEMATICS FOUNDATION

All of these:

- CHEM:1110 & CHEM:1120 Principles of Chemistry I-II 8 s.h.
- CHEM:2210 Organic Chemistry I 3 s.h.

One of these:

- BIOL:3110 Biochemistry 3 s.h.
- CHEM:2220 Organic Chemistry II 3 s.h.

One of these sequences:

- PHYS:1511-PHYS:1512 College Physics I-II 8 s.h.
- PHYS:1611-PHYS:1612 Introductory Physics I-II 8 s.h.

One of these:

- MATH:1460 Calculus for the Biological Sciences 4 s.h.
- MATH:1550 Engineering Mathematics I: Single Variable Calculus 4 s.h.
- MATH:1850 Calculus I 4 s.h.

One of these:

- STAT:2010 Statistical Methods and Computing 3 s.h.
- STAT:3510 Biostatistics 3 s.h.

BIOLOGY CORE

All of these:

- BIOL:1411-BIOL:1412 Foundations of Biology - Diversity of Form and Function 8 s.h.
- BIOL:2512 Fundamental Genetics 4 s.h.
- BIOL:3172 Evolution 4 s.h.

BREADTH MENUS

Students must complete at least one course from each of the following three breadth menus.

Molecular and Cellular Biology

- BIOL:2723 Cell Biology 3 s.h.
- BIOL:2753 Introduction to Neurobiology 3 s.h.
- BIOL:3314 Genomics 3 s.h.
- BIOL:3713 Molecular Genetics 4 s.h.

Developmental Biology and Physiology

- BIOL:2254 Endocrinology 3 s.h.
- BIOL:3233 Introduction to Developmental Biology 3 s.h.
- BIOL:3343 Animal Physiology 3 s.h.
- BIOL:3363 Plant Developmental Biology 3 s.h.
- BIOL:3663 Plant Response to the Environment 3 s.h.

Ecology and Evolutionary Biology

- BIOL:2374 Biogeography 3 s.h.
- BIOL:2673 Ecology 3 s.h.
- BIOL:4273 Population Genetics and Molecular Evolution 3 s.h.

COURSE WITH A LABORATORY

One of these (must not have been used as a breadth menu course):

- BIOL:2346 Vertebrate Zoology 4 s.h.
- BIOL:3244 Animal Behavior 5 s.h.
- BIOL:3626 Cell Biology Laboratory 4 s.h.
- BIOL:3656 Neurobiology Laboratory 4 s.h.
- BIOL:3676 Evolution Lab 4 s.h.
- BIOL:3716 Genetics and Biotechnology Lab 4 s.h.
- BIOL:3736 Developmental Biology Lab 4 s.h.
- BIOL:4999 Honors Investigations 6 s.h.
- BIOL:3140 Experimental Biochemistry 2 s.h.
- EES:3210 Principles of Paleontology 3 s.h.
- MICR:2157 General Microbiology 5 s.h.
- Iowa Lakeside Laboratory courses (students consult their advisors) 4-5 s.h.

ELECTIVES

Students complete at least three elective courses, which may include any course chosen from a breadth menu or from the list of courses with a laboratory that has not been used to satisfy those requirements, any other 2-4 s.h.
course numbered 2000 or above except for BIOL:2211 Genes, Genomes, and the Human Condition offered by the Department of Biology, any approved advanced biology course taught at Iowa Lakeside Laboratory (p. 1212) (students should consult their advisors), and/or any course(s) chosen from the following list.

ANTH:3307 Modern Human Origins 3 s.h.
ANTH:3310 Primate Behavior: Sex Lives of Apes and Monkeys 3 s.h.
ANTH:3322 Primate Evolutionary Biology 3 s.h.
ANTH:3325 Human Evolutionary Genetics 3 s.h.
ASPI:3160 Biology of Aging 3 s.h.
EES:3070 Marine Ecosystems and Conservation 3 s.h.
EES:3220 Evolution of the Vertebrates 3 s.h.
EES:4700 Evolution of Ecosystems 3 s.h.
HHP:4130 Skeletal Muscle Physiology 3 s.h.
MICR:3147 Survey of Immunology 3 s.h.

One of the electives may be chosen from these:
GEOG:3110/GHS:4111 Geography of Health 3 s.h.
HIST:4160/GHS:4160 History of Public Health 3 s.h.
HIST:4162/GHS:4162 History of Global Health 3 s.h.
HIST:4419 Ancient and Medieval Science 3 s.h.
PHIL:3604 Introduction to Philosophy of Science 3 s.h.

In addition, students who have passed CHEM:2210 Organic Chemistry I, CHEM:2220 Organic Chemistry II, and BIOL:3110 Biochemistry may use BIOL:3110 Biochemistry as a biology elective. Students may count BIOL:3994 Introduction to Research (maximum of 3 s.h.) and BIOL:4897 Advanced Teaching Internship in Biology (maximum of 2 s.h.) only once toward the B.A. elective requirement.

Suggested Schedule for First-Year Science Courses
The following first-year schedule of science courses is recommended for all biology majors (B.A. or B.S. students).

First-semester science courses:
CHEM:1110 Principles of Chemistry I 4 s.h.
Calculus or mathematics leading to calculus 5-10 s.h.

Second-semester science courses:
BIOL:1411 Foundations of Biology 4 s.h.
CHEM:1120 Principles of Chemistry II 4 s.h.
Calculus (if not taken during the first semester) 5 s.h.

B.A. or B.S. with Teacher Licensure
Biology majors interested in earning licensure to teach in elementary and/or secondary schools must complete the College of Education's Teacher Education Program (TEP) in addition to the requirements for the major and all requirements for graduation. The TEP requires several College of Education courses and student teaching. Contact the Office of Education Services for details.

Students must satisfy all degree requirements and complete Teacher Education Program licensure before degree conferral.

Students with a strong interest in science teaching may complete a major offered by the Science Education Program. Students choose one of five emphases—biology, chemistry, earth science, physics, or all-science—and earn a Bachelor of Science degree. They may apply for admission to the Teacher Education Program. See Science Education in the Catalog.

Four-Year Graduation Plan
The following checkpoints list the minimum requirements students must complete by certain semesters in order to stay on the University's Four-Year Graduation Plan. (Courses in the major are those required to complete the major; they may be offered by departments other than the major department.)

Bachelor of Science
Before the fifth semester begins: BIOL:1412 Diversity of Form and Function, CHEM:2210 Organic Chemistry I, STAT:2010 Statistical Methods and Computing or STAT:3510 Biostatistics, and two other courses in the major
Before the seventh semester begins: BIOL:2512 Fundamental Genetics; BIOL:3172 Evolution; PHYS:1511 College Physics I and PHYS:1512 College Physics II or equivalents; five or six more courses in the major, including an investigative lab; and at least 90 s.h. earned toward the degree
Before the eighth semester begins: two or three more courses in the major

Bachelor of Arts
Before the fifth semester begins: BIOL:1412 Diversity of Form and Function, CHEM:2210 Organic Chemistry I, STAT:2010 Statistical Methods and Computing or STAT:3510 Biostatistics, and three other courses in the major
Before the seventh semester begins: BIOL:2512 Fundamental Genetics, BIOL:3172 Evolution, PHYS:1511 College Physics I and PHYS:1512 College Physics II or equivalents, five or six more courses in the major, and at least 90 s.h. earned toward the degree
Before the eighth semester begins: two or three more courses in the major
**Honors in the Major**

Students majoring in biology have the opportunity to graduate with honors in the major. The Biology Honors Program introduces students to the pursuits of practicing scientists. Honors students associate with one of the department's research groups and participate in an independent research project guided by a faculty member (the research supervisor).

Biology honors students write a thesis based on an interesting biological problem, which is usually identified by the research supervisor. The thesis should clearly document that the student has acquired the necessary experimental skills to address specific questions and test specific hypotheses related to the research problem. Honors Seminar in Biology (BIOL:4998), or an equivalent seminar, provides students with an ideal opportunity to improve their skills in seminar presentation and in writing scientific English. Throughout undergraduate residence, departmental honors students also may enroll in honors sections of courses offered by the Department of Biology and by other departments and programs.

To graduate with honors in the biology major, students must fulfill the following requirements:

- complete the requirements for a major in biology (either B.S. or B.A.) with a g.p.a. of at least 3.33 in all course work in the major taken at the University of Iowa (including all biology courses and cognates in chemistry, physics, biochemistry, mathematics, and statistics);
- complete 2 s.h. in either BIOL:4998 Honors Seminar in Biology or an advanced biology seminar course;
- complete a minimum of 6 s.h. (taken over two or more semesters) of BIOL:4999 Honors Investigations;
- write a brief research proposal summarizing the background and goals of their proposed honors research;
- upon completion of their research, submit an acceptable honors thesis; and
- give a brief oral presentation of their research findings to other biology honors students.

Students pursuing a B.S. in biology may apply 6 s.h. of BIOL:4999 Honors Investigations toward the experiential elective requirement in an appropriate track. Students pursuing a B.A. in biology may apply 6 s.h. of BIOL:4999 toward the required course with a laboratory and count the 2 s.h. earned in BIOL:4998 Honors Seminar in Biology toward the elective requirement.

Students who satisfy the requirements for honors in the biology major will also satisfy the Level Two: Learning by Doing requirement of the University Honors Curriculum.

Biology majors interested in graduating with honors in the major should contact the biology honors advisor as early as possible, preferably during their sophomore or junior year, so that they may be matched with an appropriate lab. Visit Biology Honors Program to learn more about honors study in the department.

**Joint B.A./M.A.T. with Science Education Subprogram**

Bachelor of Arts students interested in pursuing a graduate degree in teaching may apply to the joint Bachelor of Arts/Master of Arts in Teaching program offered by the College of Liberal Arts and Sciences and the College of Education. Designed for undergraduates majoring in biology, chemistry, environmental sciences, or physics, the joint program enables students to earn a B.A. and an M.A.T. in five years by beginning to earn graduate credit during their fourth year of undergraduate study and by counting up to 18 s.h. of qualifying credit toward both degrees. For more information, see "Joint B.A./M.A.T.: Science Education" in the Teaching and Learning (College of Education) section of the Catalog. Interested students should consult an advisor.

**Joint B.A./Graduate Degrees in Epidemiology**

Bachelor of Arts students majoring in biology who are interested in earning a Master of Science in epidemiology or a Master of Public Health with epidemiology subprogram may apply to the joint B.A./M.P.H. or joint B.A./M.S. program offered by the College of Liberal Arts and Sciences and the College of Public Health. The joint programs permit students to count 12 s.h. of credit toward the requirements of both degrees, enabling them to begin the study of public health before they complete the bachelor's degree. For information about the M.P.H., see "Epidemiology Subprogram" in the Master of Public Health section of the Catalog; for information about the M.S. program, see Epidemiology in the Catalog.

**Minor**

The minor in biology requires a minimum of 15 s.h. in biology courses, including 12 s.h. in courses numbered 2000 or above offered by the Department of Biology at the University of Iowa or in approved Iowa Lakeside Laboratory courses. Students must maintain a cumulative g.p.a. of at least 2.00 in all courses for the minor and in all UI courses for the minor. Course work in the minor may not be taken pass/nonpass. Students may not count transfer courses as courses numbered 2000 or above.

**Graduate Programs of Study**

- Master of Science in integrated biology
- Doctor of Philosophy in integrated biology

The Department of Biology's graduate programs in integrated biology emphasize original research and developing the skills essential for publishing and communicating research findings to the scientific community. These programs prepare students for careers in academic research, science education, industry, government, and a variety of other careers in which their scientific expertise can be used. Research programs in the department cover many areas of the biological sciences: cell biology, developmental biology, ecology, evolution, genetics, and neurobiology. Graduate study in the department provides students with a broad understanding of these basic areas.

When a new graduate student is admitted, he or she is assigned a temporary advisor. The student and advisor discuss the student's educational background and
formulate a first-semester study plan before the student registers for courses. The programs allow each student to tailor course work to his or her research interest. Students may be advised to take specific course work in order to enhance their background in certain areas.

During the first year, students whose preparation in chemistry, genetics, mathematics, and physics does not meet the department's graduate entry requirements may need to remedy deficiencies by taking appropriate course work.

Minimum entry requirements are:

- two semesters of organic chemistry, or one semester of organic chemistry and one semester of biochemistry;
- one semester of calculus;
- two semesters of college physics; and
- 20 s.h. of course work in biology.

A student with a bachelor's degree outside the biological sciences may request modification of certain area requirements. The Graduate Affairs Committee decides whether portions of the requirements may be waived.

**Master of Science**

The Master of Science in integrated biology requires 30 s.h. of graduate credit with thesis or 34 s.h. of graduate credit without thesis. Entering students are admitted only to the thesis program; the nonthesis degree is an exit program.

All M.S. students take a seminar (2 s.h.) with a substantial writing and oral presentation requirement and two advanced lecture-based courses in biology (or courses approved by the Graduate Affairs Committee). Students receive academic credit for courses required for an M.S. or Ph.D. but not for courses taken to remedy undergraduate deficiencies.

Thesis students may count a maximum of 9 s.h. of research credit toward the 30 s.h. required for the master's degree with thesis. Remaining course work is tailored to the student's background and career goals and is selected in consultation with the student's advisory committee. The thesis is based on original research. After the thesis is accepted by the student's supervisor and advisory committee, the student must pass an oral examination based on the thesis research and on related subjects.

Nonthesis students must write a library research report for a maximum of 4 s.h. of credit. They may apply up to 8 s.h. of research credit toward the 34 s.h. required for the master's degree without thesis.

Visit Integrated Biology Graduate Program for more detailed information about the Master of Science program.

**Doctor of Philosophy**

The Doctor of Philosophy in integrated biology requires a minimum of 72 s.h. of graduate credit.

New Ph.D. students will do three laboratory rotations with different faculty during their first semester (August-December). Students consult with their temporary advisors and with prospective faculty research sponsors before identifying their preferences for research rotations. Based on their rotations, they choose a laboratory affiliation for their thesis. This is done late in the first semester.

During the first year (both semesters), students are required to enroll in BIOL:6298 Concepts, Models, and Systems in Biology (COSMOS) Seminar, which introduces them to multiple levels of biological analysis and provides them with significant opportunities to hone their skills in written and oral communication. At the end of the first year, students take a qualifying exam that consists of essay questions based on major themes in biology. Students must perform satisfactorily on this exam in order to continue in the program.

During the first two years, students must enroll in at least two advanced lecture courses (or courses approved by the Graduate Affairs Committee), one seminar course (2 s.h.) that has a significant writing component, and BIOL:6188 Seminar: Writing in Natural Sciences.

The comprehensive examination is taken in the summer of the second year in residence. Students prepare a National Institutes of Health/National Science Foundation-style grant application on their planned thesis work and orally defend this work in front of a review committee. Students must demonstrate knowledge of biology fundamentals and the analytic and synthetic skills necessary to become creative, independent scientists. Once they complete the course work and proficiency requirements and pass the comprehensive examination, students may be admitted to full candidacy for the Ph.D.

Ph.D. students must serve as teaching assistants for at least two semesters in order to develop and demonstrate teaching. The first teaching semester takes place during the spring of the student’s first year and preceded by extensive departmental training in effective teaching skills.

The department also offers career seminars that explore types of employment outside of academic research, including teaching careers and other topics.

The program culminates in students’ preparation of a dissertation based on original independent research. Students must pass a final examination that covers the thesis and its specialized field before the Ph.D. is awarded.

Visit Integrated Biology Graduate Program for more detailed information about the Doctor of Philosophy program.

**Admission**

Individuals who wish to pursue graduate study in integrated biology may apply to the Doctor of Philosophy program or the Master of Science with thesis program. The M.S. without thesis is an exit program; it does not admit entering graduate students. Application materials for the graduate program must be uploaded to the University’s Office of Admissions website. These are reviewed by the Department of Biology Graduate Recruitment and Admissions Committee. For detailed instructions, visit Apply on the integrated biology graduate program web site.

Applicants must hold a valid B.A. or B.S. from an accredited institution. Applicants should supply official transcripts from each undergraduate and graduate institution they have attended along with scores from the Graduate Record Examination (GRE) General Test (verbal,
The GRE Subject Test in biology or biochemistry is optional but not required. Applicants whose first language is not English must score at least 100 (Internet-based) on the Test of English as a Foreign Language (TOEFL) and have their score sent to the Office of Admissions. International applicants who received their degrees (either bachelor's or master's) from a U.S. institution are exempt from this requirement. All international students whose first language is not English are required to take the on-campus English Proficiency Evaluation before they first enroll for classes.

Successful applicants for graduate admission typically have a g.p.a. of at least 3.00 (on a 4.00 scale) and a Graduate Record Examination (GRE) General Test score above 1200 (combined verbal and quantitative) on the old GRE or 308 (combined verbal and quantitative) on the revised GRE. The admissions committee also considers letters of recommendation, research experience, and other appropriate criteria.

Although most applicants have completed undergraduate programs in biology, the department also considers applicants with backgrounds in related sciences, providing they have taken the required course work.

Students applying for admission to the M.S. with thesis program should have a bachelor's degree in one of the biological sciences. Students with bachelor's degrees in other areas may need to register as nondegree students and complete the equivalent of the department's bachelor's degree program prior to consideration for admission. Nondegree students must complete chemistry, physics, and calculus requirements in addition to the biology courses listed in the undergraduate program. Nondegree students should consult the department's graduate program administrator before applying for admission.

Applications are due by January 1 (visit Integrated Biology Graduate Program for updated deadline information) and must include the applicant's GRE test scores. In order to meet the deadline, applicants must take the GRE in October or earlier. Late applications are considered as placement and funding permit.

Applicants must meet the admission requirements of the Graduate College; see the Manual of Rules and Regulations of the Graduate College.

Financial Support

All graduate students making satisfactory progress toward the Ph.D. receive stipend and tuition support from non-University of Iowa fellowships and from teaching assistantships or research assistantships available through individual research grants administered by faculty members or by the University. First-year Ph.D. students are supported by department fellowships during the research rotation period and by teaching assistantships during the spring semester. M.S. students generally are supported by available research or teaching assistantships. Offers of admission include information about offers of financial support.

Facilities

The department is housed in two contiguous buildings, with modern facilities and equipment for state-of-the-art research.

Facilities include the Keck Dynamic Image Analysis Facility, which couples sophisticated state-of-the-art microscopy and computerized motion analysis to permit three-dimensional real-time analysis of cell movement in vitro and in situ. The Roy J. Carver Center for Genomics houses the department's DNA sequencing, oligo synthesis, quantitative PCR, functional genomics/microarray facilities, and informatics facilities. The Roy J. Carver Center for Imaging is a microscopy and imaging facility; its confocal microscope is available for teaching and research.

A large greenhouse is used in plant research and education.

The department also houses animal-care facilities suitable for mice, rats, rabbits, *Xenopus laevis*, and zebra fish. These facilities are managed by the University's animal care unit, which is accredited by the Association for Assessment and Accreditation of Laboratory Animal Care. A central University facility provides assistance in the preparation of transgenic mice.

The department is home to the Developmental Studies Hybridoma Bank, which is affiliated with the National Institutes of Health. The hybridoma bank collects and distributes monoclonal antibodies that originate in laboratories all over the world. Its collection now contains more than 3,500 monoclonal antibodies that are distributed to users internationally for a modest fee.

In addition to department facilities, the University offers a genomic sequencing service, a DNA oligonucleotide synthesis and enzyme lab, oligopeptide synthesis and sequencing equipment, and mass- and NMR spectroscopy facilities. The Center for Biocatalysis and Bioprocessing is available for growing large amounts of microorganisms (e.g., 100 liters) for use in protein isolation.

Iowa Lakeside Laboratory

The Iowa Lakeside Laboratory is a field station run cooperatively by the University of Iowa, Iowa State University, and the University of Northern Iowa. Located on West Lake Okoboji, in northwestern Iowa, the laboratory affords excellent conditions for summer study in field biology, limnology, phycology, aquatic ecology, pollination biology, and plant taxonomy. It offers a wide variety of summer courses at the undergraduate and graduate levels. Students should check with their advisors to determine whether specific courses may be counted toward requirements for graduation. See Iowa Lakeside Laboratory (University College) in the Catalog or visit the Lakeside Laboratory web site.

Courses

Many courses include laboratory, discussion, and/or field components.

Lower-Level Undergraduate

**BIOL:1411 Foundations of Biology** 4 s.h.

Unifying concepts of living systems; emphasis on common properties and processes; chemical and cellular basis of life, genetics, and evolution. Prerequisites: CHEM:1110. GE: Natural Sciences with Lab.
BIOL:1412 Diversity of Form and Function 4 s.h.
Underlying unifying concepts of life; emphasis on diversity of living systems; the tree of life, cellular evolution, prokaryotic and eukaryotic diversity, plant and animal form and function; interactions among diverse forms of life and their environment. Prerequisites: BIOL:1411. Requirements: grade of C- or higher in BIOL:1411. GE: Natural Sciences with Lab.

BIOL:1808 Ways of Knowing Science 1 s.h.
Science as a powerful way of knowing based on experimentation and observation of natural world; introduction to subdisciplines of scientific research; scope and methods of scientific research; questions that scientific research seek answers for; methods that scientists use to obtain answers to their questions; how science affects us personally and how it affects the rest of society; research seminars, discussion, and exploration.

BIOL:2254 Endocrinology 3 s.h.
Production and effect of hormonal chemical messengers of secretory glands; emphasis on cell signaling in vertebrate systems; actions of hormones in regulating growth, physiology, and reproduction; organ to molecular levels. Prerequisites: BIOL:1411 and BIOL:1412. Recommendations: CHEM:2210.

BIOL:2346 Vertebrate Zoology 4 s.h.
Vertebrate diversity, success in relation to evolutionary history, and adaptive radiation of fish, amphibians, reptiles, birds, mammals; physiological, morphological, behavioral, life history adaptations; vertebrate zoogeography, systematics, patterns of reproduction, social systems. Prerequisites: BIOL:1411 and BIOL:1412.

BIOL:2374 Biogeography 3 s.h.
Patterns of plant and animal distribution and their interpretation; historical geography including glaciation and plate tectonics; ecological geography, including physical factors (e.g., climate and geology); applications to conservation in diverse regions. Prerequisites: GEOG:1020 or BIOL:1141 or BIOL:1261 or BIOL:1370 or BIOL:1412. Same as GEOG:2374.

BIOL:2512 Fundamental Genetics 4 s.h.

BIOL:2603 Mechanisms of Aging 3 s.h.
Evolutionary theories of aging, cellular and genetic basis of aging and repair, disruption of homeostasis in aging; focus on studies of biological and environmental causes of age-related diseases. Prerequisites: BIOL:1411 and (BIOL:1412 or HHP:3500).

BIOL:2673 Ecology 3-4 s.h.
Adaptations of organisms to their physical and biological environments; organism-environment interactions; population biology; interactions between species; ecology of communities, ecosystems; human impact on ecosystems. Prerequisites: BIOL:1411 and BIOL:1412 and (MATH:1460 or MATH:1550 or MATH:1850). Recommendations: a basic statistics course. Same as ENVS:2673.

BIOL:2723 Cell Biology 3 s.h.
Structures of cells and organelles in relation to their functions at molecular, cellular levels; emphasis on higher eukaryotic cells. Prerequisites: BIOL:1411 and BIOL:1412 and CHEM:1120.

BIOL:2753 Introduction to Neurobiology 3 s.h.
Techniques of molecular biology, genomics, neuropharmacology, and functional brain imaging applied to understanding how the brain works. Prerequisites: BIOL:1411 and BIOL:1412.

Elementary Topics of General Interest, Lower-Level Undergraduate

These courses are not open to graduate students and do not provide credit toward a biology major.

BIOL:1000 First-Year Seminar 1 s.h.
Small discussion class taught by a faculty member; topics chosen by instructor; may include outside activities (e.g., films, lectures, performances, readings, visits to research facilities, field trips). Requirements: first- or second-semester standing.

BIOL:1060 Origins of Life in the Universe (Part 1) 3 s.h.
Fundamental questions (How old is the universe? What is the nature of life? How has life evolved on Earth? What are our human origins? Are there other habitable planets in the universe?) that revolve around understanding origins from different perspectives (i.e., astronomy, physics, geoscience, biology, chemistry, anthropology); work with faculty from several departments to investigate these questions; inquiry-based activities to build success in critical thinking, teamwork, effective written and oral communication; origin of the universe, biochemistry of life, and origin of life on Earth; first of a two-part sequence. Recommendations: first-year or sophomore standing. GE: Natural Sciences without Lab. Same as ASTR:1060, EES:1060.

BIOL:1061 Origins of Life in the Universe (Part 2) 4 s.h.
Fundamental questions (What is the nature of life? What is evolution and how has life evolved on Earth? What are our human origins? Are there other habitable planets in the universe?) that revolve around understanding origins from different perspectives (astronomy, physics, geoscience, biology, chemistry, anthropology); students work with faculty from several departments to investigate these questions; inquiry-based activities build success in critical thinking, teamwork, and effective written and oral communication; second of a two-part sequence. GE: Natural Sciences without Lab. Same as ASTR:1061, ANTH:1061, EES:1061.
BIOL:1140 Human Biology  4 s.h.
Molecular and cellular basis of human life; integration of humans and the biosphere through photosynthesis, respiration; structure, function of human tissues, organs, organ systems; reproduction, genetics, impact of molecular biology and genetic engineering; lecture, laboratory. GE: Natural Sciences with Lab.

BIOL:1141 Introductory Animal Biology  4 s.h.
Fundamental principles: cells and macromolecules, energy metabolism, organismic physiology, genetics, development, ecology, and evolution. Requirements: one year of high school chemistry. Recommendations: CHEM:1070. GE: Natural Sciences with Lab.

BIOL:1251 How the Brain Works (and Why it Doesn't)  3-4 s.h.
Introductory survey of neuroscience; structure and function of the brain; nature of consciousness; brain function in mental illness and degenerative disorders; genes and the mind; perception, sensation, memory, and emotions. Requirements: non-biology major. GE: Natural Sciences without Lab.

BIOL:1260 Plants and Human Affairs  2-3 s.h.
How plants are useful to people: food, clothing, shelter, medicines, psychoactive agents; plants' social, economic, ecological significance. GE: Natural Sciences without Lab.

BIOL:1261 Introduction to Botany  4 s.h.
Biology of plant life; emphasis on structure, function, reproduction, inheritance, diversity, evolution. Requirements: one year of high school chemistry. GE: Natural Sciences without Lab.

BIOL:1311 Human Genetics in the Twenty-First Century  3 s.h.
Organization and inheritance of human genes and genomes; genetic basis of simple and complex traits; genetic aspects of cancer; paleogenomics and tracing human migrations with DNA. GE: Natural Sciences without Lab. Same as ANTH:1310.

BIOL:1360 Spring Flora  3 s.h.
Recognition and identification of spring-flowering herbaceous plants, native woodland trees and shrubs, woody landscape plants; family characteristics, use of taxonomic key.

BIOL:1370 Understanding Evolution  3 s.h.
Evolution and diversity of living things, their patterns on Earth, their organization in ecological systems; dynamics of evolutionary processes. GE: Natural Sciences without Lab.

BIOL:2211 Genes, Genomes, and the Human Condition  3 s.h.
Organization, expression, and evolution of genes in context of genomes; focus on human genome; distribution and transmission of variation in human population. Prerequisites: BIOL:1411. Recommendations: BIOL:1412.

### Upper-Level Undergraduate and Graduate

**BIOL:3172 Evolution**  4 s.h.
Nature, evidence, analysis, implications, molecular/ genetic basis; historical record, phylogeny, speciation, adaptation, investigative methods. Prerequisites: BIOL:1411 and BIOL:1412 and BIOL:2512 and (MATH:1460 or MATH:1550 or MATH:1850 or STAT:2010 or STAT:3510). Requirements: grade of C- or higher in BIOL:2512.

**BIOL:3233 Introduction to Developmental Biology**  3 s.h.
Fundamental mechanisms in differentiation, organogenesis, morphogenesis; and pattern formation; mechanistic approach at molecular, cellular, tissue levels of organizations. Prerequisites: BIOL:1412 and CHEM:1120. Requirements: grade of C- or higher in BIOL:1412. Recommendations: BIOL:2512.

**BIOL:3244 Animal Behavior**  3,5 s.h.
Genetics, sensory physiology, migration, development of behavior, circadian rhythms, foraging strategies, aggression, sexual and parental behavior, group selection, social behavior. Prerequisites: BIOL:1411 and BIOL:1412.

**BIOL:3253 Neurobiology**  4 s.h.
Cellular neurobiology (cytoskeleton and transport, membrane physiology, synaptic transmission and plasticity, sensory transduction); systems neurobiology (peripheral and central sensory processing, autonomic and somatic motor systems); cognitive neurobiology (emotion, biological rhythms and sleep, memory, attention, language); developmental neurobiology. Prerequisites: BIOL:2753. Recommendations: BIOL:2723 and BIOC:3110.

**BIOL:3314 Genomics**  3 s.h.
Major areas of genomics, including DNA and protein sequence analysis, structural diversity of whole genomes, microarray applications, proteomics; computer workshop experience in applying bioinformatics tools. Prerequisites: BIOL:2512 or BIOC:3120.

**BIOL:3343 Animal Physiology**  3 s.h.
Principles of cellular and systems physiology; emphasis on experimental and quantitative aspects. Prerequisites: BIOL:1411 and BIOL:1412 and (PHYS:1511 or PHYS:1611). Corequisites: PHYS:1512 or PHYS:1612, if not taken as a prerequisite.

**BIOL:3363 Plant Developmental Biology**  3 s.h.
Developmental processes throughout life cycle of vascular plants; current knowledge of mechanisms, control; emphasis on molecular and genetic approaches to studying development. Prerequisites: BIOL:2512.

**BIOL:3373 Human Population Genetics and Variation**  3 s.h.
Principles of evolutionary change of genes and genomes applied to human populations and to comparisons between humans and their closest primate relatives; emphasis on consequences of mutation, natural selection, and demographic changes. Prerequisites: BIOL:2211 or BIOL:2512. Requirements: grade of C- or higher in BIOL:2211 or BIOL:2512, or graduate standing.
BIOL:3626 Cell Biology Laboratory 4 s.h.
Conceptual understanding and technical skills in fluorescence microscopy and digital imaging, mammalian cell culture, tissue fractionation, centrifugation, electrophoresis, and expression of recombinant proteins. Prerequisites: BIOL:1411 and BIOL:1412 and BIOL:2723.

BIOL:3656 Neurobiology Laboratory 4 s.h.
Principles and practice of neurobiology research, including microscopy and imaging, cellular and molecular neurobiology, and electrophysiology. Prerequisites: BIOL:2753.

BIOL:3663 Plant Response to the Environment 3 s.h.
Mechanisms of plant responses to environmental factors (biotic and abiotic) at organismal and molecular levels. Prerequisites: BIOL:2512 or BIOC:3120.

BIOL:3676 Evolution Lab 4 s.h.
Methods of sampling and describing variation in natural populations; application of molecular genetic, bioinformatic, and computational techniques to describe genetic variation through sequence analysis; use of controlled laboratory experiments and computer simulations to illustrate evolutionary principles. Prerequisites: BIOL:2512. Corequisites: BIOL:3172, if not taken as a prerequisite. Recommendations: grade of C or higher in BIOL:3172.

BIOL:3713 Molecular Genetics 4 s.h.
Mechanisms, regulation of RNA, DNA, protein biosynthesis, with emphasis on methods of genetic analysis; application of modern recombinant DNA techniques to basic problems. Requirements: BIOL:2512 or BIOC:3120 or first-year graduate standing.

BIOL:3716 Genetics and Biotechnology Lab 4 s.h.

BIOL:3736 Developmental Biology Lab 4 s.h.
Experimental manipulation of embryos to examine mechanisms of early development, including gametogenesis and fertilization, cleavage, gastrulation, pattern formation and organogenesis; in vivo imaging of development, methods to visualize gene expression and independent research; model organisms including sea urchin, fish, frog, chick, mouse. Prerequisites: BIOL:2512 and BIOL:3233.

BIOL:3743 Basic Biology of Human Disease 2 s.h.
Basic problems of infectious disease; selected viral, bacterial, and fungal pathogens, with emphasis on fungal pathogenesis; DNA fingerprinting; epidemiological study of disease dynamics. Prerequisites: BIOL:2512.

BIOL:3898 Teaching Internship in Biology 2 s.h.
Training in teaching the laboratory component of a large General Education biology course; weekly session with instructor, shadowing and assisting a graduate teaching assistant in a lab section, leading laboratory exercises. Prerequisites: BIOL:1411 and BIOL:1412. Requirements: grades of B or higher in BIOL:1411 and BIOL:1412, and junior or senior standing.

BIOL:3994 Introduction to Research 2-3 s.h.
Conduct independent scientific research related to the field of biology.

BIOL:4213 Bioinformatics 4 s.h.
Overview of bioinformatics topics, including access to sequence data, pairwise and multiple sequence alignment algorithms, molecular phylogeny, microarray data analysis, protein analysis, proteomics and protein structure analysis; emphasis on each topic includes biological motivation, computational approach (practical and theoretical), and interpretation of output. Prerequisites: BIOL:2512 or BIOL:3120. Recommendations: grade of B+ or higher in BIOL:2512 or BIOL:3120, or graduate standing. Same as GENE:6170.

BIOL:4273 Population Genetics and Molecular Evolution 3 s.h.
Nucleotide sequences, genes, and mutation; rates and patterns of nucleotide substitution; selection at the molecular level and the neutral theory; population genetics theory; genome evolution. Requirements: grade of C- or higher in BIOL:2211 or BIOL:2512, or graduate standing. Recommendations: grade of C- or higher in BIOL:3172.

BIOL:4316 Summer Practicum in Genomics 2 s.h.
Major areas of genomics, including sequence similarity searching, whole genome comparisons, phylogenetic analysis, and regulatory informatics; computer workshop experience in application of bioinformatics tools. Prerequisites: BIOL:3314 or BIOL:4213 or GENE:6170.

BIOL:4333 Genes and Development 3 s.h.
Mechanisms by which genes control development of multicellular animals; methodology of scientific research applied to developmental genetics. Requirements: grade of B or higher in BIOL:2512. Recommendations: BIOL:3233.

BIOL:4353 Neurophysiology 3 s.h.
Physiological properties of nerve cells, nervous systems; axonal conduction, synaptic transmission, sensory transduction, integrative processes, higher functions. Prerequisites: (BIOL:2753 or BIOL:3253) and (MATH:1460 or MATH:1850) and (PHYS:1512 or PHYS:1612). Same as NSCI:4353.

BIOL:4373 Molecular Phylogenetics 3 s.h.
Theory underlying phylogenetic analysis with application of these methods to molecular data sets; analysis of multigene data, organellar, and nuclear genome sequences to reconstruct the history of cells. Requirements: grade of C- or higher in BIOL:3172 or graduate standing.
**Graduate**

**BIOL:4753 Developmental Neurobiology** 3 s.h.  
Neural induction and nervous system patterning; neurogenesis, axon and dendrite outgrowth and targeting; synapse formation, specificity, refinement; mechanisms of neuronal cell death; myelination; neural stem cells; introduction to cellular, molecular, and genetic techniques in studies of neural development. Prerequisites: BIOL:2753. Corequisites: BIOL:3253. Requirements: grade of B- or higher in BIOL:2753 or graduate standing. Same as MPB:4753, NSCI:4753.

**BIOL:4897 Advanced Teaching Internship in Biology** 1-2 s.h.  
Teaching the laboratory component of a large introductory-level biology course; weekly training session with instructor; shadowing and assisting a graduate teaching assistant in a weekly lab section. Prerequisites: BIOL:1411 and BIOL:1412. Requirements: grades of B- or higher in BIOL:1411 and BIOL:1412, junior or senior standing, and interview with instructor.

**BIOL:4898 Communicating Research** 1 s.h.  
Independent, investigative research experience; research process and communication—establishing goals and expectations with a mentor, developing and framing a research hypothesis or question, communicating results in written and oral form to scientist and nonscientist audiences; supportive learning environment to share research experiences and develop identities as scientists, learn skills to become effective independent researchers and science communicators. Corequisites: BIOL:3994 or BIOL:4999.

**BIOL:4998 Honors Seminar in Biology** 2 s.h.  
Requirements: honors standing.

**BIOL:4999 Honors Investigations** arr.  
Conduct independent scientific research related to the field of biology. Requirements: honors standing in biology, UI g.p.a. of at least 3.33, and biology g.p.a. of at least 3.33.

**Graduate**

**BIOL:5117 Topics in Molecular Genetics** 1-2 s.h.  
Requirements: grade of C+ or higher in BIOL:2512 or graduate standing.

**BIOL:5127 Topics in Cell and Development** 1-2 s.h.

**BIOL:5157 Topics in Neurobiology** 1-2 s.h.  
Topics vary. Requirements: BIOL:3253 or graduate standing.

**BIOL:5177 Topics in Evolution and Ecology** 1-2 s.h.  
Requirements: grades of B- or higher in BIOL:2512 and BIOL:3172, or graduate standing.

**BIOL:5199 Critical Readings in Biology** arr.

**BIOL:5211 Genes, Genomes, and the Human Condition Graduate Lecture** 3 s.h.  
Organization, expression, and evolution of genes in context of genomes; focus on human genome; distribution and transmission of variation in human population. Recommendations: BIOL:1411 highly recommended.

**BIOL:5218 Microscopy for Biomedical Research** arr.  
Basic microscopy methods for research including optics, preparation, and analysis of biomedical specimens; light, fluorescence, confocal, transmitting electron, scanning electron, atomic force microscopes, elemental analysis; immunochemistry and stereology techniques; individualized laboratory instruction. Prerequisites: BIOL:2723. Same as ACB:5218, MICR:5218.

**BIOL:5220 Advanced Microscopy for Biomedical Research** arr.  
Technically advanced microscopy and instrumentation for research; individualized laboratory experience with opportunity to explore applications of microscopy methods. Requirements: for ACB:5220 — an introductory microscopy course; for BIOL:5220 — ACB:4156 or ACB:5218 or CBE:4156 or EES:4156 or MICR:5218; for MICR:5220 — an introductory EM course. Same as ACB:5220, MICR:5220.

**BIOL:5270 Biosciences Critical Thinking and Communication** 2 s.h.  
Selected papers and oral and written presentations tied to students' research rotations; introductory seminar. Same as BISC:5265, MPB:5342.

**BIOL:5289 Research Method and Theory** 2 s.h.  
Materials and methods of scientific investigation; lab techniques; library resources usage, NCBI data base training; lab safety; research ethics; reading, writing, presenting scientific papers. Requirements: new graduate standing in biology.

**BIOL:5320 Computational Genomics** 3 s.h.  
Introduction to computational methods used in genome analysis and functional genomics; biological sequence analysis, sequence database search, microarray data analysis, biological network analysis; in-depth coverage of principal genome science challenges and recent solutions. Prerequisites: BME:5320 and CS:3110 and (BIOS:4120 or STAT:3510). Same as BME:5330, GENE:5173, ECE:5220.

**BIOL:5412 Fundamental Genetics—Graduate Lecture** 3 s.h.  

**BIOL:5512 Fundamental Genetics—Graduate Discussion** 1 s.h.  
Critical evaluation of classic genetics papers. Requirements: biology graduate standing.

**BIOL:5653 Fundamental Neurobiology** 4 s.h.  
Neurobiology from molecular/cellular to systems levels, including cell biology of neuron; membrane electrophysiology, synaptic transmission and plasticity, functional neuroanatomy, sensory systems from periphery to CNS, peripheral and central motor systems, autonomic systems emotion, memory, sleep, language, attention and cognition, development of nervous system; discussion of classic and recent journal articles. Same as PSY:5203, NSCI:5653.
BIOL:6188 Seminar: Writing in Natural Sciences  
2 s.h.
Writing and critiquing skills in the natural sciences.

BIOL:6199 Research: Biology  
arr.

BIOL:6265 Neuroscience Seminar  
0-1 s.h.
Research presentations. Offered fall and spring semesters. Same as PSY:6265, ACB:6265, MPB:6265, NSCI:6265.

BIOL:6298 Concepts, Models, and Systems in Biology (COSMOS) Seminar  
1-2 s.h.
Primary research on central biological questions utilizing full array of organisms and analytical approaches; opportunity to improve skills in public speaking, presentation, and scientific writing. Requirements: integrated biology graduate standing.

BIOL:6759 Molecular Neurobiology of Hearing Development, Function, and Disease  
3 s.h.
Up-to-date overview of auditory system, function, and development; molecular basis for development, function, and disease; auditory system as basis for most human communication; prominent functional reduction during senescence; structure, function, development, and disease mechanisms that provide long-term solutions to cure or prevent beyond currently available treatment of hearing loss with a cochlear implant; series of lectures organized to provide an overview of various aspects of this system. Prerequisites: BIOL:3253.

BIOL:6899 Independent Study in Biology  
arr.
Biomedical Sciences

Chair, Department of Biology
• Bernd Fritzsch

Director, Biomedical Sciences
• Bryant F. McAllister

Undergraduate major: biomedical sciences (B.S.)
Biomedical sciences is an interdisciplinary major designed for students who plan to attend medical school or conduct biomedical research in graduate school and beyond. The curriculum stretches broadly across scientific and mathematical fields. The major is selective, with a limited number of students admitted, and the curriculum is challenging, requiring extreme dedication by its students, who are mentored by faculty members from the participating disciplines.

The Departments of Biochemistry, Biology, Chemistry, and Microbiology collaborate to present the major in biomedical sciences; the major is administered by the Department of Biology.

Undergraduate Program of Study
• Major in biomedical sciences (Bachelor of Science)

Bachelor of Science
The Bachelor of Science with a major in biomedical sciences requires a minimum of 120 s.h., including at least 79-81 s.h. of work for the major. Students must maintain a g.p.a. of at least 2.00 in all courses for the major and in all UI courses for the major. They also must complete the College of Liberal Arts and Sciences General Education Program (p. 313).

The interdisciplinary major provides an excellent foundation for medical training and for research and/or practice in the chemical, genetic, cellular, and physiological bases of human disease. The curriculum includes required and elective course work in biochemistry, biology, chemistry, health and human physiology, mathematics, microbiology, physics, psychology, sociology, and statistics. Students who wish to apply transfer credit toward the major should consult their departmental advisor.

The major in biomedical sciences requires the following course work.

REQUIRED COURSES
Students complete all of the following (62-63 s.h.).

Chemistry
All of these:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hour</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOC:3120</td>
<td>Biochemistry and Molecular Biology I</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>BIOC:3130</td>
<td>Biochemistry and Molecular Biology II</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>CHEM:1110</td>
<td>Principles of Chemistry I</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>CHEM:1120</td>
<td>Principles of Chemistry II</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>CHEM:2210</td>
<td>Organic Chemistry I</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>CHEM:2220</td>
<td>Organic Chemistry II</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

Life Sciences
All of these:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hour</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL:1411</td>
<td>Foundations of Biology</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>BIOL:2211</td>
<td>Genes, Genomes, and the Human Condition</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>BIOL:3373</td>
<td>Human Population Genetics and Variation</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>HHP:3500</td>
<td>Human Physiology</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>MICR:2157</td>
<td>General Microbiology</td>
<td>5 s.h.</td>
</tr>
</tbody>
</table>

Mathematics/Statistics
Both of these:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hour</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH:1460</td>
<td>Calculus for the Biological Sciences</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>STAT:3510</td>
<td>Biostatistics</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

Physics
Both of these:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hour</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS:1511</td>
<td>College Physics I</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>PHYS:1512</td>
<td>College Physics II</td>
<td>4 s.h.</td>
</tr>
</tbody>
</table>

Social Sciences
All of these:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hour</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSY:1001</td>
<td>Elementary Psychology</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>PSY:2130</td>
<td>Advanced Psychology for Pre-Medical Track</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>SOC:1010</td>
<td>Introduction to Sociology</td>
<td>3-4 s.h.</td>
</tr>
</tbody>
</table>

ELECTIVE COURSES
Students complete a total of 17-18 s.h. of elective course work chosen from the following lists.

Lecture courses—two of these:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hour</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOC:5241</td>
<td>Biophysical Chemistry I</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>BIOL:2254</td>
<td>Endocrinology</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>BIOL:2723</td>
<td>Cell Biology</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>BIOL:2753</td>
<td>Introduction to Neurobiology</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>BIOL:3233</td>
<td>Introduction to Developmental Biology</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>BIOL:3343</td>
<td>Animal Physiology</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>BIOL:4213</td>
<td>Bioinformatics</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>MICR:3147</td>
<td>Survey of Immunology</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

Chemistry lab—one of these:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hour</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOC:3130</td>
<td>Biochemistry and Molecular Biology II</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>CHEM:2410</td>
<td>Organic Chemistry Laboratory</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

Experiential learning—one of these:

<table>
<thead>
<tr>
<th>Course Title</th>
<th>Credit Hour</th>
</tr>
</thead>
<tbody>
<tr>
<td>Honors research course</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>Additional lab course</td>
<td>4 s.h.</td>
</tr>
</tbody>
</table>

Investigative lab—one of these:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hour</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL:3626</td>
<td>Cell Biology Laboratory</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>BIOL:3656</td>
<td>Neurobiology Laboratory</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>BIOL:3676</td>
<td>Evolution Lab</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>BIOL:3716</td>
<td>Genetics and Biotechnology Lab</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>BIOL:3736</td>
<td>Developmental Biology Lab</td>
<td>4 s.h.</td>
</tr>
</tbody>
</table>
Four-Year Graduation Plan

The following checkpoints list the minimum requirements students must complete by certain semesters in order to stay on the University's Four-Year Graduation Plan. (Courses in the major are those required to complete the major; they may be offered by departments other than the major department.)

**Before the fifth semester begins:**
- CHEM:1110 Principles of Chemistry I
- CHEM:1120 Principles of Chemistry II
- BIOL:1411 Foundations of Biology
- PSY:1001 Elementary Psychology
- SOC:1010 Introduction to Sociology
- MATH:1460 Calculus for the Biological Sciences
- CHEM:2210 Organic Chemistry I
- CHEM:2220 Organic Chemistry II
- MICR:2157 General Microbiology
- PHYS:1511 College Physics I
- PHYS:1512 College Physics II
- HHP:3500 Human Physiology

**Before the seventh semester begins:**
- BIOC:3120 Biochemistry and Molecular Biology I
- BIOC:3130 Biochemistry and Molecular Biology II
- BIOL:2211 Genes, Genomes, and the Human Condition
- BIOL:3373 Human Population Genetics and Variation
- STAT:3510 Biostatistics
- CHEM:2410 Organic Chemistry Laboratory or BIOC:3140 Experimental Biochemistry

**During the eighth semester:**
- Enrollment in all remaining course work in the major, all remaining General Education courses, and a sufficient number of semester hours to graduate

Honors in the Major

Students majoring in biomedical sciences are encouraged to graduate with honors in the major. Honors students in the major may enroll in honors sections of courses offered by the Department of Biology and by other departments and programs. They also are advised to participate in the Iowa Center for Research by Undergraduates (ICRU) and to apply for research scholarships.

To graduate with honors in the biomedical sciences major, students must fulfill the following requirements:

- complete the requirements for a major in biomedical sciences with a g.p.a. of at least 3.33 in all University of Iowa course work in the major;
- complete a minimum of 6 s.h. (taken over two or more semesters) of BIOL:4999 Honors Investigations;
- write a brief research proposal summarizing the background and goals of their proposed honors research;
- upon completion of their research, submit an acceptable honors thesis; and
- give an oral presentation of their research findings.

Honors students in biomedical sciences must be members of the University of Iowa Honors Program, which requires students to maintain a cumulative University of Iowa g.p.a. of at least 3.33 and to fulfill other requirements; visit Honors at Iowa to learn about the University's honors program.

Biomedical sciences majors interested in graduating with honors in the major should contact the biomedical sciences honors advisor as early as possible, preferably during their sophomore or junior year, so that they may be matched with an appropriate lab. Contact the Department of Biology to learn more about honors in the major.
Chemistry

Chair

• Sarah C. Larsen

Undergraduate major: chemistry (B.A., B.S.)
Undergraduate minor: chemistry
Graduate degrees: M.S. in chemistry; Ph.D. in chemistry
Faculty: http://www.chem.uiowa.edu/people
Web site: http://www.chem.uiowa.edu/

Undergraduate Programs of Study

• Major in chemistry (Bachelor of Arts, Bachelor of Science)
• Minor in chemistry

The undergraduate major in chemistry provides a strong foundation for success in graduate and professional study and for positions in academic or industrial chemistry.

Bachelor of Arts, Bachelor of Science

The Bachelor of Arts with a major in chemistry requires a minimum of 120 s.h., including 53-54 s.h. of work for the major (20 s.h. in foundation chemistry courses, 12 s.h. in advanced chemistry, and 21-22 s.h. in supporting course work). The Bachelor of Science with a major in chemistry requires a minimum of 120 s.h., including 69 s.h. of work for the major (20 s.h. in foundation chemistry courses, 27 s.h. in advanced chemistry, and 22 s.h. in supporting course work). Students must maintain a g.p.a. of at least 2.00 in all courses for the major and in all UI courses for the major. They also must complete the College of Liberal Arts and Sciences General Education Program (p. 313).

The chemistry major for the Bachelor of Arts provides a more general education than the B.S. program offers and may be the degree of choice for students who are interested in earning licensure to teach in secondary schools (see "B.A. or B.S. with Teacher Licensure" below). Advanced courses in chemistry, biology, mathematics, physics, or other science disciplines are recommended as electives for B.A. students. Those who choose appropriate electives may meet entrance requirements for graduate or professional programs such as chemistry, biochemistry, medicine, or dentistry. Graduates also may pursue careers and education in business, law, and other areas.

The chemistry major for the Bachelor of Science is certified by the American Chemical Society (ACS) when a biochemistry course is included. An ACS-approved program offers a broad-based and rigorous chemistry education that provides students with intellectual, experimental, and communication skills to become effective scientific professionals. Current and projected demand for Bachelor of Science graduates in chemistry is excellent in research and in control and process-development work. The program also provides all the prerequisites for graduate work in chemistry or biochemistry and in other biomedical areas with a molecular focus.

Bachelor of Arts and Bachelor of Science students take the same chemistry foundation courses, but their requirements in other areas are different. B.A. students must earn at least 11 s.h. in advanced chemistry courses at the University of Iowa; B.S. students must earn at least 20 s.h. in advanced chemistry courses at the University. Mathematics and preferred physics requirements also differ for the two degrees, and B.S. students may count undergraduate research toward the science electives requirement.

Courses in the chemistry major have prerequisites, so they must be taken in the correct order. Advanced chemistry courses are built on the chemistry foundation courses. Most advanced courses are taught only once a year. Students should consult their academic advisors and plan their course schedules carefully. They should take CHEM:201 Basic Measurements during the first semester of the second year.

Students may not use a course to fulfill more than one requirement.

The major in chemistry requires the following course work.

CHEMISTRY FOUNDATION COURSES (B.A. AND B.S.)

All students (Bachelor of Arts and Bachelor of Science) complete the following foundation courses.

All of these:

CHEM:1110 & CHEM:1120 Principles of Chemistry I-II 8 s.h.
CHEM:2021 Basic Measurements 3 s.h.

One of these sequences:

CHEM:2230 & CHEM:2240 Organic Chemistry I for Majors - Organic Chemistry II for Majors (preferred) 6 s.h.
CHEM:2210 & CHEM:2220 Organic Chemistry I-II 6 s.h.

One of these:

CHEM:2420 Organic Chemistry Laboratory for Majors (preferred) 3 s.h.
CHEM:2410 Organic Chemistry Laboratory 3 s.h.

ADVANCED CHEMISTRY (B.A.)

Bachelor of Arts students complete one of these:

CHEM:3110 Analytical Chemistry II (preferred) 3 s.h.
CHEM:3110 Analytical Chemistry I 3 s.h.

And all of these:

CHEM:3250 Inorganic Chemistry 3 s.h.
CHEM:4430 Principles of Physical Chemistry 3 s.h.
CHEM:4450 Synthesis and Measurement 3 s.h.

ADVANCED CHEMISTRY (B.S.)

Bachelor of Science students complete all of these:

CHEM:3110 & CHEM:3120 Analytical Chemistry I-II 6 s.h.
CHEM:3250 Inorganic Chemistry 3 s.h.
CHEM:3430 Analytical Measurements 3 s.h.
CHEM:3440 Physical Measurements 3 s.h.
CHEM:3530 Inorganic Chemistry Laboratory 3 s.h.
CHEM:4270 Advanced Inorganic Chemistry 3 s.h.
CHEM:4431-CHEM:4432 Physical Chemistry I-II 6 s.h.
MATHEMATICS (B.A.)
Bachelor of Arts students complete one of these:
MATH:1460 Calculus for the Biological Sciences (preferred) 4 s.h.
MATH:1550 Engineering Mathematics I: Single Variable Calculus 4 s.h.
MATH:1850 Calculus I 4 s.h.
And one of these:
MATH:1560 Engineering Mathematics II: Multivariable Calculus 4 s.h.
MATH:1860 Calculus II 4 s.h.
STAT:2010 Statistical Methods and Computing 3 s.h.
STAT:3510 Biostatistics (preferred) 3 s.h.

MATHEMATICS (B.S.)
Bachelor of Science students complete one of these sequences:
MATH:1850 & MATH:1860 Calculus I-II (preferred) 8 s.h.

INTRODUCTORY PHYSICS (B.A. AND B.S.)
All students complete one of these sequences:
PHYS:1511-PHYS:1512 College Physics I-II (preferred for B.A.) 8 s.h.
PHYS:1611-PHYS:1612 Introductory Physics I-II (preferred for B.S.) 8 s.h.

SCIENCE ELECTIVES (B.A.)
Bachelor of Arts students complete a total of 6 s.h. of elective courses chosen from the following list. Some of these courses may be used to fulfill other requirements for the major, as listed above; students who have used a course from this list to fulfill another requirement for the major may not use that course as an elective.
CHEM:3110 Analytical Chemistry I 3 s.h.
CHEM:3120 Analytical Chemistry II 3 s.h.
CHEM:3430 Analytical Measurements 3 s.h.
CHEM:3440 Physical Measurements 3 s.h.
CHEM:3530 Inorganic Chemistry Laboratory 3 s.h.
CHEM:4171 Advanced Analytical Chemistry 3 s.h.
CHEM:4270 Advanced Inorganic Chemistry 3 s.h.
CHEM:4372 Advanced Organic Chemistry 3 s.h.
CHEM:4431 Physical Chemistry I 3 s.h.
CHEM:4432 Physical Chemistry II 3 s.h.
CHEM:4480 Introduction to Molecular Modeling 3 s.h.
CHEM:4760 Radiochemistry: Energy, Medicine, and the Environment 3 s.h.
CHEM:4873 Atmospheric and Environmental Chemistry 3 s.h.
CHEM:4875 Introduction to Polymer Chemistry 2-3 s.h.
BIOL:3100 Biochemistry 3 s.h.
BIOL:3120 Biochemistry and Molecular Biology I 3 s.h.
BIOL:3130 Biochemistry and Molecular Biology II 3 s.h.
CEE:5152/CBE:5152 Environmental Chemistry 3 s.h.
EES:4490 Elements of Geochemistry 3 s.h.
EES:4520 Isotope Geochemistry 3 s.h.

Students should consult their advisors to gain approval for a course that is not on the list.

SCIENCE ELECTIVES AND RESEARCH (B.S.)
Bachelor of Science students complete a total of 6 s.h. chosen from these:
CHEM:3994 Undergraduate Research 1-4 s.h.
BIOL:3110 Biochemistry 3 s.h.
BIOL:3120 Biochemistry and Molecular Biology 3 s.h.

Advanced science elective courses

ACS CERTIFICATION REQUIREMENT (B.S.)
Bachelor of Science students who want an ACS certified degree complete one of these optional courses (also listed above under "Science Electives and Research (B.S.)":)
BIOL:3110 Biochemistry 3 s.h.
BIOL:3120 Biochemistry and Molecular Biology 3 s.h.

B.A. or B.S. with Teacher Licensure
Chemistry majors interested in earning licensure to teach in elementary and/or secondary schools must complete the College of Education’s Teacher Education Program (TEP) in addition to the requirements for the major and all requirements for graduation. The TEP requires several College of Education courses and student teaching. Contact the Office of Education Services for details.

Students must satisfy all degree requirements and complete Teacher Education Program licensure before degree conferral.

Students who plan to use their work toward a minor in chemistry as academic background for earning teacher licensure should contact the Office of Education Services about requirements.

Students with a strong interest in science teaching may complete a major offered by the Science Education Program. Students choose one of five emphases—biology, chemistry, earth science, physics, and all-science—and earn a Bachelor of Science degree. They may apply for admission to the Teacher Education Program. See Science Education (p. 788) in the Catalog.

Joint B.A./M.A.T. with Science Education Subprogram
B.A. students majoring in chemistry who are interested in pursuing a graduate degree in teaching may apply to the joint Bachelor of Arts/Master of Arts in Teaching program offered by the College of Liberal Arts and Sciences and the College of Education. Designed for undergraduates majoring in biology, chemistry, environmental sciences, or physics, the joint program enables students to earn a B.A. and an M.A.T. in five years by beginning to earn graduate credit during their fourth year of undergraduate study and by counting up to 18 s.h. of qualifying credit toward both degrees. For more information, see "Joint B.A./M.A.T.
with Science Education Subprogram” in the Teaching and Learning (p. 793) (College of Education) section of the Catalog. Interested students should consult an advisor.

**Four-Year Graduation Plan**

The following checkpoints list the minimum requirements students must complete by certain semesters in order to stay on the University's Four-Year Graduation Plan. (Courses in the major are those required to complete the major; they may be offered by departments other than the major department.)

Note: Courses in the chemistry major have prerequisites, so they must be taken in the correct order. Most advanced courses are taught only once a year. Students should consult their academic advisors and plan their course schedules carefully. They should take CHEM:2021 Basic Measurements during the first semester of the second year. Typical chemistry course schedules (B.A. and B.S.) and a regression list are available at Requirements for Major on the department's web site.

**Bachelor of Arts**

**Before the third semester begins:** math through MATH:1460 Calculus for the Biological Sciences or calculus I; CHEM:1110 Principles of Chemistry I and CHEM:1120 Principles of Chemistry II, or CHEM:1180 Chemical Science I and CHEM:1190 Chemical Science II and CHEM:1200 Chemical Science Laboratory, or equivalent course work

**Before the fifth semester begins:** basic measurements; organic chemistry I, II, and lab; and biostatistics or calculus II

**Before the seventh semester begins:** two more courses in the major; physics I and II; and at least 90 s.h. earned toward the degree

**Before the eighth semester begins:** principles of physical chemistry and one more course in the major

**During the eighth semester:** enrollment in all remaining course work in the major, all remaining General Education courses, and a sufficient number of semester hours to graduate

**Bachelor of Science**

**Before the third semester begins:** math through calculus I; CHEM:1110 Principles of Chemistry I and CHEM:1120 Principles of Chemistry II, or CHEM:1180 Chemical Science I and CHEM:1190 Chemical Science II and CHEM:1200 Chemical Science Laboratory, or equivalent course work

**Before the fifth semester begins:** basic measurements; organic chemistry I, II, and lab; three other courses in the major; calculus II; physics I and II

**Before the seventh semester begins:** six more courses in the major and at least 90 s.h. earned toward the degree

**Before the eighth semester begins:** three more courses in the major

**During the eighth semester:** enrollment in all remaining course work in the major, all remaining General Education courses, and a sufficient number of semester hours to graduate

**Honors in the Major**

Students majoring in chemistry have the opportunity to graduate with honors in the major. Departmental honors students must maintain a cumulative University of Iowa g.p.a. of at least 3.33. In addition, students must complete an undergraduate research project acceptable to their research advisor and must write an honors thesis based on their research. Students can register for CHEM:3994 Undergraduate Research or HONR:3994 Honors Research Practicum in order to earn credit for their research. They are encouraged, but not required, to present their research at local and regional meetings and to publish their results in professional journals.

In addition to honors in their majors, undergraduate students have a variety of opportunities for honors study and activities through membership in the University of Iowa Honors Program; visit Honors at Iowa to learn about the University's honors program.

**Minor**

The minor in chemistry requires a minimum of 15 s.h. in chemistry courses, including 12 s.h. in courses numbered 2210 or above taken in the Department of Chemistry at the University of Iowa. Students must maintain a cumulative g.p.a. of at least 2.00 in all courses for the minor and in all UI courses for the minor. Course work in the minor may not be taken pass/nonpass.

The following courses do not count toward the minor.

- CHEM:3560 Advanced Methods in Chemical Research: Special Topics 1-3 s.h.
- CHEM:3994 Undergraduate Research 1-4 s.h.
- CHEM:4261 Selected Topics in Chemistry 1-3 s.h.

**Resources, Activities**

The department offers undergraduate students majoring in chemistry and other students interested in chemistry a number of opportunities to enrich their classroom studies.

**Undergraduate Chemistry Center**

The Chemistry Center serves all students who take chemistry courses as well as the department's professors and teaching assistants. The center maintains waiting lists and offers other assistance with registration, returns examinations and homework assignments, schedules alternative exams, and provides information about all lower-level chemistry courses. Information about student organizations and departmental scholarships and awards also is available at the Chemistry Center.

**Student Organizations**

A number of organizations are open to undergraduate students for support and enrichment.

Students may join the University of Iowa undergraduate student chapter of the American Chemical Society (ACS). Chapter activities include dinner meetings with guest speakers; field trips to local industry; participation in local and national meetings of the ACS; and participation in chemistry outreach programs. Students in the ACS student chapter develop leadership, organization, and speaking skills valuable during their college experience and throughout their careers.
The department has a chapter of Alpha Chi Sigma, a co-ed chemistry fraternity. The Alpha Theta Chapter is open to students in chemistry, biochemistry, chemical engineering, and related fields. Alpha Chi Sigma sponsors many social and professional events throughout the year.

The department endorses the National Organization for the Professional Advancement of Black Chemists and Chemical Engineers (NOBCChE), which is committed to discovery, transmittal, and application of knowledge in science and engineering and to increasing the participation of underrepresented populations in these fields. NOBCChE sponsors diverse programs designed to foster professional development and to encourage students to pursue careers in science and technical fields.

The department also supports the activities of Women in Science and Engineering (WISE), whose aim is to increase women’s participation and advancement as students, faculty members, and professional staff; promote a supportive study and work environment for women; integrate women’s ideas, strengths, and approaches into research, teaching, and service; and inform the public of educational and career opportunities for women in scientific and technical fields. WISE sponsors a living-learning community in Stanley Hall (a University residence hall) for first-year female students majoring in science or engineering, the Student-to-Student Support in Science mentoring program, a service learning program, and the WISE Discourse and Dining series.

Scholarships and Awards

A number of awards and scholarships are available to chemistry majors, including the American Institute of Chemists Award, the Undergraduate Award in Analytical Chemistry, the Chemistry Alumni Awards (one each for a sophomore, a junior, and a senior), the Merck Index Award, and the Viksnins, Harris & Padys PLLP Award.

Chemistry majors also may apply for the Donald J. and Margaret Burton Scholarship, Ken Sando Scholarship, Shoemaker-Strickler Scholarship, E. David Cater Scholarship, and Russell K. Simms Scholarship.

Graduate Programs of Study

• Master of Science in chemistry
• Doctor of Philosophy in chemistry

Master of Science

The Master of Science in chemistry requires a minimum of 30 s.h. of graduate credit. The degree is offered with or without thesis. M.S. students must demonstrate minimal proficiency in biochemistry, and analytical, inorganic, organic, and physical chemistry by passing specific examinations or by enrolling in suitable core courses. This requirement must be completed by the end of the second year of enrollment. A g.p.a. of at least 3.00 is required for admission to the master’s examination.

Doctor of Philosophy

The Doctor of Philosophy in chemistry requires a minimum of 72 s.h. of graduate credit. A Ph.D. in chemistry includes minimal proficiency examinations, core courses as necessary, a minimum of 11 s.h. of advanced course work, and research.

Students who meet the course requirements with a cumulative g.p.a. of 3.00 or higher are admitted to the oral comprehensive examination upon presentation and preliminary approval of their written research proposal and research progress report; they must take the oral comprehensive examination no later than the end of their second year of enrollment.

Upon completing Ph.D. research, candidates prepare the dissertation. The final examination consists of an oral defense of the thesis, at which time the candidate presents at least one manuscript of the publishable portion of his or her thesis.

Admission

Applicants for graduate admission should have a bachelor’s degree with a major in chemistry or a related field, preferably with a g.p.a. of 3.00 or higher. Most admitted graduate students receive financial support. For application information, contact the Department of Chemistry or visit its web site.

Applicants must meet the admission requirements of the Graduate College; see the Manual of Rules and Regulations of the Graduate College.

Facilities

The Department of Chemistry’s main office, support facilities, and faculty offices are located in the Chemistry Building, as is laboratory and classroom space dedicated to teaching and research activities. Several faculty members have offices and laboratories in the Iowa Advanced Technology Laboratories, across the street from the Chemistry Building. See the Department of Chemistry web site for information about facilities and advanced instrumentation available for instruction and research.

Courses

Lower-Level Undergraduate

Students planning to take more than one year of chemistry should take CHEM:1110 Principles of Chemistry I and CHEM:1120 Principles of Chemistry II.

Students who require only one year of chemistry with no laboratory component may take CHEM:1070 General Chemistry I and CHEM:1080 General Chemistry II.

Students who have not had high school chemistry or do not have strong math and/or chemistry preparation should consider taking CHEM:1070 General Chemistry I before CHEM:1110 Principles of Chemistry I; academic advisors and the Chemistry Diagnostic Test can help students determine which of these courses to take first.

CHEM:1000 First-Year Seminar

1-2 s.h.

Small discussion class taught by a faculty member; topics chosen by instructor; may include outside activities (e.g., films, lectures, performances, readings, visits to research facilities). Requirements: first- or second-semester standing.
CHEM:1050 Technology and Society 3 s.h.
Nonmathematical exploration of selected areas of technology; basic science background, current technological applications, implications for society; for nonscience majors. Recommendations: closed to students who have taken college chemistry courses. GE: Natural Sciences without Lab.

CHEM:1060 Technology and Society Laboratory 1 s.h.
Laboratory for CHEM:1050; demonstrations, student experiments. Corequisites: CHEM:1050 if not taken as a prerequisite. Requirements: closed to students who have earned more than 3 s.h. in chemistry courses. GE: Natural Sciences Lab only.

CHEM:1070 General Chemistry I 3 s.h.
Atomic structure, chemical bonds, mole relations, stoichiometry, states of matter, acids and bases, reaction rates, electrochemistry, nuclear chemistry. Requirements: elementary algebra. GE: Natural Sciences without Lab.

CHEM:1080 General Chemistry II 3 s.h.
Organic chemistry and biochemistry. Requirements: CHEM:1070 or high school chemistry. GE: Natural Sciences without Lab.

CHEM:1090 Supplemental Chemistry Lab 1 s.h.
Lab techniques, elementary synthesis, measurement, analysis, case-study lectures and experiments; safety glasses, appropriate dress, compliance with laboratory safety protocols required.

CHEM:1100 Chemistry in Industry and the Economy 3 s.h.
Atomic structure, chemical bonding, acid and bases, polymers, pharmaceutics, DNA, proteins, and basic economics. Requirements: non-science major. GE: Natural Sciences without Lab.

CHEM:1110 Principles of Chemistry I 4 s.h.
Chemical bonding and chemical reactions; atomic and molecular structure, chemical equations, stoichiometry, gases, liquids, thermodynamics of phase changes, solutions, equilibrium, acids, bases, pH, elementary organic chemistry; the solid state, including modern materials; lecture, discussion, laboratory. Requirements: MATH:1005 or ACT math subscore of 24 and ALEKS score above 65%. Recommendations: Chemistry Diagnostic Test score of 16. GE: Natural Sciences with Lab.

CHEM:1120 Principles of Chemistry II 4 s.h.
Continuation of CHEM:1110; colligative properties of solutions, chemical thermodynamics, electrochemistry, chemical kinetics, chemical bonding, aspects of industrial chemistry, nuclear chemistry; lecture, discussion, laboratory. Recommendations: CHEM:1110. GE: Natural Sciences with Lab.

CHEM:1160 Principles of Chemistry Lab 2 s.h.
Laboratory techniques. Requirements: grades of C or higher in CHEM:1180 and CHEM:1190. GE: Natural Sciences Lab only.

CHEM:1180 Chemical Science I 3 s.h.
GE: Natural Sciences without Lab.

CHEM:1190 Chemical Science II 3 s.h.
GE: Natural Sciences without Lab.

CHEM:1200 Chemical Science Laboratory 2 s.h.
GE: Natural Sciences Lab only.

CHEM:2021 Basic Measurements 3 s.h.
Continuation of CHEM:1120; techniques of data collection and processing, including titrimetric and instrumental techniques for data collection and computer techniques for data processing. Prerequisites: CHEM:1120. Requirements: chemistry major.

CHEM:2210 Organic Chemistry I 3 s.h.
Carbon-containing compounds; structure, stereochemistry, physical properties, reactivity, reaction mechanisms, synthesis; emphasis on alkanes, alkenes, alkynes, alcohols, alkyl halides, aromatics. Recommendations: CHEM:1120.

CHEM:2220 Organic Chemistry II 3 s.h.
Continuation of CHEM:2210; use of spectroscopic techniques to determine chemical structures; chemistry of carbonyl compounds, amines, ethers, amino acids, carbohydrates, nucleosides. Recommendations: CHEM:2210 or CHEM:2230.

CHEM:2230 Organic Chemistry I for Majors 3 s.h.
Carbon-containing compounds; structure, stereochemistry, physical properties, reactivity, reaction mechanisms, synthesis; emphasis on alkanes, alkenes, alkynes, alcohols, alkyl halides, aromatics. Requirements: chemistry, biochemistry, or chemical engineering major. Recommendations: CHEM:1120 or CHEM:1190.

CHEM:2240 Organic Chemistry II for Majors 3 s.h.
Continuation of CHEM:2230; use of spectroscopic techniques to determine chemical structures; chemistry of carbonyl compounds, amines, ethers, amino acids, carbohydrates, and nucleosides. Prerequisites: CHEM:2210 or CHEM:2230. Requirements: chemistry, biochemistry, or chemical engineering major.

CHEM:2410 Organic Chemistry Laboratory 3 s.h.
Preparation, purification, identification, analysis of chemical compounds, principally organic compounds. Corequisites: CHEM:2220 or CHEM:2240. Recommendations: CHEM:1110 and CHEM:1120, or CHEM:1160 or CHEM:1200; and CHEM:2210 or CHEM:2230.

CHEM:2420 Organic Chemistry Laboratory for Majors 3 s.h.
Preparation, purification, identification, analysis of chemical compounds, principally organic compounds. Prerequisites: CHEM:1120 and (CHEM:2210 or CHEM:2230). Corequisites: CHEM:2220 or CHEM:2240. Requirements: chemistry, biochemistry, or chemical engineering major.
Upper-Level Undergraduate and Graduate

CHEM:3110 Analytical Chemistry I 3 s.h.
Modern theory and practice; emphasis on chemical equilibria (acid-base chemistry, solubility, complexation) and electroanalytical chemistry (potentiometry, voltammetry, coulometry). Recommendations: CHEM:1120, and MATH:1460 or MATH:1850, and PHYS:1511 or PHYS:1611.

CHEM:3120 Analytical Chemistry II 3 s.h.
Modern theory and practice; emphasis on atomic and molecular spectroscopy, mass spectrometry, chemical separations. Recommendations: CHEM:1120, and MATH:1460 or MATH:1850, and PHYS:1511 or PHYS:1611.

CHEM:3250 Inorganic Chemistry 2-3 s.h.
Modern principles; emphasis on descriptive chemistry of the main group and transition elements, ionic and covalent chemical bonding theories, symmetry, inorganic stereochemistry. Recommendations: CHEM:1120, and CHEM:2220 or CHEM:2240.

CHEM:3430 Physical Chemistry I 3 s.h.
Modern theory and practice; emphasis on chemical equilibria (acid-base chemistry, solubility, complexation) and electroanalytical chemistry; thermodynamics. Recommendations: CHEM:1120, and MATH:1460 or MATH:1850, and PHYS:1512 or PHYS:1612.

CHEM:3440 Physical Chemistry II 3 s.h.
Quantum mechanics and its application to atomic and molecular structure; determination of structure and bonding by various spectroscopic methods; chemical kinetics. Recommendations: CHEM:1120, and MATH:1560 or MATH:1860, and PHYS:1512 or PHYS:1612.

CHEM:4430 Principles of Physical Chemistry 3 s.h.
Kinetics, transport properties, elementary thermodynamics, and selected topics in quantum mechanics and spectroscopy; emphasis on application of chemical thermodynamics and its application to chemical equilibrium, phase changes and chemical equilibria; ideal and real gases; kinetic theory; surface absorption and electrochemistry; thermodynamics. Recommendations: CHEM:1120, and MATH:1460 or MATH:1850, and PHYS:1512 or PHYS:1612.

CHEM:4450 Synthesis and Measurement 3 s.h.
Laboratory investigations integrating synthesis and measurement techniques from inorganic, analytical, and physical chemistry; emphasis on modern applications of chemistry in biology, medicine, environmental science, catalysis, and materials science. Recommendations: CHEM:2021, and CHEM:2410 or CHEM:2420, and CHEM:3110 or CHEM:3120, and CHEM:3250, and CHEM:4430 or CHEM:4431 or CHEM:4432.

CHEM:4480 Introduction to Molecular Modeling 3 s.h.
Theory and application of ab initio quantum mechanics, semiempirical molecular orbital theory, and molecular mechanics force fields to chemical research problems; underlying theory of these methods (with emphasis on ab initio theory) and their practical application to chemical problems; computational chemistry projects using modeling software. Corequisites: CHEM:4432, if not taken as a prerequisite.

CHEM:4760 Radiochemistry: Energy, Medicine, and the Environment 3 s.h.
CHEM:4873 Atmospheric and Environmental Chemistry 3 s.h.
Fundamental chemical processes of importance in the atmosphere, soil, and water, with emphasis on kinetics and photochemistry of homogeneous and heterogeneous reactions, atmospheric structure and dynamics, global geochemical cycling, chemistry-climate relationships, environmental remediation strategies; experimental methods in field and laboratory studies. Corequisites: CHEM:4431 or CHEM:4432, if not taken as a prerequisite.

CHEM:4875 Introduction to Polymer Chemistry 2-3 s.h.

Graduate

CHEM:5091 Graduate Chemistry Orientation 2 s.h.
Pedagogy, safety and research issues relevant to advanced chemistry careers. Requirements: senior standing.

CHEM:5092 Ethics in Chemical Sciences 1 s.h.
Scholarly integrity for being a responsible chemist on graduate-level research; introduction to infrastructure of scientific scholarship with emphasis on interacting with peers, funding agencies, industrial entities; responsible conduct in research in the context of creation of knowledge, dissemination of scientific findings, intellectual property, and conflict of interest; workshops to study cases in chemical research to illustrate the principles of scholarly integrity.

CHEM:5107 Electrochemistry 2-3 s.h.
Fundamental aspects, including mass transport and electron transfer, electrochemical methodology (e.g., voltammetry and potentiometry), determination of homogeneous and heterogeneous reaction mechanisms. Recommendations: CHEM:3110, CHEM:3120, and CHEM:4171.

CHEM:5108 Spectroscopy 3 s.h.
Principles of atomic and molecular absorption and emission spectroscopy in ultraviolet, visible, and infrared regions of the spectrum, including fluorescence, phosphorescence, Raman spectroscopy; applications to analytical problems, with emphasis on modern instrumentation and methodology. Recommendations: CHEM:3110, CHEM:3120, and CHEM:4171.

CHEM:5109 Separations 3 s.h.
Analytical separations; basic theory, practical applications, instrumentation, modern techniques (extractions, gas and liquid chromatography, capillary electrophoresis), and detection (mass spectrometry). Recommendations: CHEM:3110, CHEM:3120, and CHEM:4171.

CHEM:5110 Chemical Sensors 2 s.h.
Theory, practical limitations, analytical utility based on immobilized reagents with electrochemical, thermal, optical transduction mechanisms. Recommendations: CHEM:3110 and CHEM:3120, or CHEM:4171.

CHEM:5114 Chemical Systems Modeling 2 s.h.
Basic processes and techniques; these methods applied to systems relevant to students' own research. Recommendations: CHEM:3110 or CHEM:3120 or CHEM:4171.

CHEM:5115 Biophotonics 3 s.h.

CHEM:5118 Nanomaterials 3 s.h.
Basic principles associated with nanoscience and nanotechnology; fabrication and synthesis, size dependent properties, characterization, applications of materials at nanometer length scales, recent technological breakthroughs in the field. Requirements: graduate standing or advanced undergraduate standing in engineering and science. Recommendations: knowledge of basic chemistry.

CHEM:5120 Electrochemistry of Polymer Films 1 s.h.
Use of electrochemical methods to characterize polymer and thin films; transport through polymer films and composites, electrochemistry of polymer films. Requirements: physical chemistry course.

CHEM:5150 Chemometrics 3 s.h.

CHEM:5190 Seminar: Analytical Chemistry 0-1 s.h.
Content varies.

CHEM:5199 Special Topics in Analytical Chemistry arr.

CHEM:5202 Coordination Chemistry and Spectroscopy 1,3 s.h.

CHEM:5203 Organometallic Chemistry 3 s.h.

CHEM:5204 Physical Methods in Inorganic Chemistry 3 s.h.
Application of physical methods to problems; recent developments; emphasis on magnetic resonance spectroscopy. Recommendations: CHEM:4270.

CHEM:5205 Bioinorganic Chemistry 2-3 s.h.
The role of metal ions in biology from an inorganic chemical perspective; emphasis on structure and mechanism for transition metal-containing metallo-enzymes.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>CHEM:5206</td>
<td>Solid-State and Materials Chemistry</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>CHEM:5290</td>
<td>Seminar: Inorganic Chemistry</td>
<td>0-1 s.h.</td>
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<tr>
<td>CHEM:5299</td>
<td>Special Topics in Inorganic Chemistry</td>
<td>1-3 s.h.</td>
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<tr>
<td>CHEM:5321</td>
<td>Spectroscopic Methods in Organic Chemistry</td>
<td>3-4 s.h.</td>
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<tr>
<td>CHEM:5326</td>
<td>Organic Reactions</td>
<td>3 s.h.</td>
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<tr>
<td>CHEM:5328</td>
<td>Mechanisms of Organic Reactions</td>
<td>3 s.h.</td>
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<tr>
<td>CHEM:5329</td>
<td>Advanced Organic Synthesis</td>
<td>3 s.h.</td>
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<tr>
<td>CHEM:5390</td>
<td>Seminar: Organic Chemistry</td>
<td>0-1 s.h.</td>
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<tr>
<td>CHEM:5399</td>
<td>Organic Chemistry Special Topics</td>
<td>1-3 s.h.</td>
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<tr>
<td>CHEM:5431</td>
<td>Statistical Thermodynamics I</td>
<td>3 s.h.</td>
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<tr>
<td>CHEM:5433</td>
<td>Quantum and Computational Chemistry</td>
<td>3 s.h.</td>
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<tr>
<td>CHEM:5434</td>
<td>Molecular Spectroscopy</td>
<td>3 s.h.</td>
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<tr>
<td>CHEM:5435</td>
<td>Chemical Kinetics</td>
<td>3 s.h.</td>
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<tr>
<td>CHEM:5438</td>
<td>Surface Chemistry and Heterogeneous Processes</td>
<td>3 s.h.</td>
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<tr>
<td>CHEM:5490</td>
<td>Seminar: Physical and Environmental Chemistry</td>
<td>0-1 s.h.</td>
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<tr>
<td>CHEM:5499</td>
<td>Physical Chemistry Topics</td>
<td>1-3 s.h.</td>
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<tr>
<td>CHEM:5875</td>
<td>Perspectives in Biocatalysis</td>
<td>1-3 s.h.</td>
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<tr>
<td>CHEM:5890</td>
<td>Research Frontiers in Chemistry</td>
<td>1 s.h.</td>
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<tr>
<td>CHEM:5990</td>
<td>Chemistry Colloquium</td>
<td>0-1 s.h.</td>
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<tr>
<td>CHEM:6990</td>
<td>Research Seminar</td>
<td>0-1 s.h.</td>
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<tr>
<td>CHEM:7604</td>
<td>Ethics in Chemical Sciences for Postdocs</td>
<td>0 s.h.</td>
</tr>
<tr>
<td>CHEM:7999</td>
<td>Research in Chemistry</td>
<td>arr.</td>
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</tbody>
</table>

**CHEM:5206 Solid-State and Materials Chemistry**
Introduction to the chemical concepts of solid-state chemistry; focus on synthesis and characterization of various inorganic materials; structure/property relationships, real-world examples. Recommendations: CHEM:4270.

**CHEM:5435 Chemical Kinetics**
Potential energy surfaces, transition state theory, diffusion limited rates, linear free energy relationships, isotope effects, solvent effects, RRKM theory; connection between experiment and various theories in the gas and solution phases; emphasis on assignment of experimental error to derived quantities. Recommendations: CHEM:4432.

**CHEM:5438 Surface Chemistry and Heterogeneous Processes**
Fundamental and applied aspects of surface chemical processes; theories of molecular adsorption/desorption and surface complexation; kinetics; surface analysis and instrumentation; applications of surface chemistry in heterogeneous catalysis, heterogeneous environmental/atmospheric processes, and materials chemistry. Recommendations: CHEM:4431.
Cinematic Arts

Interim chair
• Kathleen Newman

Undergraduate major: cinema (B.A.)
Undergraduate minor: cinema

Graduate degrees: M.F.A. in film and video production; M.A. in film studies; Ph.D. in film studies

Faculty: http://clas.uiowa.edu/ccl/people/faculty
Web site: http://clas.uiowa.edu/ccl/

The Department of Cinematic Arts provides students with opportunities to explore and gain insight into cinema as a subject of international and interdisciplinary study as well as creative practice. The curriculum emphasizes film and related media in their historical and cultural contexts as well as film and video production in a variety of modes. The department's faculty members offer expertise in film and video production; film history and theory, with emphasis on international film cultures; and the history, theory, and production of documentary media. Students conduct projects using state-of-the-art equipment and software that is updated regularly. Students and faculty members also have ready access to the extensive media holdings of University of Iowa Libraries and the Institute for Cinema and Culture.

The department offers undergraduate and graduate degree programs and an undergraduate minor. It also offers courses approved for the Literary, Visual, and Performing Arts area of the College of Liberal Arts and Sciences General Education Program (p. 313) and a First-Year Seminar designed for entering undergraduates.

Undergraduate Programs of Study
• Major in cinema (Bachelor of Arts)
• Minor in cinema

Bachelor of Arts

The Bachelor of Arts with a major in cinema requires a minimum of 120 s.h., including 33 s.h. of work for the major. Students must maintain a g.p.a. of at least 2.00 in all courses for the major and in all UI courses for the major. They also must complete the College of Liberal Arts and Sciences General Education Program (p. 313).

The major in cinema is an individualized, interdisciplinary study of film and the production of creative work in film, video, and interactive multimedia. It is designed to promote cultural and artistic awareness, to increase speaking and writing skills, and to develop capacities for systematic reasoning and effective production in cinema arts.

All students are expected to gain a perspective on both the study and the production of film, video, or digital media while becoming acquainted with the historical, critical, and theoretical issues of the area. In conjunction with an appropriate overall curriculum, the major in cinema can offer effective preparation for continuing study or creative work in the humanities, arts, and cinema; provide a solid foundation for careers in film, video, tele­vision, and digital production; and lead to careers in arts administration, advertising, and business.

Of the 33 s.h. required for the major, students must earn 21 s.h. in University of Iowa courses. They may count a maximum of 6 s.h. of course work from another major, minor, or certificate toward the major in cinema.

The course CINE:1834 Modes of Film and Video Production is the only production course required for the major. Students may use more advanced production courses to complete the major, but admission to these courses is limited and depends on the student's achievement in prerequisite production courses.

The major in cinema requires the following course work.

CORE COURSES

All of these:

- CINE:1601 Introduction to Film Analysis 3 s.h.
- CINE:1834 Modes of Film and Video Production 4 s.h.
- CINE:3195 Undergraduate Seminar 3 s.h.

One of these:

- CINE:1025 Introduction to Critical Reading and Viewing 3 s.h.
- CINE:1615 Introduction to Film Theory 3 s.h.

ELECTIVE COURSES

Additional cinematic arts course work (prefix CINE) 20 s.h.

From the 20 s.h. required in elective course work, students must select at least 6 s.h. in film studies courses from these:

- CINE:3135/ENGL:3135 Narrative and the Cinema 3 s.h.
- CINE:3185/GWSS:3185/WLLC:3185 Global Women's Cinema 3 s.h.
- CINE:3647/FREN:3540/GWSS:3540 Gender and Sexuality in French Cinema 3 s.h.
- CINE:3750 Topics in Cinema and Culture 3 s.h.
- CINE:4100/FREN:4100 French Cinema 3-4 s.h.
- CINE:4603 Topics in Contemporary Film 3 s.h.
- CINE:4604 Topics in European Film 3 s.h.
- CINE:4606/ASIA:4606 Topics in Asian Cinema 3 s.h.
- CINE:4608 History of Documentary Film 3 s.h.
- CINE:4616 Topics in National Cinema 3 s.h.
- CINE:4618 Topics in World Cinemas 3 s.h.
- CINE:4620 Issues in Film Theory 3 s.h.
- CINE:4674/CHIN:4206 Transnational Chinese Cinemas 3 s.h.
- CINE:4678/SPAN:4810 Topics in Latin American Cinema 3 s.h.
- CINE:4690/SPAN:4800 Chicano Cinema 3 s.h.

Four-Year Graduation Plan

The following checkpoints list the minimum requirements students must complete by certain semesters in order to stay on the University's Four-Year Graduation Plan. (Courses in the major are those required to complete the major; they may be offered by departments other than the major department.)

Note: Students must take CINE:1601 Introduction to Film Analysis before or with CINE:1834 Modes of Film and Video Production.
Before the fifth semester begins: at least two courses in the major, including CINE:1601 Introduction to Film Analysis and CINE:1834 Modes of Film and Video Production

Before the seventh semester begins: at least five more courses in the major (total of seven), including CINE:1025 Introduction to Critical Reading and Viewing or CINE:1615 Introduction to Film Theory, and at least 90 s.h. earned toward the degree

Before the eighth semester begins: at least three more courses in the major

During the eighth semester: enrollment in all remaining course work in the major, all remaining General Education courses, and a sufficient number of semester hours to graduate

Honors in the Major

Students majoring in cinema have the opportunity to graduate with honors in the major, which requires that they complete an honors thesis. Once a student has earned 75 s.h., he or she submits a written proposal for the thesis. The proposal must be approved by the faculty member who heads the student’s honors thesis committee; the committee must be composed of at least two faculty members from the Department of Cinematic Arts. The student must complete the honors thesis over the next two consecutive semesters. For specific honors thesis requirements in the cinema major, contact the Department of Cinematic Arts.

Departmental honors students must be members of the University of Iowa Honors Program, which requires students to maintain a cumulative University of Iowa g.p.a. of at least 3.33 and to fulfill other requirements; visit Honors at Iowa to learn about the University’s honors program.

Minor

The minor in cinema requires 15 s.h. of University of Iowa cinema courses, including at least 12 s.h. earned in courses numbered CINE:1620 or above. Students must maintain a g.p.a. of at least 2.00 in all courses for the minor and in all UI courses for the minor. Course work in the minor may not be taken pass/nonpass. Contact the Department of Cinematic Arts for a list of approved courses.

Graduate Programs of Study

- Master of Arts in film studies
- Master of Fine Arts in film and video production
- Doctor of Philosophy in film studies

Master of Arts: Film Studies

The Master of Arts program in film studies requires 36 s.h. of graduate credit. The program’s focus is on film in an international context, with required distributions of course work in U.S. cinema, European cinema, world cinemas, and film production, documentary film, animation, or experimental film. Students meet formal degree requirements with course work and a written examination on two areas, which the student selects from one list focusing on film theory and another list focusing on film history. Exams are offered annually in January.

Master of Fine Arts: Film and Video Production

The Master of Fine Arts program in film and video production requires 54 s.h. of graduate credit. The curriculum consists of creative and scholarly course work aimed at producing a body of artistic work in film, digital media, multimedia installation, and/or animation. Degree requirements include advanced course work in film/ media theory or history, annual public presentations and critiques, the development of an artist statement, a thesis paper, and a creative thesis project.

Doctor of Philosophy: Film Studies

The Doctor of Philosophy program in film studies requires a minimum of 72 s.h. of graduate credit. The program's course work is concentrated in film history and film theory. With the consultation and guidance of a faculty committee, students formulate and pursue a plan of study proposing areas to be mastered before the dissertation, present a predissertation exam on these areas, and write a dissertation in the area of advanced research.

Admission

Applications to graduate programs in the Department of Cinematic Arts are evaluated by faculty members. Application materials may include undergraduate and/ or graduate transcripts, personal statements, writing samples, letters of recommendation, samples of creative work, and test scores. Admission decisions are based on the full range of an applicant's accomplishments and evidence that he or she will thrive in the department's programs. The department welcomes applicants with diverse academic backgrounds; previous experience in the area of planned graduate study is desirable but not required. Contact the department or its director of graduate study for information about how to apply.

Applicants must meet the admission requirements of the Graduate College; see the Manual of Rules and Regulations of the Graduate College.

Resources

The Institute for Cinema and Culture promotes international film culture on the University of Iowa campus by supplementing the curriculum of the Department of Cinematic Arts with regular film screenings and public events, often in collaboration with other departments and programs. The institute helps departments, faculty members, and student groups present films and relevant speakers to an interdisciplinary audience. It is especially dedicated to providing Iowa students and faculty members the opportunity to view and study important films from nations and cultures otherwise underrepresented in course offerings and at local theaters.

Each semester the institute offers CINE:3627 Proseminar in Cinema and Culture, a course with public screenings devoted to a single national cinema or a focused topic in world film. It also regularly sponsors a range of campus film festivals and hosts the Cinematheque series, which showcases rare and unusual films each semester.
Courses

Lower-Level Undergraduate

CINE:1000 First-Year Seminar 1 s.h.
Small discussion class taught by a faculty member; topics chosen by instructor; may include outside activities (e.g., films, lectures, performances, readings, visits to research facilities, field trips). Requirements: first- or second-semester standing.

CINE:1025 Introduction to Critical Reading and Viewing 3 s.h.
Critical approaches to literature and audiovisual media (film, video, interactive multimedia); selected texts, scholarly and critical responses to them. Requirements: completion of rhetoric requirement. Same as CL:1025.

CINE:1185 Internship arr.
Opportunity to apply skills; faculty supervision, on or off campus. Requirements: cinema and comparative literature major.

CINE:1601 Introduction to Film Analysis 3 s.h.
Formal analysis of film; narrative cinema and approaches to narrative structure; authorship and genre issues, other major topics.

CINE:1602 Introduction to Film Studies 3 s.h.
Film history, theory, criticism; issues of form, technologies, and cultural functions of cinema; screenings of narrative, documentary, experimental films from varied periods and nations. GE: Literary, Visual, and Performing Arts.

CINE:1610 Contemporary Cinema 3 s.h.
Current cinema; key genres, movements, filmmakers, technological changes; recent cultural contexts, industrial and economic factors, changes in the film viewing experience. GE: Literary, Visual, and Performing Arts.

CINE:1615 Introduction to Film Theory 3 s.h.
Classical film theory—formalist and realist theories, authorship, genre; contemporary film theory—semiotics, feminism, psychoanalysis, ideological criticism, postmodernism, queer theory.

CINE:1620 Film Criticism 3 s.h.
Evaluation and analysis of film, from journalistic reviews to academic scholarship; principles and theoretical positions.

CINE:1625 Gender and Film 3 s.h.
Representations of femininity, masculinity, sexual identity, how they relate to society, culture; examples from feminist, psychoanalytic, queer theory.

CINE:1630 Introduction to Film Sound 3 s.h.
Sound as an acoustic, technological, aesthetic, and historical issue; functions of voice, music, sound effects.

CINE:1632 Disney in America 3 s.h.
How Walt Disney Corporation has influenced American cultural values, ideals, and experiences through its evolution from an animation company in the 1920s, to a theme park company and television producer in the 1950s, to a media conglomerate today; the corporation's national importance, Hollywood's contributions to the Depression and World War II, postwar urban and community planning, America's changing leisure behavior, advertising and childhood, modern business history, and exportation of American culture. Same as AMST:1065.

CINE:1635 Styles and Genres 3 s.h.
Major film types (musicals, science fiction, westerns, film noir) and their cultural significance.

CINE:1640 Film Authors 3 s.h.
A major director or comparison of directors; director's role in industrial and collaborative contexts, relations between biography and criticism, function of individual styles.

CINE:1645 Film and Literature 3 s.h.
Relationships among films, novels, plays, adaptations; shared and distinct formal elements of cinematic and literary texts, their cultural functions.

CINE:1834 Modes of Film and Video Production 4 s.h.
Introduction to filmmaking; how to shoot and edit short works of cinematic art; exposure to various working methods including nonfiction, fiction, and experimental modes of video production. Corequisites: CINE:1601, if not taken as a prerequisite.

CINE:2195 Individual Study arr.

CINE:2198 Honors Tutorial arr.

CINE:2620 U.S. Film 3 s.h.
American film industry; social and artistic perspectives.

CINE:2621 Introduction to European Film 3 s.h.
Major works, movements, and recent developments in European cinema; German Expressionism, Soviet montage, Italian Neorealism, French New Wave; social, cultural, political contexts. GE: Literary, Visual, and Performing Arts.

CINE:2622 World Film 3 s.h.
Filmmaking and film culture outside the United States; key works from Asia, Africa, the Middle East, Latin America; social, cultural, political contexts.

CINE:2623 Documentary Film 3 s.h.
Key works and movements in international nonfiction film, from early cinema to present; formal, historical, philosophical issues in documentary practices.

CINE:2624 Introduction to Latin American Film 3 s.h.
Introduction to filmmaking and films in Latin America through an overview, emphasis on one or more Latin American countries, or a specific theme in Latin American cinema.
CINE:2625 Introduction to Asian Film 3 s.h.
Introduction to filmmaking and films in Asia through an overview, emphasis on one or more Asian countries, or a specific theme in Asian cinema.

CINE:2654 U.S. Cinema and Culture 3 s.h.
Representation of race, ethnicity, class, gender, and sexuality in Hollywood movies. Same as AMST:2500.

CINE:2861 Screenwriting: Short Form 3 s.h.
Introduction to basic principles of screenwriting; develop, write, and workshop screenplays for short film/video projects including fiction, nonfiction, and experimental work. Prerequisites: CINE:1834. Requirements: grade of C or higher in CINE:1834.

CINE:2863 Film/Video Production: Film Festival 3 s.h.
How to run a film festival; management and orchestration of annual Iowa City International Documentary Festival. Prerequisites: CINE:1834. Requirements: grade of C or higher in CINE:1834.

CINE:2864 Film/Video Production: Alternative Forms 3 s.h.
Alternative or innovative video/film practices and technologies; varied topics. Prerequisites: CINE:1834 or INTM:2710. Requirements: for CINE:2864 — grade of C or higher in CINE:1834; for INTM:2864 — grade of C or higher in INTM:2710. Same as INTM:2864.

CINE:2865 Film/Video Production: Material of 16mm Filmmaking 3 s.h.
Individual and small-group work to create projects using 16mm filmmaking techniques including camera operation, editing, lighting, and sound production; intermediate production course. Prerequisites: CINE:1834. Requirements: grade of C or higher in CINE:1834.

CINE:2866 Film/Video Production: Nonfiction 3 s.h.
Individual and small group work to create video projects using nonfiction filmmaking techniques, from camera and lighting to postproduction. Prerequisites: CINE:1834. Requirements: grade of C or higher in CINE:1834.

CINE:2867 Screenwriting: Long Form 3 s.h.
Introduction to basic principles of screenwriting; develop, write, and workshop screenplays for longer form film/video projects including fiction, nonfiction, and experimental work. Prerequisites: CINE:1834. Requirements: grade of C or higher in CINE:1834.

CINE:2868 Film/Video Production: Fiction 3 s.h.
Individual and small group work to create video projects using fiction filmmaking techniques, from camera and lighting to postproduction. Prerequisites: CINE:1834. Requirements: grade of C or higher in CINE:1834.

CINE:2869 Introduction to Intermedia 3 s.h.
Interdisciplinary focus; emphasis on conceptual, installation, video, time-based media, performance art. Prerequisites: (ARTS:1510 and ARTS:1520) or CINE:1834. Requirements: for CINE:2869 — grade of C or higher in CINE:1834. Same as INTM:2710.

CINE:3135 Narrative and the Cinema 3 s.h.
English majors may apply this course to the following area and/or period requirement. AREA: Literary Theory and Interdisciplinary Studies. PERIOD: 20th/21st-Century Literature. Same as ENGL:3135.

CINE:3185 Global Women's Cinema 3 s.h.
Introduction to contemporary women's cinema and feminist filmmaking from around the world; emphasis on post-1968 period and cinema produced outside the United States. Same as GWSS:3185, WLLC:3185.

CINE:3195 Undergraduate Seminar 3 s.h.
Focus on a significant text or critical problem. Requirements: cinema major, and junior or senior standing.

CINE:3627 Proseminar in Cinema and Culture 1 s.h.
A national cinema or topic in international film.

CINE:3647 Gender and Sexuality in French Cinema 3 s.h.
Cultural, historical, semiotic approach to studying construction of gender identity and sexual codes in French cinema from 1920s to present. Taught in English. Prerequisites: FREN:3060 or CINE:1601 or CINE:1602 or GWSS:1001. Same as FREN:3540, GWSS:3540.

CINE:3750 Topics in Cinema and Culture 3 s.h.
One or more national cinemas in relation to social, historical, and cultural contexts. Prerequisites: CINE:1601.

CINE:3876 Video for Performance 4 s.h.
Introduction to making video for use in a performance; how video can unlock new artistic possibilities for performance in theater, dance, and performing arts in general; focus on acquiring basic skills necessary to shoot and edit video, and project it during a performance; practices of animation, found or archival footage work, and live performance. No previous knowledge of cameras or editing equipment required. Same as THTR:3876.

CINE:3877 Screenwriting: Short Form 4 s.h.
Developing, writing, and workshop screenings for short film/video projects including fiction, nonfiction, and experimental work; introduction to preproduction activities; exercises and journal assignments. Prerequisites: CINE:2865 or CINE:2866 or CINE:2867 or CINE:2868. Requirements: grade of C or higher in CINE:2865 or CINE:2866 or CINE:2867 or CINE:2868.

CINE:3878 Film and Media Practicum 1 s.h.
Research and production-oriented film and media practicum; individual and small-group work on a single film, video, or media production as determined by instructor; independent library and web-based research, group presentations, readings. Requirements: junior or senior standing.
CINE:4100 French Cinema 3-4 s.h.
Taught in English. GE: Literary, Visual, and Performing Arts. Same as FREN:4100.

CINE:4603 Topics in Contemporary Film 3 s.h.
Specific issues or periods in contemporary film.

CINE:4604 Topics in European Film 3 s.h.
Specific issues or periods in European film.

CINE:4606 Topics in Asian Cinema 3 s.h.
Issues or topics in East or South Asian cinemas. Same as ASIA:4606.

CINE:4608 History of Documentary Film 3 s.h.
A period, type, or concern of nonfiction filmmaking. Prerequisites: CINE:1601.

CINE:4616 Topics in National Cinema 3 s.h.
Cinema's intersection with the nation; questions of representation, culture, and identity in the national, subnational, and/or transnational context. Prerequisites: CINE:1601 and CINE:1602.

CINE:4618 Topics in World Cinemas 3 s.h.
Issues in international film history and film theory.

CINE:4620 Issues in Film Theory 3 s.h.
Key theorists, approaches, topics in film theory.

CINE:4674 Transnational Chinese Cinemas 3 s.h.
Films from Mainland China, Hong Kong, Taiwan, and Chinese diasporic communities, silent era to present; relationship of film to nation-state, cultural interflows, media technologies, ideologies. English subtitles. Same as CHIN:4206.

CINE:4678 Topics in Latin American Cinema 3 s.h.
Taught in English. Requirements: one Spanish literature or culture course numbered above SPAN:3200 or one film studies course. Same as SPAN:4810.

CINE:4690 Chicano Cinema 3 s.h.
History of Chicano independent and industry film and television production since the Chicano political and cultural movement began in the 1960s. Taught in English. Requirements: one Spanish literature or culture course numbered SPAN:3200 or above, or one film studies course numbered CL:2100 or above. Same as SPAN:4800.

CINE:4821 Film/Video Production: Selected Topics 4 s.h.
Exploration of a particular genre, issue, or process; varied topics; individual work on several video projects. Prerequisites: CINE:2864 or CINE:2865 or CINE:2866 or CINE:2868 or CINE:4821 or CINE:4843 or CINE:4845 or CINE:4862 or CINE:4864 or CINE:4841. Requirements: grade of C or higher in CINE:2864 or CINE:2865 or CINE:2866 or CINE:2868 or CINE:4821 or CINE:4843 or CINE:4845 or CINE:4862 or CINE:4864. Requirements: grade of C or higher in CINE:2864 or CINE:2865 or CINE:2866 or CINE:2868 or CINE:4821 or CINE:4843 or CINE:4845 or CINE:4862 or CINE:4864.

CINE:4835 Issues in Film and Video Production 4 s.h.
Proposal and grant writing, conceptualization, budgeting, and research on varied distribution models for independent films. Prerequisites: CINE:2863 or CINE:2864 or CINE:2865 or CINE:2866 or CINE:2867 or CINE:2868. Requirements: grade of C or higher in CINE:2863 or CINE:2864 or CINE:2866 or CINE:2867 or CINE:2868.

CINE:4836 Advanced Screenwriting 4 s.h.
Write a feature screenplay (105-115 pages) within the industry standard contract guidelines for independent and studio projects; completion of outline, beat sheet, treatment, first draft; one rewrite. Prerequisites: CINE:2867.

CINE:4841 Film/Video Production: Sound Design 4 s.h.
Exploration of sound design for film and video, from recording to editing and mixing; individual work on several audio and video projects. Prerequisites: CINE:2864 or CINE:2865 or CINE:2866 or CINE:2868 or CINE:4821 or CINE:4843 or CINE:4845 or CINE:4862 or CINE:4864. Requirements: grade of C or higher in CINE:2864 or CINE:2865 or CINE:2866 or CINE:2868 or CINE:4821 or CINE:4843 or CINE:4845 or CINE:4862 or CINE:4864.

CINE:4843 Film/Video Production: Image Design 4 s.h.
Lighting strategies and techniques, camera work, composition, and postproduction; individual work on several video projects. Prerequisites: CINE:2863 or CINE:2864 or CINE:2865 or CINE:2866 or CINE:2868 or CINE:3876. Requirements: grade of C or higher in CINE:2863 or CINE:2864 or CINE:2865 or CINE:2866 or CINE:2868 or CINE:3876.

CINE:4845 Film/Video Production: Editing 4 s.h.
Development of editing techniques and strategies; editing for impact, mood, story; individual work on several video projects. Prerequisites: CINE:2863 or CINE:2864 or CINE:2865 or CINE:2866 or CINE:2868 or CINE:3876. Requirements: grade of C or higher in CINE:2863 or CINE:2864 or CINE:2865 or CINE:2866 or CINE:2868 or CINE:3876.

CINE:4862 Film/Video Production: Advanced Video 4 s.h.
Expanded narrative or nonfiction/documentary topics; individual work on several video projects. Prerequisites: CINE:2864 or CINE:2865 or CINE:2866 or CINE:2868 or CINE:3876 or CINE:4821 or CINE:4841 or CINE:4843 or CINE:4845. Requirements: grade of C or higher in CINE:2864 or CINE:2865 or CINE:2866 or CINE:2868 or CINE:3876 or CINE:4821 or CINE:4841 or CINE:4843 or CINE:4845.

CINE:4864 Film Production: Advanced 16mm 4 s.h.
Processes and approaches to short 16mm film; advanced cameras; sync-sound techniques; individual work on several projects. Prerequisites: CINE:2865 or CINE:4821 or CINE:4843.
CINE:4890 Media Production Workshop 4 s.h.
Development, production, and realization of a self-directed project; methods and projects may include film, video, screenwriting, or hybrid forms. Requirements: grade of B- or higher in one advanced production course numbered 3000 or above, and submission and acceptance of written proposal by deadline.

Graduate

CINE:5673 Advanced Film Theory 3 s.h.
A major figure, issue, or approach in film theory.

CINE:5675 Advanced Film History 3 s.h.
A major period or topic in film history; issues in film historiography, research.

CINE:5677 Studies in Sound and Image 3 s.h.
Theoretical and historical approaches to film sound, technology, style.

CINE:5890 Colloquium in Film and Video Production 4 s.h.
Projects and critical studies; focus on varied topics including process and theoretical issues; workshop, readings, production. Recommendations: previous experience with video production; prior cinema courses or filmmaking experience helpful, but not required.

CINE:6009 Special Projects arr.
Requirements: doctoral candidate.

CINE:6080 American Film and American Culture 3 s.h.
Relationships between film and culture as developed in a particular approach, period, subject. Same as AMST:6080.

CINE:6605 Special Topics in European Film 3 s.h.
Key issues, movements, periods, or figures in European film.

CINE:6632 Crossing Borders Proseminar arr.

CINE:6635 Crossing Borders Seminar 2-3 s.h.

CINE:6992 Individual Study arr.
Requirements: advanced B.A. enrollment with international and comparative literary projects, or M.A. enrollment in comparative literature.

CINE:7615 Seminar: Film Theory 3 s.h.
A major figure, issue, or approach in film theory.

CINE:7616 Seminar: Film History 3 s.h.
A major period or topic in film history; issues in film historiography, research.

CINE:7992 Thesis arr.
Chair

• John F. Finamore

Undergraduate majors: ancient civilization (B.A.); classical languages (B.A.)
Undergraduate minors: ancient civilization; classical languages; Greek; health and the human condition; Latin
Postbaccalaureate certificate: classics
Graduate degrees: M.A. in classics; M.A. in Greek; M.A. in Latin; Ph.D. in classics
Faculty: http://clas.uiowa.edu/classics/people/faculty
Web site: http://clas.uiowa.edu/classics/

Classics is the study of ancient languages, literatures, and cultures of the Mediterranean basin from approximately 2000 B.C.E. to 600 C.E. It embraces three civilizations— the Minoan-Mycenaean, Greek, and Roman; two languages—Greek and Latin; and a geographical area including Europe, North Africa, Egypt, and the Near East. The Department of Classics provides a basis for understanding and interpreting the contribution of the ancient world to life in the present and the future.

The department offers a substantial selection of courses taught in English at the undergraduate and graduate levels; several are approved for the College of Liberal Arts and Sciences General Education Program (p. 313). Undergraduates in all majors may satisfy the World Languages requirement of the General Education Program with courses in Greek, Latin, or Sanskrit; see “Language for General Education” below. The department’s First-Year Seminar introduces entering undergraduates to classics.

The Department of Classics also administers an interdisciplinary minor for undergraduates; see “Minor: Health and the Human Condition” below.

Undergraduate Programs of Study

• Major in ancient civilization (Bachelor of Arts)
• Major in classical languages (Bachelor of Arts)
• Minor in ancient civilization
• Minor in classical languages
• Minor in Greek
• Minor in Latin
• Minor in health and the human condition

The department’s undergraduate majors provide a solid foundation for graduate study in classics, European literature, law, history, art, philosophy, and religion. The major in classical languages offers concentrations in Greek and/or Latin. Bachelor of Arts graduates have gone on to become secondary school and university teachers, lawyers, doctors, librarians, museum curators, and bankers.

Bachelor of Arts: Ancient Civilization

The Bachelor of Arts with a major in ancient civilization requires a minimum of 120 s.h., including at least 30 s.h. of work for the major. Students must maintain a g.p.a. of at least 2.00 in all courses for the major and in all UI courses for the major. They also must complete the College of Liberal Arts and Sciences General Education Program (p. 313).

The major concentrates on the ancient civilization of the Mediterranean world, draws on courses offered by various University departments, and allows students to create individual programs. It offers two optional tracks. The ancient Mediterranean religions track is for students with an interest in religions of the Mediterranean basin from the 10th century B.C. through the 8th century A.D. The Egypt and the ancient Near East track is for students with a particular interest in civilizations of the east Mediterranean from the earliest times through antiquity. See the “Ancient Mediterranean Religions Track” and the “Egypt and the Ancient Near East Track” below.

The major, including ancient Mediterranean religions track and Egypt and the ancient Near East track, is sponsored by the School of Art and Art History and the Departments of Classics, History, and Religious Studies.

Although the major is not preparation for graduate study in classics, it provides a sound basis for preparing individuals to teach at the secondary school and community college levels. It also provides a liberal arts and sciences foundation appropriate for further study in law, medicine, and other professions.

Students choose courses in consultation with their advisors. They must earn at least 15 s.h. of the credit required for the major in courses numbered 3000 or above, which may include classics in English courses numbered 3000 or above, the Greek language courses CLSG:2001 Second-Year Greek I and CLSG:2002 Second-Year Greek II, and the Latin language courses CLSL:2001 World of Cicero and CLSL:2002 Golden Age of Roman Poetry. Transfer credit is evaluated individually.

In addition to completing required course work, students maintain a required portfolio detailing their progress toward the major, which they must complete before graduation; see “Major Portfolio” below.

The major in ancient civilization requires the following course work.

MATERIAL CULTURE

At least 6 s.h. from these:

ANTH:3275/CLSA:3596 The Archaeology of Ancient Egypt 3 s.h.
ANTH:3276/CLSA:3235 Greek Archaeology and Ethnohistory 3 s.h.
ANTH:3277/CLSA:3240 Roman Archaeology 3 s.h.
ARTH:2320/CLSA:2226 Introduction to Ancient Art 3 s.h.
ARTH:3161 Themes in Ancient Art 3 s.h.
ARTH:3320/RELS:3704 Egyptian Art 3 s.h.
ARTH:3330/CLSA:3227 Classical Greek Art 3 s.h.
ARTH:3340 Greek Vase Painting 3 s.h.
ARTH:3350/CLSA:3232 Art of Early Rome: Patrons and Politics 3 s.h.
ARTH:3360/CLSA:3233 Art of the Ancient Roman Empire 3 s.h.
ARTH:3370/CLSA:3234 Art and Culture in Ancient Pompeii 3 s.h.

ANCIENT HISTORY

At least 6 s.h. from these:

CLSA:1117 The First Caesars: Julius Caesar to Nero 3 s.h.
CLSA:1830 Greek Civilization 3 s.h.
CLSA:1840 Roman Civilization 3 s.h.
HIST:2461/RELS:2361/CLSA:2461 Middle East and Mediterranean: Alexander to Suleiman 3 s.h.
HIST:3405/CLSA:3144 Engineering and Technology in the Ancient Mediterranean 3 s.h.
HIST:3436/CLSA:3836 Food in Ancient Mediterranean Society 3 s.h.
HIST:4400/CLSA:4400 The Roman Empire 3 s.h.
HIST:4401/CLSA:4101 Ancient Egypt and the Ancient Near East 3 s.h.
HIST:4403 Alexander the Great 3 s.h.
HIST:4404 The World of Ancient Greece 3 s.h.
HIST:4406/CLSA:4106 Warfare in Ancient Mediterranean Society 3 s.h.
HIST:4407 The Hellenistic World and Rome 3 s.h.

ANCIENT PHILOSOPHY AND RELIGIOUS STUDIES
At least 6 s.h. from these:
CLSA:1340 Magic in the Ancient World 3 s.h.
CLSA:2461/HIST:2461/RELS:2361 Middle East and Mediterranean: Alexander to Suleiman 3 s.h.
CLSA:3416/RELS:3716 Greek Religion and Society 3 s.h.
PHIL:2111 Ancient Philosophy 3 s.h.
PHIL:4152 Plato 3 s.h.
PHIL:4153 Aristotle 3 s.h.
RELS:1001 The Judeo-Christian Tradition 3 s.h.
RELS:1070 Introduction to the Hebrew Bible/Old Testament 3 s.h.
RELS:1080 Introduction to the New Testament 3 s.h.
RELS:2182/CLSA:2482 Ancient Mediterranean Religions 3 s.h.
RELS:2320 Jesus and the Gospels 3 s.h.
RELS:2912 The Bible in Film: Hollywood and Moses 3 s.h.
RELS:3103 Biblical Archaeology 1-3 s.h.
RELS:3105 The World of the Old Testament 3 s.h.
RELS:3243/CLSA:3443 Pagans and Christians: The Church from Jesus to Muhammad 3 s.h.
RELS:3245/CLSA:3445 Mythology of Otherworldly Journeys 3 s.h.
RELS:3247/CLSA:3247 Banned from the Bible: Pseudepigrapha and Apocrypha 3 s.h.
RELS:3320/CLSA:3420 In Search of the Good Life 3 s.h.
RELS:3340/CLSA:3440 Recovering Eden: The Afterlife in Early Judaism and Christianity 3 s.h.
RELS:3716/CLSA:3416 Greek Religion and Society 3 s.h.
RELS:4352/CLSA:4452 The Dead Sea Scrolls 3 s.h.

CLASSICS IN ENGLISH AND LANGUAGE COURSES
At least 9 s.h. from these:
ARAB:2001 Intermediate Modern Standard Arabic I 5 s.h.
ARAB:2002 Intermediate Modern Standard Arabic II 5 s.h.
ARAB:2030 Formal Spoken Arabic 2 s.h.
ARAB:3011 Advanced Modern Standard Arabic I 3 s.h.
RELS:4001 Biblical Hebrew I 4 s.h.
RELS:4002 Biblical Hebrew II 4 s.h.
SOAS:2902/CLSA:2902 First-Year Sanskrit: First Semester 3 s.h.
SOAS:3901/CLSA:3901 Second-Year Sanskrit: First Semester 3 s.h.
SOAS:3902/CLSA:3902 Second-Year Sanskrit: Second Semester 3 s.h.

ADDITIONAL COURSE
A course in material culture, history, philosophy, religion, or linguistics chosen in consultation with the advisor 3 s.h.

MAJOR PORTFOLIO
To comply with the Board of Regents, State of Iowa, policy on student outcomes assessment, the Department of Classics has established a method to assess the achievement level of B.A. students completing one of the department's majors. Each student must maintain a portfolio that details the student's progress in attaining the objectives of his or her major. Students must register for and complete the following course.

CLSA:3982 Graduation Portfolio 0 s.h.

A student submits the portfolio to the undergraduate advisor by midterm of the semester in which he or she intends to graduate. Formal approval of the portfolio is required for graduation. Consult the undergraduate advisor for details.

Ancient Mediterranean Religions Track
This track is intended for students who wish to study the ancient religions of the Mediterranean basin from the 10th century B.C. through the 8th century A.D. It offers an innovative curriculum for exploring and comparing the many religions of that region (Pagan, Jewish, Christian, Islamic) and their associated literatures, cultures, and languages.

The track is interdisciplinary; students select courses from archaeology, art, history, literature, and religion. The track provides a strong liberal arts foundation suitable for further study in law, medicine, and other professions. It also provides a sound basis for preparing individuals to teach ancient civilizations of the Mediterranean and the Near East, ancient history, and ancient art history at the secondary school and community college levels.

The Bachelor of Arts with a major in ancient civilization with the ancient Mediterranean religions track requires a minimum of 120 s.h., including at least 30 s.h. of work for the major. Students must maintain a g.p.a. of at least 2.00 in all courses for the major and in all UI courses for the
They also must complete the College of Liberal Arts and Sciences General Education Program (p. 313).

Students also must earn at least 15 s.h. for the major in courses numbered 3000 or above, which may include classics in English courses numbered 3000 or above, the Greek language courses CLSG:2001 Second-Year Greek I and CLSG:2002 Second-Year Greek II, and the Latin language courses CLSL:2001 World of Cicero and CLSL:2002 Golden Age of Roman Poetry. Transfer credit is evaluated individually.

It also is possible to take other languages, such as Biblical Aramaic, Syriac, and Targumic Aramaic, or Coptic as independent study through the Department of Religious Studies. Contact the Department of Classics for more information.

In addition to completing required course work, students maintain a required portfolio detailing their progress toward the major, which they must complete before graduation; see "Major Portfolio" below.

To satisfy the requirements for the major in ancient civilization with the track in ancient Mediterranean religions, 21 s.h. of the required 30 s.h. must be taken from the courses below. The remaining 9 s.h. may be taken from these lists or from the courses that count toward the ancient civilization major as listed above.

**MATERIAL CULTURE**

Up to 6 s.h. from these:

- CLSA:4501 Archaeological Methodology and Field Research 3 s.h.
- CLSA:4502 Archaeology and History of Judea 3 s.h.
- ARTH:3325 Kings, Gods, and Heroes: Art of the Ancient Near East 3 s.h.

**ANCIENT HISTORY**

Up to 6 s.h. from these:

- CLSA:2461/HIST:2461/RELS:2361 Middle East and Mediterranean: Alexander to Suleiman 3 s.h.
- HIST:4400/CLSA:4400 The Roman Empire 3 s.h.
- HIST:4401/CLSA:4101 Ancient Egypt and the Ancient Near East 3 s.h.

**ANCIENT PHILOSOPHY AND RELIGIOUS STUDIES**

Up to 6 s.h. from these:

- RELS:1001 The Judeo-Christian Tradition 3 s.h.
- RELS:1070 Introduction to the Hebrew Bible/Old Testament 3 s.h.
- RELS:1080 Introduction to the New Testament 3 s.h.
- RELS:1113 Gateway to the Bible 3 s.h.
- RELS:1130/HIST:1130 Introduction to Islamic Civilization 3 s.h.
- RELS:1225/HIST:1425 Medieval Religion and Culture 3 s.h.
- RELS:2182/CLSA:2482 Ancient Mediterranean Religions 3 s.h.
- RELS:2225/CLSA:2425 Messianic and Apocalyptic Prophecy in the Bible 3 s.h.

**CLASSICS IN ENGLISH AND LANGUAGE COURSES**

Up to 9 s.h. from these:

- CLSA:1010 Hero, God, Mortal: Literature of Greece 3 s.h.
- CLSA:1323/RELS:1323 Life in the Biblical World 3 s.h.
- CLSA:3151/HIST:3451/LAW:8825 Roman Law 3 s.h.
- RELS:4001 Biblical Hebrew I 4 s.h.
- RELS:4002 Biblical Hebrew II 4 s.h.
- SOAS:2902/CLSA:2902 First-Year Sanskrit: Second Semester 4 s.h.
- SOAS:3901/CLSA:3901 Second-Year Sanskrit: First Semester 3 s.h.
- SOAS:3902/CLSA:3902 Second-Year Sanskrit: Second Semester 3 s.h.

**ADDITIONAL COURSE**

Course in art, history, philosophy, religion, or linguistics chosen in consultation with advisor 3 s.h.

**MAJOR PORTFOLIO**

To comply with the Board of Regents, State of Iowa, policy on student outcomes assessment, the Department of Classics has established a method to assess the achievement level of B.A. students completing one of the department’s majors. Each student must maintain a portfolio that details the student’s progress in attaining the objectives of his or her major. Students must register for and complete the following course.

- CLSA:3982 Graduation Portfolio 0 s.h.
Egypt and the Ancient Near East Track

The Egypt and the ancient Near East track concentrates on the civilizations of the east Mediterranean, specifically Egypt and the cultures of Asia Minor, from the earliest times through late Antiquity.

The track is interdisciplinary; students select courses from archaeology, art, history, literature, and religion. The track provides a sound basis for preparing individuals to teach ancient civilizations of the Mediterranean and the Near East, ancient history, and ancient art history at the secondary school and community college levels. It also provides a strong liberal arts foundation suitable for further study in law, medicine, and other professions.

The Bachelor of Arts with a major in ancient civilization, Egypt and the ancient Near East track, requires a minimum of 120 s.h., including at least 30 s.h. of work for the major. Students must maintain a g.p.a. of at least 2.00 in all courses for the major and in all UI courses for the major. They also must complete the College of Liberal Arts and Sciences General Education Program (p. 313).

Students in the Egypt and the ancient Near East track choose courses in consultation with their advisors. They must earn at least 21 s.h. of the credit required for the ancient civilization major in courses numbered 3000 or above, which may include classics in English courses numbered 3000 or above, the Greek language courses CLSG:2001 Second-Year Greek I and CLSG:2002 Second-Year Greek II, and the Latin language courses CLSL:2001 World of Ciceron and CLSL:2002 Golden Age of Roman Poetry. Transfer credit is evaluated individually.

In addition to completing required course work, students maintain a required portfolio detailing their progress toward the major, which they must complete before graduation; see “Major Portfolio” below.

The major in ancient civilization with the Egypt and the ancient Near East track requires the following course work.

MATERIAL CULTURE

At least 6 s.h. from these:

- CLSA:3596/ANTH:3275 The Archaeology of Ancient Egypt 3 s.h.
- ANTH:3242 Archaeology of the Middle East—Prehistory and Early History 3 s.h.
- ARTH:2320/CLSA:2226 Introduction to Ancient Art 3 s.h.
- ARTH:3000 Digital Approaches to Art History I 3 s.h.
- ARTH:3320/RELS:3704 Egyptian Art 3 s.h.
- ARTH:3375 Birth of the Holy Land: Art and Architecture in the Ancient Middle East 3 s.h.

ANCIENT HISTORY

At least 6 s.h. from these:

- CLSA:1181/GHS:1181 Ancient Medicine 3 s.h.
- CLSA:2461/HIST:2461/RELS:2361 Middle East and Mediterranean: Alexander to Suleiman 3 s.h.
- HIST:2401 Western Civilization I 3-4 s.h.
- HIST:3405/CLSA:3144 Engineering and Technology in the Ancient Mediterranean 3 s.h.
- HIST:3436/CLSA:3836 Food in Ancient Mediterranean Society 3 s.h.

- HIST:4400/CLSA:4400 The Roman Empire 3 s.h.
- HIST:4401/CLSA:4101 Ancient Egypt and the Ancient Near East 3 s.h.
- HIST:4403 Alexander the Great 3 s.h.
- HIST:4406/CLSA:4106 Warfare in Ancient Mediterranean Society 3 s.h.

ANCIENT PHILOSOPHY AND RELIGIOUS STUDIES

At least 6 s.h. from these:

- CLSA:1340 Magic in the Ancient World 3 s.h.
- CLSA:2482/RELS:2182 Ancient Mediterranean Religions 3 s.h.
- CLSA:3440/RELS:3340 Recovering Eden: The Afterlife in Early Judaism and Christianity 3 s.h.
- CLSA:3443/RELS:3243 Pagans and Christians: The Church from Jesus to Muhammad 3 s.h.
- CLSA:3445/RELS:3245 Mythology of Otherworldly Journeys 3 s.h.
- RELS:1001 The Judeo-Christian Tradition 3 s.h.
- RELS:1130 Introduction to Islamic Civilization 3 s.h.

CLASSICS IN ENGLISH AND LANGUAGE COURSES

At least 9 s.h. from these:

- ARAB:2001 Intermediate Modern Standard Arabic I 5 s.h.
- ARAB:2002 Intermediate Modern Standard Arabic II 5 s.h.
- ARAB:2030 Formal Spoken Arabic 2 s.h.
- ARAB:3011 Advanced Modern Standard Arabic I 3 s.h.
- RELS:4001 Biblical Hebrew I 4 s.h.
- RELS:4002 Biblical Hebrew II 4 s.h.
- SOAS:2902/CLSA:2902 First-Year Sanskrit: Second Semester 4 s.h.
- SOAS:3901/CLSA:3901 Second-Year Sanskrit: First Semester 3 s.h.
- SOAS:3902/CLSA:3902 Second-Year Sanskrit: Second Semester 3 s.h.

- Classics in English courses (prefix CLSA)
- Greek courses (prefix CLSG)
- Latin courses (prefix CLSL)

ADDITIONAL COURSE

A course in material culture, history, philosophy, religion, or linguistics chosen in consultation with the advisor 3 s.h.

COURSE SELECTION REQUIREMENTS

Students in the Egypt and the ancient Near East track must earn at least 21 s.h. of the credit required for the ancient civilization major in courses chosen from the following list, with at least 15 s.h. required in courses numbered 3000 or above.

- CLSA:1181/GHS:1181 Ancient Medicine 3 s.h.
- CLSA:2482/RELS:2182 Ancient Mediterranean Religions 3 s.h.
- CLSA:3443/RELS:3243 Pagans and Christians: The Church from Jesus to Muhammad 3 s.h.
and in all UI courses for the major. They also must complete the College of Liberal Arts and Sciences General Education Program (p. 313). Transfer credit is evaluated individually.

The major trains students to read the ancient Greek and/or Latin languages and acquaints them with the major works of Greek and/or Roman literature. Classical languages students learn about the history of ancient Greece of the eighth through the fourth centuries B.C.E., where most of the modern Western notions of political, artistic, and social life are rooted. They also develop an understanding of the Roman republic and empire, when Rome established its hegemony over the Mediterranean basin, laid the foundation of law for the Western World, and spread Greece's culture to the West.

In addition to completing required course work, students maintain a required portfolio detailing their progress toward the major, which they must complete before graduation; see "Major Portfolio" below.

The major in classical languages requires the following course work.

**REQUIRED COURSES**

Intermediate or advanced Greek and/or Latin courses: CLSG:2001 through CLSG:4999, CLSL:2001 through CLSL:4999

Greek or Latin prose composition: CLSL:4076 3 s.h.

Additional classics courses at any level, including a maximum of 9 s.h. in classics in English courses (prefix CLSA) 15 s.h.

The following advanced undergraduate Greek courses are offered every other year and may be repeated or taken in any sequence. They cover a broad range of prose and poetry in historical context.

CLSL:3001 Archaic and Classical Periods I 3 s.h.
CLSL:3002 Archaic and Classical Periods II 3 s.h.
CLSL:3003 Classical and Hellenistic Periods I 3 s.h.
CLSL:3004 Classical and Hellenistic Periods II 3 s.h.

The following advanced undergraduate Latin courses are offered every other year and may be repeated or taken in any sequence. They cover a range of Latin prose and poetry in historical context from the mid-republic to the third century C.E.

CLSL:3001 Latin Literature of the Republic I 3 s.h.
CLSL:3002 Latin Literature of the Republic II 3 s.h.
CLSL:3003 Latin Literature of the Empire I 3 s.h.
CLSL:3004 Latin Literature of the Empire II 3 s.h.

**MAJOR PORTFOLIO**

To comply with the Board of Regents, State of Iowa, policy on student outcomes assessment, the Department of Classics has established a method to assess the achievement level of B.A. students completing one of the department’s majors. Each student must maintain a portfolio that details the student's progress in attaining the objectives of his or her major. Students must register for and complete the following course.

CLSA:3982 Graduation Portfolio 0 s.h.

A student submits the portfolio to the undergraduate advisor by midterm of the semester in which he or she intends to graduate. Formal approval of the portfolio is required for graduation. Consult the undergraduate advisor for details.

**Bachelor of Arts: Classical Languages**

The Bachelor of Arts with a major in classical languages requires a minimum of 120 s.h., including at least 36 s.h. of work for the major. Students must maintain a g.p.a. of at least 2.00 in all courses for the major.
intends to graduate. Formal approval of the portfolio is required for graduation. Consult the undergraduate advisor for details.

**B.A. with Teacher Licensure**

Students majoring in ancient civilization or classical languages who are interested in earning licensure to teach in elementary and/or secondary schools must complete the College of Education’s Teacher Education Program (TEP) in addition to the requirements for their major and all requirements for graduation. The TEP requires several College of Education courses and student teaching. Contact the Office of Education Services for details.

Students must satisfy all degree requirements and complete Teacher Education Program licensure before degree conferral.

**Four-Year Graduation Plan**

The following checkpoints list the minimum requirements students must complete by certain semesters in order to stay on the University’s Four-Year Graduation Plan. (Courses in the major are those required to complete the major; they may be offered by departments other than the major department.)

**B.A.: Ancient Civilization**

Before the fifth semester begins: at least two courses in the major

Before the seventh semester begins: at least six courses in the major and at least 90 s.h. earned toward the degree

Before the eighth semester begins: at least eight courses in the major

During the eighth semester: enrollment in all remaining course work in the major, all remaining General Education courses, and a sufficient number of semester hours to graduate

**B.A.: Classical Languages—Greek and Latin**


Before the seventh semester begins: sixth semester of Latin and fourth semester of Greek, or sixth semester of Greek and fourth semester of Latin; two more courses in the major; and at least 90 s.h. earned toward the degree

Before the eighth semester begins: at least two or three more courses in the major

During the eighth semester: enrollment in all remaining course work in the major, all remaining General Education courses, and a sufficient number of semester hours to graduate

**B.A.: Classical Languages—Greek Only**


Before the fifth semester begins: CLSG:2001 Second-Year Greek I and CLSG:2002 Second-Year Greek II

Before the seventh semester begins: three or four more courses in the major

Before the eighth semester begins: two or three more courses in the major and at least 90 s.h. earned toward the degree

During the eighth semester: enrollment in all remaining course work in the major, all remaining General Education courses, and a sufficient number of semester hours to graduate

**B.A.: Classical Languages—Latin Only**

Before the third semester begins: CLSL:1001 Elementary Latin I and CLSL:1002 Elementary Latin II

Before the fifth semester begins: CLSL:2001 World of Cicero and CLSL:2002 Golden Age of Roman Poetry

Before the seventh semester begins: three or four more courses in the major and at least 90 s.h. earned toward the degree

Before the eighth semester begins: two or three more courses in the major

During the eighth semester: enrollment in all remaining course work in the major, all remaining General Education courses, and a sufficient number of semester hours to graduate

**Honors in the Major**

Students majoring in ancient civilization or classical languages have the opportunity to graduate with honors in the major. Departmental honors students must maintain a g.p.a. of at least 3.50 in their first three years of classics courses. To graduate with honors in the major, they must complete two courses in honors readings during their final year, one each semester of the year, earning 3 s.h. of credit for each course. The readings and discussions must be on an ancient author or a field in ancient history or literature chosen by a student and his or her instructor. At the end of the second semester, the student presents a substantial research project that has been approved by the department. The project is evaluated for honors by two members of the department. Students who write an honors thesis in classical languages must be enrolled at the same time in the appropriate advanced language courses.

In addition to honors in their majors, undergraduate students have a variety of opportunities for honors study and activities through membership in the University of Iowa Honors Program; visit Honors at Iowa to learn about the University’s honors program.

**Minor: Ancient Civilization**

The minor in ancient civilization requires a minimum of 15 s.h., including at least 12 s.h. in advanced courses taken at the University of Iowa. Students must maintain a g.p.a. of at least 2.00 in all courses for the minor and in all UI courses for the minor. Course work in the minor may not be taken pass/nonpass. A maximum of 6 s.h. of work for
another University of Iowa major, minor, or certificate and up to 3 s.h. of lower-level transfer credit may be counted toward the minor.

Department of Classics courses in Greek numbered CLSG:2001 Second-Year Greek I or above and in Latin numbered CLSL:2001 World of Cicero or above are considered advanced for the minor in ancient civilization. Appropriate courses in art, religion, history, and philosophy may be counted toward the minor in ancient civilization, if approved by the undergraduate advisor. Students who have taken high school Greek or Latin should consult the advisor.

Minor: Classical Languages

The minor in classical languages requires a minimum of 18 s.h., including 12 s.h. in advanced courses taken at the University of Iowa. Students must maintain a g.p.a. of at least 2.00 in all courses for the minor and in all UI courses for the minor. Course work in the minor may not be taken pass/nonpass. Students may count one relevant classics department course taught in English (prefix CLSA) toward the minor. A maximum of 6 s.h. of work for another University of Iowa major, minor, or certificate and up to 3 s.h. of lower-level transfer credit may be counted toward the minor.

The sequences CLSG:2001 Second-Year Greek I and CLSG:2002 Second-Year Greek II, CLSL:2001 World of Cicero and CLSL:2002 Golden Age of Roman Poetry, and Department of Classics courses numbered 3000 or above are considered advanced for the minor in classical languages. Students may satisfy the requirements for the minor by completing CLSG:2001 Second-Year Greek I and CLSG:2002 Second-Year Greek II, CLSL:2001 World of Cicero and CLSL:2002 Golden Age of Roman Poetry, plus two courses numbered 3000 or above, one of which may be a relevant course in Greek or Roman history, culture, or literature (prefix CLSA). For a list of relevant courses, contact the undergraduate advisor. Students who have taken high school Greek or Latin should consult the advisor.

Minor: Greek

The minor in Greek requires a minimum of 15 s.h., including at least 12 s.h. in advanced courses taken at the University of Iowa. Students must maintain a g.p.a. of at least 2.00 in all courses for the minor and in all UI courses for the minor. Course work in the minor may not be taken pass/nonpass. Students may count one relevant classics department course taught in English (prefix CLSA) toward the minor. A maximum of 6 s.h. of work for another University of Iowa major, minor, or certificate and up to 3 s.h. of lower-level transfer credit may be counted toward the minor.

The sequence CLSL:2001 World of Cicero and CLSL:2002 Golden Age of Roman Poetry, and Department of Classics courses numbered 3000 or above are considered advanced for the minor in Latin. Students may satisfy the advanced courses requirement for the minor by completing CLSL:2001 World of Cicero and CLSL:2002 Golden Age of Roman Poetry plus two courses numbered 3000 or above, one of which may be a relevant course in Roman history, culture, or literature (prefix CLSA). For a list of relevant courses, contact the undergraduate advisor. Students who have taken high school Latin should consult the advisor.

Minor: Latin

The minor in Latin requires a minimum of 15 s.h., including at least 12 s.h. in advanced courses taken at the University of Iowa. Students must maintain a g.p.a. of at least 2.00 in all courses for the minor and in all UI courses for the minor. Course work in the minor may not be taken pass/nonpass. Students may count one relevant classics department course taught in English (prefix CLSA) toward the minor. A maximum of 6 s.h. of work for another University of Iowa major, minor, or certificate and up to 3 s.h. of lower-level transfer credit may be counted toward the minor.

The sequence CLSL:2001 World of Cicero and CLSL:2002 Golden Age of Roman Poetry, and Department of Classics courses numbered 3000 or above are considered advanced for the minor in Latin. Students may satisfy the advanced courses requirement for the minor by completing CLSL:2001 World of Cicero and CLSL:2002 Golden Age of Roman Poetry plus two courses numbered 3000 or above, one of which may be a relevant course in Roman history, culture, or literature (prefix CLSA). For a list of relevant courses, contact the undergraduate advisor. Students who have taken high school Latin should consult the advisor.

Minor: Health and the Human Condition

The minor in health and the human condition requires a minimum of 15 s.h., including at least 12 s.h. in courses taken at the University of Iowa. Students must maintain a g.p.a. of at least 2.00 in all courses for the minor and in all UI courses for the minor. Course work in the minor may not be taken pass/nonpass. Students may count one relevant classics department course taught in English (prefix CLSA) toward the minor. A maximum of 6 s.h. of work for another University of Iowa major, minor, or certificate and up to 3 s.h. of lower-level transfer credit may be counted toward the minor.

The minor in health and the human condition is interdisciplinary. It is administered by the Department of Classics and draws on courses from several units in the College of Liberal Arts and Sciences. It requires the following course work.

Ethics and values—at least 3 s.h. from these:
- PHIL:1034 Liberty and the Pursuit of Happiness
- PHIL:1401 Matters of Life and Death
- PHIL:2402 Introduction to Ethics
- PHIL:2415 Bioethics
- RELS:2771/GWSS:2771 Sexual Ethics
- RELS:3320/CLSA:3420 In Search of the Good Life

Historical approaches—at least 3 s.h. from these:
- CLSA:1181/GHS:1181 Ancient Medicine
- CLSA:4181 History of Western Medicine
- HIST:4160/GHS:4160 History of Public Health
- HIST:4162/GHS:4162 History of Global Health
- HIST:4203 Disability in American History
- RELS:3580/ANTH:3113/GHS:3113 Religion and Healing

Diversity and global perspectives—at least 9 s.h. from these:
AMST:1070 Drugs in American Popular Culture 3 s.h.
ANTH:2164/GHS:2164 Culture and Healing for Future Health Professionals 3 s.h.
ANTH:2181/ASP:2181/GHS:2181 The Anthropology of Aging 3 s.h.
ANTH:3111/GHS:3135 Global Aging 3 s.h.
GHS:3060 Studies in Complementary and Alternative Medicine 3 s.h.
GWSS:2750/SOC:2750 Fertility and Reproduction 3 s.h.
GWSS:3177 Women and Their Bodies in Health and Illness 3 s.h.
HIST:4605/GHS:4605 Disease, Politics, and Health in South Asia 2-4 s.h.
RELS:3431/GWSS:3131 Gender and Sexuality in Asia 3 s.h.
RHET:3610/ASP:3610 Writing in the Presence of Death: Rhetoric, Narrative, and Hospice 3 s.h.
SSW:3786/ASP:3786 Death/Dying: Issues Across the Life Span 3 s.h.

Language for General Education

The Department of Classics offers course sequences in Greek, Latin, and Sanskrit that students in all majors may use to fulfill the World Languages requirement of the College of Liberal Arts and Sciences General Education Program (p. 313).

Students who have had previous course work or other experience with Greek or Latin should take the appropriate language placement test, which helps determine the level at which a student should begin Greek or Latin language study at the University of Iowa. The tests are offered during summer orientation programs and monthly by Evaluation and Examination Service.

Students with previous knowledge of Sanskrit should consult the department about appropriate placement.

GREEK

Students who wish to fulfill the General Education Program's World Languages requirement with Greek should complete the following sequence.

CLSG:1001 Classical and New Testament Greek I 3-5 s.h.
CLSG:1002 Classical and New Testament Greek II 3-5 s.h.
CLSG:2001 Second-Year Greek I 3 s.h.
CLSG:2002 Second-Year Greek II 3 s.h.

LATIN

Students who wish to fulfill the General Education Program's World Languages requirement with Latin should complete the following sequence.

CLSL:1001 Elementary Latin I 3-5 s.h.
CLSL:1002 Elementary Latin II 3-5 s.h.
CLSL:2001 World of Cicero 3 s.h.
CLSL:2002 Golden Age of Roman Poetry 3 s.h.

SANSKRIT

Students who wish to fulfill the General Education Program's World Languages requirement with Sanskrit should complete the following sequence.

CLSA:2901 First-Year Sanskrit: First Semester 4 s.h.
CLSA:2902 First-Year Sanskrit: Second Semester 4 s.h.
CLSA:3901 Second-Year Sanskrit: First Semester 3 s.h.
CLSA:3902 Second-Year Sanskrit: Second Semester 3 s.h.

Postbaccalaureate Program of Study

- Certificate in Classics

Certificate

The Postbaccalaureate Certificate in Classics requires 18 s.h. in Department of Classics courses numbered 3000 or above (upper-level undergraduate and graduate courses). The program is designed for students who have a bachelor's degree and would like further study in Greek and Latin in order to be competitive for admission to a graduate program in classics. Entry to most graduate programs requires study of both Latin and Greek, normally a minimum of three years in one language and two years in the other.

The certificate is designed to be completed in two semesters by students who enter with two years of Latin and one to two years of Greek, or vice versa. It requires 18 s.h. in Department of Classics courses numbered 3000 or above (upper-level undergraduate and graduate courses). At least 12 s.h. of the required credit must be earned in Greek and Latin language courses; the remaining 6 s.h. may be earned in approved advanced courses taught in English (prefix CLSA). Transfer credit is not accepted toward the certificate. Students must maintain a g.p.a. of at least 3.00 to remain in good standing and complete the program.

A suggested plan of study for a student who enters the program with two years of Latin and one year of Greek is as follows.

Fall semester:

CLSA:4085 Postbaccalaureate Seminar 0 s.h.
CLSG:2001 Second-Year Greek I 3 s.h.
CLSL:3001 Latin Literature of the Republic I 3 s.h.
CLSL:3176 Elementary Latin Composition 3 s.h.

Spring semester:

CLSG:2002 Second-Year Greek II 3 s.h.
CLSL:3002 Latin Literature of the Republic II 3 s.h.
One elective with prefix CLSA, CLSG, or CLSL numbered 3000 or above 3 s.h.

A suggested plan of study for a student who enters the program with two years of Latin and two years of Greek is as follows.

Fall semester:

CLSA:4085 Postbaccalaureate Seminar 0 s.h.
CLSG:3001 Archaic and Classical Periods I 3 s.h.
REQUIRED COURSES

Comprehensive examinations and write a dissertation.

Students also must take precomprehensive and degree.

Postbaccalaureate Certificate do not count toward the degree. Courses taken to compete the Postbaccalaureate s.h. earned in courses numbered 3000-4999 toward the degree. Courses numbered 3000 or above. Students may count a maximum of 12

The Master of Arts program in classics, Greek, or Latin requires a minimum of 30 s.h. in courses numbered 3000 or above. Students may count a maximum of 12 s.h. earned in courses numbered 3000-4999 toward the degree. Courses taken to complete the Postbaccalaureate Certificate in Classics do not count toward the degree.

Students must pass a sight examination in the language(s) studied and an examination on literature and history.

Doctor of Philosophy

The Doctor of Philosophy program in classics requires a minimum of 72 s.h. of graduate credit, including the courses listed below (27 s.h.). Students may count no more than 12 s.h. earned in courses numbered 3000-4999 toward the degree. Courses taken to complete the Postbaccalaureate Certificate do not count toward the degree.

Students also must take precomprehensive and comprehensive examinations and write a dissertation.

REQUIRED COURSES

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>CLSL:3001 Latin Literature of the Republic I</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>CLSL:3176 Elementary Latin Composition</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>Spring semester:</td>
<td></td>
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<tr>
<td>CLSG:3002 Archaic and Classical Periods II</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>CLSL:3002 Latin Literature of the Republic II</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>One elective with prefix CLSA, CLSG, or CLSL numbered 3000 or above</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

Students who complete the program successfully receive a certificate from the College of Liberal Arts and Sciences and a letter from the Department of Classics.

Admission

Applicants must have a baccalaureate degree from an accredited college or university and a minimum of two years of language study (two years of Latin or two years of Greek, or one year of each). In unusual circumstances, students with less language preparation may be admitted.

Applicants who are not enrolled in a graduate or professional program may apply to the University of Iowa as undergraduate transfer students; they must state on their application that they are applying to the College of Liberal Arts and Sciences for admission to the classics postbaccalaureate certificate program. They must submit transcripts confirming preparation for certificate language study, a statement of purpose, scores on the Graduate Record Examination (GRE) General Test, a writing sample, and three letters of recommendation from faculty members at their baccalaureate institution.

Graduate Programs of Study

- Master of Arts and Doctor of Philosophy in classics
- Master of Arts in Greek
- Master of Arts in Latin

Applicants must meet the admission requirements of the Graduate College; see the Manual of Rules and Regulations of the Graduate College.

Master of Arts

The Master of Arts program in classics, Greek, or Latin requires a minimum of 30 s.h. in courses numbered 3000 or above. Students may count a maximum of 12 s.h. earned in courses numbered 3000-4999 toward the degree. Courses taken to complete the Postbaccalaureate Certificate in Classics do not count toward the degree.

Students must pass a sight examination in the language(s) studied and an examination on literature and history.

Doctor of Philosophy

The Doctor of Philosophy program in classics requires a minimum of 72 s.h. of graduate credit, including the courses listed below (27 s.h.). Students may count no more than 12 s.h. earned in courses numbered 3000-4999 toward the degree. Courses taken to complete the Postbaccalaureate Certificate do not count toward the degree.

Students also must take precomprehensive and comprehensive examinations and write a dissertation.

REQUIRED COURSES

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>CLSG:4076 Greek Composition (or equivalent)</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>CLSG:5001 Archaic Greek Literature</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>CLSG:5002 Classical and Hellenistic Literature</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>CLSL:5001 Republican Literature</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>CLSL:5002 Imperial Literature</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>CLSL:6076 Advanced Latin Composition (or equivalent)</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>Two graduate-level courses in cognate subjects such as anthropology, art history, linguistics, philosophy, or rhetoric</td>
<td>6 s.h.</td>
</tr>
<tr>
<td>Other interdisciplinary courses (with approval of the graduate advisor)</td>
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</tr>
</tbody>
</table>

The remaining course work is made up of Department of Classics courses and other courses.

Ph.D. EXAMINATIONS

Ph.D. students must take precomprehensive exams in Latin sight reading and Greek sight reading and must attempt one sight reading exam by the end of their first year of graduate study. Competence in reading both German and French must be demonstrated by the end of the second year of study.

Students must take the second-year exam at the end of their second year. The remaining exams may be taken in any sequence. Students must file a request for the fourth-year comprehensive exam at least three weeks before the date of the exam.

Sight-reading exam:
- Latin—four hours, written
- Greek—four hours, written

Second-year exam:
- Literature and history—four hours, written

Fourth-year comprehensive exam:
- Greek and Roman history/material culture based on reading list—three hours, written
- Latin literature, based on reading list—three hours, written
- Greek literature, based on reading list—three hours, written

If a student performs unsatisfactorily on either or both of the Latin and Greek reading list exams, the director of graduate studies sets up an oral exam in order to review questions on which the student did not exhibit sufficient knowledge.

Oral exam:
- Special field or author (Greek)—four hours, written
- Special field or author (Latin)—four hours, written

Facilities

University of Iowa Libraries’ Main Library and the Art Library house extensive collections of classical texts and uninterrupted runs of classical periodicals from 1850 that facilitate research in the major areas of Greek and Roman civilization. The Department of Classics has a varied collection of slides on classical subjects and a small library of reference works, texts, and issues of classical and archaeological journals. The department's classical museum contains a small collection of coins, vases, and facsimiles in bronze from Mycenae, Pompeii, and Herculaneum periods.

The University is a supporting institution of the American School of Classical Studies at Athens, the American Academy in Rome, and the Intercollegiate Center for Classical Studies in Italy.
for Classical Studies in Rome. Consult the director of undergraduate studies for more information.

The department offers students the opportunity to participate in an archaeological dig during the summer. Contact the Department of Classics in mid-February for details.

Courses

Classics in English, Lower-Level Undergraduate

All readings for these courses are in English; previous knowledge of Greek or Latin is not required.

**CLSA:1000 First-Year Seminar**

Small discussion class taught by a faculty member; topics chosen by instructor; may include outside activities (e.g., films, lectures, performances, readings, visits to research facilities). Requirements: first- or second-semester standing.

**CLSA:1010 Hero, God, Mortal: Literature of Greece**

Ancient Greek literature and culture as it responded to Homer; may include genre (e.g., epic to tragedy), religion, changing concept of hero, interaction with Mediterranean cultures, myth versus history. GE: Literary, Visual, and Performing Arts.

**CLSA:1020 Rome: Soldiers, Slaves, and Emperors**

Main themes and works of ancient Roman literature; works reflecting conflict of personal desire and public self in Rome. GE: Literary, Visual, and Performing Arts.

**CLSA:1035 Greek Tragedy, Comedy, and the Invention of Democracy**

What is a citizen? How shall women and men act as members of a greater society? Greek tragedy and comedy asked these questions, Greek playwrights used ancient myth to discuss their modern polis; major Greek tragedies and comedies by Aeschylus, Sophocles, Euripides and Aristophanes; production practices, political and social influences, interpretations by ancient and modern scholarship; select film versions of tragedies; readings in English. GE: Literary, Visual, and Performing Arts.

**CLSA:1100 Contraception Across Time and Cultures**

Methods and history of contraception and abortion; issues of unwanted pregnancy and birth control in fiction, film, and media around the world. Same as WLLC:1100, GHS:1100.

**CLSA:1117 The First Caesars: Julius Caesar to Nero**

Introduction to history, politics, and personalities of the first Caesars, the Julio-Claudians (Julius Caesar, Augustus, Tiberius, Caligula, Claudius, and Nero); conditions of the Roman social and political system that led to the Caesars; character of each emperor; changes each brought about in that system; primary and secondary sources.

**CLSA:1181 Ancient Medicine**

Thematic examination of theories and practices of Greco-Roman physicians, which in turn became the medical tradition of medieval Islamic world and European medicine until mid-19th century; historical medical terms, theories, and practices. GE: Historical Perspectives. Same as GHS:1181.

**CLSA:1323 Life in the Biblical World**

Examination of world depicted in Old and New Testaments of the Bible; archaeological evidence, ancient art, historical accounts, geography, and Bible text used to examine background of biblical text, shedding light on different aspects of daily life in antiquity from different points of view from Late Bronze Age through Roman period. Same as RELS:1323.

**CLSA:1340 Magic in the Ancient World**

Ancient Greek and Roman writings on magic, including ancient spells and charms. GE: Values, Society, and Diversity.

**CLSA:1740 Writing Strategies: Word Origins and Word Choice**

Study of words, their meanings, and their origins combined with writing; words and word histories; role of English language in the world. GE: Literary, Visual, and Performing Arts.

**CLSA:1805 Legends and Heroes of Ancient Rome**

Introduction to narratives of Roman heroes from Livy, Ovid, and Plutarch; background information for further study in classics.

**CLSA:1818 Classics and Science**

Cinematic depictions of the classical world compared with scholarly views; selected films and primary ancient sources of the same period.

**CLSA:1829 Ancient Civilization**

History, literature, art, architecture, religion, social life ca. 3000 B.C.E. to second century B.C.E. GE: Historical Perspectives.

**CLSA:1830 Roman Civilization**

History, literature, politics, religion, social structure from eighth century B.C.E. to second century C.E. GE: Historical Perspectives.

**CLSA:1875 Ancient Sports and Leisure**

Sports, games, and hobbies in the ancient world, primarily Greece and Rome, 1500 B.C.E. to 500 C.E.; ancient Olympic games, Roman festival games; anthropology of sport. GE: Values, Society, and Diversity.

**CLSA:1883 War**

Emotions soldiers have as they fight, what makes them continue voluntarily to face death, and how modern society memorializes these experiences; how literature and art transform the experience of war; human responses to war in Homer’s *Iliad* and select Greek tragedies. GE: Values, Society, and Diversity. Same as HONR:1883.
**CLSA:2016 Classical Mythology** 3 s.h.
Ancient Greek and Roman myths, their interpretation by Western civilization; emphasis on flexibility of myth and its importance for art, literature, anthropological, psychological studies. GE: Literary, Visual, and Performing Arts; Values, Society, and Diversity.

**CLSA:2018 Odysseus: The Image of a Trickster Hero in Literature and Film** 3 s.h.
How the figure of Odysseus has long intrigued the West as glorified seeker of truth or damned treacherous deceiver; representations of hero by authors that include Greek tragedians, Virgil, Dante, Alfred Lord Tennyson, Margaret Atwood, and others with a point of departure from Homer's Odysseus; survey of Odysseus's depictions throughout the centuries to understand the fascination his character held, and continues to hold, over classical and modern writers; selected adaptations of Odysseus' adventures in art and contemporary cinema to understand the exuberance of the mythical hero.

**CLSA:2178 De Cura Sui: Self-Discovery, Personal Development, and Civic Responsibility in Ancient Philosophy** 3 s.h.
Practices of self-care from a variety of ancient Greco-Roman authors; practice of philosophy; opportunity to publicly engage with elementary students as mentors; readings and writing assignments focus on primary questions (What do ancient philosophers mean by "caring for yourself"? What are the purposes of philosophical self-care?); why it is more accurate to call ancient philosophy a way of life than a study; why Greek and Roman religious beliefs are inseparable from philosophy; what metaphors dominate and guide philosophical inquiry.

**CLSA:2226 Introduction to Ancient Art** 3 s.h.
Art and architecture of the Mediterranean world (ca. 3500 B.C.E.) to death of Constantine (337 C.E.); Egyptian, Cycladic, Minoan, Mycenaean, Greek, Etruscan, and Roman cultures; artistic responses to life and death; impact of breakthroughs in technology and engineering on visual culture; role of art in empire building; interrelationships of art, politics, religion. Same as ARTH:2320.

**CLSA:2330 Introduction to Egyptian and Ancient Near Eastern Art** 3 s.h.
Art and architecture of Egypt and the Near East (ca. 3500 B.C.E.) to advent of Islam; Egyptian, Sumerian, Assyrian, Babylonian, and Persian cultures; artistic responses to life and death; impact of breakthroughs in technology and engineering on visual culture; role of art in empire building; interrelationships of art, politics, religion. Same as ARTH:2330.

**CLSA:2340 Introduction to Greek and Roman Art** 3 s.h.
Art and architecture of Greece and Rome (ca. 3000 B.C.E.) to death of Constantine (337 C.E.); Cycladic, Minoan, Mycenaean, Greek, Etruscan, and Roman cultures; artistic responses to life and death; impact of breakthroughs in technology and engineering on visual culture; role of art in empire building; interrelationships of art, politics, and religion. Same as ARTH:2340.

**CLSA:2384 Killers, Crooks, and Deviants: Ancient Law and Society** 3 s.h.
Transcripts of actual court cases from ancient Greece and Rome, from the seamy world of adultery and vigilante justice, insurance fraud, gang warfare, prostitution, and murder, to competitive spectacle of ancient courts where trained speakers used skills in rhetoric and facility with law to prosecute or defend crimes of presumed wrongdoers; ancient law, conceptions of justice, history, daily life, moral values, and role of public speaking in democratic Athens and Republican Rome.

**CLSA:2420 Jesus and the Gospels** 3 s.h.
How Jesus was depicted in the writings of the early church; reasons for the different portrayals. Same as RELS:2320.

**CLSA:2425 Messianic and Apocalyptic Prophecy in the Bible** 3 s.h.
Literary, historical, and theological analysis of biblical prophecies and their impact. Same as RELS:2225.

**CLSA:2461 Middle East and Mediterranean: Alexander to Suleiman** 3 s.h.
GE: Historical Perspectives. Same as HIST:2461, RELS:2361.

**CLSA:2482 Ancient Mediterranean Religions** 3 s.h.
Introduction to major religious traditions of ancient Mediterranean world; Mesopotamia, the Levant (Hebrew Bible), Egypt, Greece, and Rome; central aspects of mythology, ritual, and archaeology, individually and in comparative perspective; ancient Judaism and Christianity considered in their various cultural contexts; basic concepts for understanding cultural exchange; fundamental theories in the study of religion. GE: Values, Society, and Diversity. Same as RELS:2182.

**CLSA:2489 Jerusalem: The Holy City** 3 s.h.
Religious, political, and cultural history of Jerusalem over three millennia as a symbolic focus of three faiths—Judaism, Christianity, and Islam; integration of several digital learning technologies, including digital reconstructions and Google Earth tours of Jerusalem. Same as RELS:2289.

**CLSA:2651 Gender and Sexuality in the Ancient World** 3 s.h.
Survey of gender and sexuality issues in the social, political, and religious life of ancient Greece and Rome; evidence from literature, the visual arts, archaeology. Requirements: completion of rhetoric requirement and sophomore standing. GE: Values, Society, and Diversity. Same as GWSS:2651.

**Classics in English, Upper-Level Undergraduate and Graduate**

**CLSA:3008 Greek Drama in Translation** 3 s.h.
Ancient Greek plays in relation to their original social and theatrical context; how Greek tragedy has been presented in modern film and theater.

**CLSA:3020 Doctors and Patients: A Global History** 3 s.h.
How medicine increasingly requires that physicians consider subjective experience of patients inside health care system; what it means to be the object of medical treatment; exploration of global historical experience of diseased body within health care systems from antiquity to modern world using texts from doctors and patients; interaction between roles of doctor and patient—two individuals at center of health care literature. Requirements: completion of GE Rhetoric requirement.

**CLSA:3025 Advanced Topics in Mythology** 3 s.h.
In-depth exploration of issues in mythology raised in CLSA:2016; theories of myth, comparative mythology, reception of myth; experience applying methodologies and approaches to specific myths or clusters of myths in Greco-Roman and world traditions. Prerequisites: CLSA:2016.

**CLSA:3041 Studies in Latin Literature** 3 s.h.
In-depth look at specific authors or genres, as indicated in the subtitle, focusing on Latin literary texts from second century B.C.E. to fifth century C.E. and the post-antique reception of those texts. Taught in English.

**CLSA:3144 Engineering and Technology in the Ancient Mediterranean** 3 s.h.
Technologies developed and used in the ancient Mediterranean—primarily in Greece and Rome, also in Egypt and the Ancient Near East; agriculture and food preparation; construction and architecture; technologies related to warfare. Same as HIST:3405.

**CLSA:3151 Roman Law** 3 s.h.
Case-based introduction to Roman law; principles of Roman law ranging from standards of evidence to trial procedures to various topics in civil and criminal law, including family law and the law of delict. Recommendations: some background in Roman history. Same as LAW:8825, HIST:3451.

**CLSA:3227 Classical Greek Art** 3 s.h.
Art, sacred architecture from early Classical through late fourth century B.C.E.; Athens in the Golden Age. Same as ARTH:3330.

**CLSA:3228 Art of Early Rome: Patrons and Politics** 3 s.h.
Examination of architecture, sculpture, and painting in central Italy from c. 800 B.C. to the end of the Roman Republic in 27 B.C.; art in the service of social ideology and political propaganda; funerary art and its relationship to the living; artistic interactions between Etruria, Greece, and Rome. Same as ARTH:3350.

**CLSA:3233 Art of the Ancient Roman Empire** 3 s.h.
Major developments in architecture, sculpture, and painting from the ascension of Augustus to sole ruler in 31 B.C. to the death of Constantine in A.D. 337; influence of individual emperors on the development of artistic forms; relationship between public and private art; interdependency of Rome and the provinces. Same as ARTH:3360.

**CLSA:3234 Art and Culture in Ancient Pompeii** 3 s.h.
Art and architecture, as documents of ancient society and religion in towns destroyed by Mount Vesuvius in C.E. 79. Same as ARTH:3370.

**CLSA:3235 Greek Archaeology and Ethnohistory** 3 s.h.
Archaeology and ethnology of the Greek world, from end of Bronze Age to late Roman Empire; sociocultural processes that influence development and persistence of Greek civilization. Same as ANTH:3276.

**CLSA:3240 Roman Archaeology** 3 s.h.
Archaeology and ethnology of Roman civilization from Iron Age eighth-century occupation of the Palatine Hill to the end of the Roman empire in the West, A.D. 476. Prerequisites: ANTH:1201 or ANTH:1301. Same as ANTH:3277.

**CLSA:3247 Banned from the Bible: Pseudepigrapha and Apocrypha** 3 s.h.
Introduction to biblical Pseudepigrapha and Apocrypha; writings dating from third century B.C.E. to third century C.E. fictionalized attributed to characters in the Hebrew Bible and New Testament, or written as though they originated in the First or Second Temple periods, not included in Jewish or major Christian canons of scripture; English translations of documents from this period; key themes and interpretative techniques common throughout biblical texts that provide tremendous insight into the worlds that produced the Hebrew Bible and New Testament. Same as RELS:3247.

**CLSA:3416 Greek Religion and Society** 3 s.h.
From Bronze Age to the Hellenistic period, in context of Mediterranean culture; evidence such as choral hymn, inscribed prayers, magical curses inscribed on lead, architecture, sculpted offerings to the gods. GE: Values, Society, and Diversity. Same as RELS:3716.

**CLSA:3420 In Search of the Good Life** 3 s.h.
Works from Greco-Roman, Jewish, and Christian cultures to analyze various beliefs on how humans can live the good life and examine how these solutions are intimately connected to the specific conceptions of the divine world. Same as RELS:3320.

**CLSA:3440 Recovering Eden: The Afterlife in Early Judaism and Christianity** 3 s.h.
Development of afterlife ideology in Jewish and Christian traditions; ideas that influenced this development, particularly as related to problem of suffering. Same as RELS:3340.

**CLSA:3443 Pagans and Christians: The Church from Jesus to Muhammad** 3 s.h.
Introduction to history of early Christianity, from time of Jesus to rise of Islam; focus on major movements, intellectuals, institutions in this period; growth of Christianity in different geographical areas including the Middle East, Greece, Western Europe, Africa; Christian relations with Jews, pagans, Muslims; conversion; orthodoxy, heresy, making of biblical canon; martyrdom; women and gender roles; asceticism, monasticism, sexuality; church and state; theological controversy and schisms; cult of saints; the Holy Land and pilgrimage. Same as RELS:3243.
### CLSA:3445 Mythology of Otherworldly Journeys
Examination of mythology of otherworldly journeys from earliest religions to Hellenistic period; historical context; comparison for common themes in their evolution over time; directed readings of mythological texts dealing with otherworldly journeys; ways in which past cultures confronted larger mysteries of life and death. Same as RELS:3245.

### CLSA:3514 Roman Religion and Society
Roman religion of the Republic, from ca. 753 B.C.E. to 44 B.C.E.; highly organized priesthood of politically powerful men and women in religious colleges in Rome who moderated and interpreted city-wide religious practice; how Romans worshipped their gods; Roman theology—what Romans thought about the divine world—and their religious response to crises; evidence from festival calendar, temple architecture, religious art, poetry, inscriptions, plays, and various other texts.

### CLSA:3520 Dying for the Promised Land: Martyrdom and Warfare in the Western World
How martyrdom evokes images of innocents who are killed for their faith and terrorists who commit suicide bombings; how these groups may appear distinct, but share a heritage that relates absolute obedience to God and (often human) sacrifice to conquer and possession of a Promised Land; development of martyrdom ideology and its uses in religious and political conflict in Western history; examination of the Crusades, Reformation, and modern religious and political conflicts beginning with works from the Bible, Greco-Roman culture, and early Jewish and Christian literature. Same as RELS:3520.

### CLSA:3524 The Devil in Judaism and Christianity
While known by many names, the Devil as a central figure in Western religious tradition; surprisingly, how he is not found in earliest texts in the Old Testament; the Devil as embodiment of evil that has his genesis in early Jewish and Christian sectarian conflicts; how he is used as a terrifying dragon or seductive stranger to demonize those perceived as threats to a group's existence; how the Devil is used to explain righteous suffering and create cultural boundaries throughout Western culture, from ancient texts and medieval witch trials to modern cinema and politics. Recommendations: some background in Judeo-Christian tradition. Same as RELS:3524.

### CLSA:3596 The Archaeology of Ancient Egypt
Introduction to the archaeology of ancient Egypt from predynastic times to Roman Egypt, including monumental architecture; patterns of everyday life; social, economic, and demographic considerations; history of archaeology in Egypt. Same as ANTH:3275.

### CLSA:3742 Word Power: Building English Vocabulary
Analysis of unfamiliar English words through knowledge of the history and meaning of word parts.

### CLSA:3743 Word Power II: Building English Vocabulary—Advanced
Continuation of CLSA:3742; vocabulary building through additional Latin and Greek bases; vocabulary recognition through analysis of Greek and Latin elements of English words; how words change over time. Prerequisites: CLSA:3742.

### CLSA:3750 Medical and Technical Terminology
Memorization of word stems and basic medical terms, practice on computer terminal; no formal classes.

### CLSA:3836 Food in Ancient Mediterranean Society
Practices and values influenced by consumption and production of food in ancient Mediterranean societies; varied topics, including methods of food production and distribution, hierarchies of status as associated with food, food and ethnic identity, food and health, food and religion; focus on classical Greek and Roman society, Egypt, the ancient Near East, and Persia. Recommendations: familiarity with Greek and Roman civilization and history. Same as HIST:3436.

### CLSA:3849 Undergraduate Seminar in Philosophy
Selected problems. Same as PHIL:3849.

### CLSA:3913 Middle Egyptian I
Introduction to the language (Middle Egyptian dialect, c. 2200-1350 B.C.E.), and script (hieroglyphics) of ancient Egypt; in-class readings from passages in the chrestomathie; Pennsylvania State University video conference.

### CLSA:3914 Middle Egyptian II
Continuation of CLSA:3913; introduction to the language (c. 2200-1350 B.C.E.) and script (hieroglyphics) of ancient Egypt. Prerequisites: CLSA:3913.

### CLSA:3982 Graduation Portfolio
Submission of final graduation portfolio required for classical languages and ancient civilization majors. Requirements: classical languages or ancient civilization major, and senior standing.

### CLSA:4085 Postbaccalaureate Seminar
Current work of postbaccalaureate students; preparation of writing sample and portfolio. Requirements: postbaccalaureate certificate enrollment.

### CLSA:4090 Private Assignments
Readings in classical literature in translation.

### CLSA:4095 Honors Readings
Discussion, readings, research for a paper on ancient civilization. Requirements: ancient civilization major.

### CLSA:4101 Ancient Egypt and the Ancient Near East
Same as HIST:4401.
CLSA:4106 Warfare in Ancient Mediterranean Society 3 s.h.
Same as HIST:4406.

CLSA:4131 Digital Archaeological Modeling 1-3 s.h.
Introduction to foundational theory, methodology, programming skills, and conceptual understanding necessary to model remains and reconstructions of archaeological sites in various three-dimensional digital modeling environments. Requirements: background in archaeology. Same as RELS:4124.

CLSA:4181 History of Western Medicine 3 s.h.
Development and systematization of medical thought and practice in European Middle Ages from late antiquity to Renaissance; transmission of ancient Greek and Arabic medieval thought into Latin; rise of hospitals; development of medical schools; influence of Christianity; special attention to university curricula (e.g., Articella, anatomy, semiotics, prognosis, therapeutics).

CLSA:4400 The Roman Empire 3 s.h.
History of Roman empire from assassination of Julius Caesar through 5th century A.D.; political, economic, cultural, and social developments from the transition to imperial power to the shift of power from west to east. Same as HIST:4400.

CLSA:4403 Alexander the Great 3 s.h.
History of Alexander the Great and the generals who succeeded him in ruling the lands he conquered; military, political, and social history. Same as HIST:4403.

CLSA:4452 The Dead Sea Scrolls 3 s.h.
Introduction to the Dead Sea Scrolls; reading of the scrolls in English translation; examination of Qumran site archaeology; survey of broader sociopolitical context of Second Temple Judaism (586 B.C.E. to 135 C.E.) out of which the scrolls emerged. Same as RELS:4352.

CLSA:4501 Archaeological Methodology and Field Research 3 s.h.
Beginning skills in archaeological site surveying and excavation, lab work, record keeping, pottery identification and classification, data visualization; basic archaeological theory and field methods for excavation, record keeping, and pottery identification for students with no prior archaeological experience; advanced archaeological field methods for students with prior archaeological field experience.

CLSA:4502 Archaeology and History of Judea 3 s.h.
History of the ancient province of Judea (modern Israel) from Early Bronze Age to Greco-Roman period.

CLSA:4503 History of Western Medicine 3 s.h.
Development and systematization of medical thought and practice in European Middle Ages from late antiquity to Renaissance; transmission of ancient Greek and Arabic medieval thought into Latin; rise of hospitals; development of medical schools; influence of Christianity; special attention to university curricula (e.g., Articella, anatomy, semiotics, prognosis, therapeutics).

CLSA:5010 Proseminar in Classics 1 s.h.
Texts, techniques, and trends in classical scholarship; areas and subtopics of classical scholarship.

CLSA:6200 Seminar: Problems in Ancient Art 3 s.h.
Key themes and issues in ancient art. Same as ARTH:6300.

CLSA:6310 Classical Rhetoric 3 s.h.
Discourse in the ancient world. Same as COMM:6310.

CLSA:6585 Design, Visualization, and Mapping 3-D Environments 3 s.h.
Introduction to foundational modeling theory, methodology, and conceptual principles of design necessary to present information in visual formats; various software including data management solutions, database concepts, and simple programming skills that assist in visualizing and disseminating data through multiple digital and online media; basic graphing tools to map data; how to model physical properties and theoretical reconstructions of architectural elements in various 3-D digital modeling environments. Requirements: admission to public digital humanities certificate program. Same as SLIS:6585.

CLSA:6910 Graduate Pedagogy 1 s.h.
Pedagogical theories on teaching classics in translation, practical application of those theories; classroom management, grading, syllabus development; university, college, and department regulations. Requirements: graduate standing, and teaching assistant or instructor in classics courses taught in English.

CLSA:6990 Topics in Comparative Romance Linguistics 3 s.h.
Comparative study of phonology, morphology, or syntax of the main Romance languages as informed by linguistic theory; diachronic or synchronic perspective. Recommendations: additional graduate course work in linguistics. Same as LING:6190, SPAN:6190, SLA:6302.

Greek, Lower-Level Undergraduate

CLSG:1001 Classical and New Testament Greek I 3,5 s.h.
Introduction to ancient Greek; Greek readings from all periods, from Homer and classical Greek poetry and prose to Christian writings and beyond; focus on classical and New Testament works, Greek culture and thought; comprehension, vocabulary, structure of Greek words and sentences; first of two-semester sequence. GE: World Languages First Level Proficiency.

CLSG:1002 Classical and New Testament Greek II 3,5 s.h.
Continuation of CLSG:1001; focus on classical and New Testament works, Greek culture and thought, comprehension, vocabulary, structure of Greek words and sentences; increased emphasis on original texts. Prerequisites: CLSG:1001. GE: World Languages Second Level Proficiency.

CLSG:2001 Second-Year Greek I 3 s.h.
Focus on reading Greek prose authors, such as Xenophon and Plato. Prerequisites: CLSG:1002. GE: World Languages Second Level Proficiency.

CLSG:2002 Second-Year Greek II 3 s.h.
Greek, Upper-Level
Undergraduate and Graduate

CLSG:3001 Archaic and Classical Periods I 3 s.h.
Readings in major Greek authors of the Archaic and Classical periods. Prerequisites: CLSG:2002.

CLSG:3002 Archaic and Classical Periods II 3 s.h.
Continuation of CLSG:3001. Prerequisites: CLSG:2002.

CLSG:3003 Classical and Hellenistic Periods I 3 s.h.
Readings in Greek literature of the Classical and Hellenistic periods. Prerequisites: CLSG:2002. Same as RELS:3003.

CLSG:3004 Classical and Hellenistic Periods II 3 s.h.
Continuation of CLSG:3003. Prerequisites: CLSG:2002.

CLSG:4076 Greek Composition 3 s.h.
Review of Greek morphology, syntax, sentence structure; composition of sentences, short passages in Greek.

CLSG:4090 Private Assignments 1-3 s.h.
Directed reading and study with faculty member.

CLSG:4095 Honors Readings arr.
Discussion, readings, research for a paper on Greek literature, history, or civilization. Requirements: classical languages major.

Greek, Graduate

Courses numbered CLSG:6011 Archaic Greece and CLSG:6013 Hellenistic Greece cover topics from the major genres and periods of Greek literature. They are offered on a four-year cycle.

Courses numbered CLSG:6011 Archaic Greece, CLSG:6013 Hellenistic Greece, and CLSG:6012 Classical Greece cover authors, genres, and topics of the major periods of Greek history. Specific topics are determined by the instructor’s expertise and research interests. Ph.D. students are exposed to topics in all major periods at least once in four years of course work.

CLSG:6013 Hellenistic Greece arr.
Authors, genres, and topics from the death of Alexander to the accession of Augustus.

CLSG:6014 Roman Greece arr.
Greek authors of the Second Sophistic, including Plutarch, Lucian, and Philostratus; seminar.

CLSG:6910 Graduate Pedagogy 1 s.h.
Pedagogical theories on teaching classical languages, practical application of those theories; classroom management, grading, syllabus development; university, college, and department regulations. Requirements: graduate standing, and teaching assistant or instructor in Greek.

CLSG:7080 Greek Thesis arr.
For Ph.D. students writing a dissertation. Requirements: Ph.D. candidacy.

CLSG:7090 Advanced Reading arr.
Requirements: classics graduate standing.

Latin, Lower-Level
Undergraduate

CLSL:1001 Elementary Latin I 3,5 s.h.
Focus on reading Latin and on Roman culture. GE: World Languages First Level Proficiency.

CLSL:1002 Elementary Latin II 3,5 s.h.

CLSL:2001 World of Cicero 3 s.h.
Focus on reading Latin prose authors, such as Caesar and Cicero. Prerequisites: CLSL:1002. GE: World Languages Second Level Proficiency.

CLSL:2002 Golden Age of Roman Poetry 3 s.h.
Focus on reading and interpretation of Roman poets, such as Vergil and Catullus. Prerequisites: CLSL:2001. GE: World Languages Second Level Proficiency.

Latin, Upper-Level
Undergraduate and Graduate Student

CLSL:3001 Latin Literature of the Republic I 3 s.h.
Prose or poetry by major authors of the republic. Prerequisites: CLSL:2002.

CLSL:3002 Latin Literature of the Republic II 3 s.h.
Continuation of CLSL:3001. Prerequisites: CLSL:2002.

CLSL:3003 Latin Literature of the Empire I 3 s.h.
Prose or poetry by major authors of the empire. Prerequisites: CLSL:2002.

CLSL:3004 Latin Literature of the Empire II 3 s.h.
Continuation of CLSL:3003. Prerequisites: CLSL:2002.
CLSL:3176 Elementary Latin Composition 3 s.h.
Review of Latin morphology, syntax, sentence structure; composition of sentences, short passages in Latin.
Prerequisites: CLSL:2002.

CLSL:4090 Private Assignments 1-3 s.h.
Directed reading and study with faculty member for advanced students.

CLSL:4095 Honors Readings 3 s.h.
Discussions, readings, research for a paper on Roman literature, history, or civilization. Requirements: classical languages major.

Latin, Graduate

Course CLSL:6012 Augustan Rome covers topics from the major genres and periods of Latin literature. It is offered on a four-year cycle.

Courses numbered CLSL:6011 Republican Rome, CLSL:6014 Later Empire, and CLSL:6013 Tiberius to Trajan cover authors, genres, and topics of the major periods of Roman history. Specific topics are determined by the instructor's expertise and research interests. Ph.D. students are exposed to topics in all major periods at least once in four years of course work.

CLSL:5001 Republican Literature 3 s.h.
Introductory survey of Latin literature and language from the early Republic to the end of the first century B.C.E.

CLSL:5002 Imperial Literature 3 s.h.
Introductory survey of Latin literature and language from the Augustan age through the second century C.E.

CLSL:6011 Republican Rome arr.
Authors and topics from the beginnings of Roman literature to the death of Julius Caesar.

CLSL:6012 Augustan Rome arr.
Authors and topics from the death of Caesar to the accession of Tiberius.

CLSL:6013 Tiberius to Trajan arr.
Authors and topics from the first and second centuries C.E. Same as RELS:6040.

CLSL:6014 Later Empire arr.
Authors and topics from the third through fifth centuries C.E.

CLSL:6076 Advanced Latin Composition arr.
Writing of extended prose passages in Latin.

CLSL:6910 Graduate Pedagogy 1 s.h.
Pedagogical theories on teaching classical languages, practical application of those theories; classroom management, grading, syllabus development; university, college, and department regulations. Requirements: teaching assistant or instructor in Latin.

For Ph.D. students writing a dissertation. Requirements: Ph.D. candidacy.

CLSL:7090 Advanced Reading arr.
Requirements: classics graduate standing.

Sanskrit, Lower-Level Undergraduate

CLSA:2901 First-Year Sanskrit: First Semester 4 s.h.
Grammar, basic vocabulary; elementary readings. Offered fall semesters of even years. Requirements: undergraduate standing. GE: World Languages First Level Proficiency. Same as SOAS:2901.

CLSA:2902 First-Year Sanskrit: Second Semester 4 s.h.

Sanskrit, Upper-Level Undergraduate and Graduate

CLSA:3901 Second-Year Sanskrit: First Semester 3 s.h.

CLSA:3902 Second-Year Sanskrit: Second Semester 3 s.h.
The Bhagavadgita and related religious/philosophical texts. Offered spring semesters of even years. Prerequisites: SOAS:3901. Requirements: undergraduate standing. GE: World Languages Fourth Level Proficiency. Same as SOAS:3902.
Communication Sciences and Disorders

Chair
• Ruth A. Bentler

Undergraduate major: speech and hearing science (B.A.)
Undergraduate minor: communication sciences and disorders
Graduate degrees: M.A. in speech pathology and audiology; Au.D.; Ph.D. in speech and hearing science
Faculty: http://clas.uiowa.edu/comsci/people
Web site: http://clas.uiowa.edu/comsci/

The courses and degree programs of the Department of Communication Sciences and Disorders are planned to meet the needs of students preparing for careers in clinical service, college and university teaching, and research concerned with speech, language, or hearing processes and disorders. The department also offers courses for students with vocational and professional goals in other fields—for example, engineering, psychology, education, speech, theatre arts, dentistry, and medicine—which their preparation may be enriched by the study of speech and hearing processes and their disorders.

Advanced degree holders in communication sciences and disorders provide clinical services for people with speech, hearing, or language problems in hospitals, community clinics, rehabilitation facilities, elementary and secondary schools, and private practice. They teach in colleges and universities and conduct research in laboratories concerned with communication processes and disorders.

The department's programs leading to the M.A. with professional emphasis and the Au.D. are accredited by the Council on Academic Accreditation of the American Speech-Language-Hearing Association (ASHA).

Undergraduate Programs of Study
• Major in speech and hearing science (Bachelor of Arts)
• Minor in communication sciences and disorders

Students who intend to pursue professional careers in communication sciences and disorders must complete a graduate program comparable to the department's Master of Arts in speech pathology and audiology or its Doctor of Audiology (Au.D.). The undergraduate major in speech and hearing science emphasizes the normal processes of speech, hearing, and language and does not qualify an individual to work professionally in the field. Instead, it is designed primarily to prepare students for graduate work. It also may be an appropriate major for students earning College of Liberal Arts and Sciences degrees who are not planning careers in speech pathology and audiology.

Bachelor of Arts

The Bachelor of Arts with a major in speech and hearing science requires a minimum of 120 s.h., including 63-64 s.h. of work for the major. Students must maintain a g.p.a. of at least 2.00 in all courses for the major and in all UI courses for the major. They also must complete the College of Liberal Arts and Sciences General Education Program (p. 313).

Requirements include 12 core courses offered by the department and eight cognate courses offered by other departments. Transfer students must complete a minimum of 15 s.h. toward the major at the University of Iowa.

The major in speech and hearing science requires the following course work.

CORE COURSES

All of these:

- CSD:1015 Introduction to Speech and Hearing Processes and Disorders 2 s.h.
- CSD:2110 Phonetics: Theory and Applications 3 s.h.
- CSD:2111 Basic Acoustics for Speech and Hearing 3 s.h.
- CSD:3112 Anatomy and Physiology of Speech Production 4 s.h.
- CSD:3113 Introduction to Hearing Science 4 s.h.
- CSD:3116 Basic Neuroscience for Speech and Hearing 3 s.h.
- CSD:3117 Psychology of Language 3 s.h.
- CSD:3118 Language Acquisition 3 s.h.
- CSD:3185 Hearing Loss and Audiometry 3 s.h.
- CSD:4145 Developmental Language Disorders 3 s.h.
- CSD:4148 Developmental Speech Disorders 3 s.h.
- CSD:4244 Rehabilitative Audiology 3 s.h.

COGNATE COURSES

Students may choose cognate courses that help fulfill the College of Liberal Arts and Sciences General Education Program (p. 313).

Both of these:

- LING:3001 Introduction to Linguistics 3 s.h.
- PSY:1001 Elementary Psychology 3 s.h.

One of these:

- PSQF:1020/STAT:1020 Elementary Statistics and Inference 3 s.h.
- PSQF:4143/STAT:4143 Introduction to Statistical Methods 3 s.h.
- STAT:2010 Statistical Methods and Computing 3 s.h.
- STAT:3510 Biostatistics 3 s.h.

One of these:

- CHEM:1070 General Chemistry I 3 s.h.
- CHEM:1110 Principles of Chemistry I 4 s.h.
- PHYS:1400 Basic Physics (preferably with lab) 4 s.h.
- PHYS:1511 College Physics I 4 s.h.

One of these:

- PSY:2301 Introduction to Clinical Psychology 3 s.h.
- PSY:2930 Abnormal Psychology: Health Professions 3 s.h.
- SSW:1800 Basic Aspects of Aging 3 s.h.

One of these:

- PSQF:4106 Child Development 3 s.h.
- PSY:2401 Introduction to Developmental Science 3 s.h.
One of these:

- BIOL:1141 Introductory Animal Biology (with lab) 4 s.h.
- BIOL:1411 Foundations of Biology (with lab) 4 s.h.

One of these:

- MATH:1440 Mathematics for the Biological Sciences 4 s.h.
- MATH:1460 Calculus for the Biological Sciences 4 s.h.
- MATH:1850 Calculus I 4 s.h.

This cognate requirement in mathematics may be fulfilled through an acceptable score on the Advanced Placement AB or BC Calculus exam; see Credit by Exam on the Office of Admissions website. Students without AP credit are encouraged to take first-year calculus to satisfy this requirement, particularly those interested in earning a graduate degree in audiology.

**CLINICAL OBSERVATION**

Students have the opportunity and are encouraged to obtain 25 hours of supervised clinical observation, a prerequisite for participation in clinical practicums at the graduate level. This requirement is satisfied by completion of independent observations or required observations made for elective departmental courses.

**Four-Year Graduation Plan**

The following checkpoints list the minimum requirements students must complete by certain semesters in order to stay on the University’s Four-Year Graduation Plan. (Courses in the major are those required to complete the major; they may be offered by departments other than the major department.)

**Note:** The major requires specific mathematics and science competencies that may be satisfied with courses approved for the General Education Program.

**Before the fifth semester begins:** three courses in the major

**Before the seventh semester begins:** nine courses in the major and at least 60 s.h. earned toward the degree

**Before the eighth semester begins:** 12 courses in the major

**During the eighth semester:** enrollment in all remaining course work in the major, all remaining General Education courses, and a sufficient number of semester hours to graduate

**Honors in the Major**

Students majoring in speech and hearing science who have a g.p.a. of at least 3.50 may enter the department’s honors program upon recommendation of the departmental honors advisor. To graduate with honors in the major, students must complete at least 10 s.h. of course work for the major by the beginning of their junior year and must maintain a cumulative University of Iowa g.p.a. of at least 3.50. They must complete both CSD:3097 Honors Seminar and CSD:4098 Honors Thesis, registering for CSD:3097 in spring of their junior year and for CSD:4098 in both fall and spring of their senior year.

Students who intend to graduate with honors in the speech and hearing science major must be members of the University of Iowa Honors Program, which requires students to maintain a cumulative University of Iowa g.p.a. of at least 3.33 and to fulfill other requirements; visit Honors at Iowa to learn about the University’s honors program.

**Minor**

The minor in communication sciences and disorders requires a minimum of 15 s.h., including 12 s.h. in courses taken at the University of Iowa. Students must maintain a g.p.a. of at least 2.00 in courses for the minor and in all UI courses for the minor. Course work in the minor may not be taken pass/nonpass.

Students must begin the minor with CSD:1015 Introduction to Speech and Hearing Processes and Disorders, which provides a broad overview of all aspects of the normal communication process and of various disorders. Students complete the minor by choosing from the courses listed below, according to their individual interests.

This course:

- CSD:1015 Introduction to Speech and Hearing Processes and Disorders (must be taken first) 2 s.h.

A minimum of 13 s.h. from these:

- CSD:2110 Phonetics: Theory and Applications 3 s.h.
- CSD:2111 Basic Acoustics for Speech and Hearing 3 s.h.
- CSD:2140 Manual Communication 1 s.h.
- CSD:3112 Anatomy and Physiology of Speech Production 4 s.h.
- CSD:3113 Introduction to Hearing Science 4 s.h.
- CSD:3116 Basic Neuroscience for Speech and Hearing 3 s.h.
- CSD:3117 Psychology of Language 3 s.h.
- CSD:3118 Language Acquisition 3 s.h.
- CSD:3185 Hearing Loss and Audiometry 3 s.h.
- CSD:4145 Developmental Language Disorders 3 s.h.
- CSD:4148 Developmental Speech Disorders 3 s.h.
- CSD:4244 Rehabilitative Audiology 3 s.h.

**Graduate Programs of Study**

- Master of Arts in speech pathology and audiology
- Doctor of Audiology
- Doctor of Philosophy in speech and hearing science

The Master of Arts program in speech pathology and audiology is offered with two emphases: research (general), and professional (speech-language pathology).

The M.A. with research emphasis and the Ph.D. are designed to train scholar-researchers; they do not provide preparation for professional work as speech-language pathologists or audiologists.

The M.A. with professional emphasis and the Au.D. provide training for individuals who wish to do clinical work in speech-language pathology or audiology. Graduates of the M.A. professional emphasis program meet all academic and practicum requirements for clinical certification by the American Speech-Language-Hearing Association (ASHA) and for licensure by the State of Iowa. The Au.D. is required for ASHA national certification in audiology. Students preparing for clinical positions in public schools must meet school licensure or certification requirements.
of the states in which they plan to work. See "M.A. with Professional Licensure" later in this section.

**Master of Arts: Research Emphasis**

The Master of Arts program in speech pathology and audiology with research emphasis (general emphasis) requires a minimum of 38 s.h. of graduate credit. The program is designed for students who intend to pursue a Ph.D. or who seek additional education but do not intend to work professionally in the United States as speech-language pathologists or audiologists. It typically includes a substantial portion of the courses in the M.A. with professional emphasis and Au.D. curricula.

Students in the M.A. research emphasis program are required to complete a thesis and defend their research successfully at a final oral examination.

The program typically requires two years to complete. Specific course work required depends on the student's background and interests.

**Master of Arts: Professional Emphasis**

The Master of Arts program in speech pathology and audiology with professional emphasis in speech-language pathology requires a minimum of 38 s.h. of graduate credit, although students typically earn 60-65 s.h. of credit by the time they complete the degree. The program prepares clinicians in speech-language pathology to be able to function independently in a variety of clinical settings. Graduates of the program meet all academic and practicum requirements for clinical certification by the American Speech-Language-Hearing Association and for licensure by the State of Iowa. The program is designed to ensure that upon graduation, the student will meet requirements for immediate professional employment.

M.A. students usually have a background of undergraduate courses in speech and hearing science, psychology of language, and human behavior that is equivalent to an undergraduate major in speech and hearing science at the University of Iowa.

Before registering in the program, entering M.A. students receive descriptive materials about basic science core courses considered to be required preparation for the M.A. program, and required M.A. clinical core courses for which the department may accept comparable courses taken at the undergraduate level. Decisions about incorporating background course work in these areas are made by the faculty advisor in consultation with the student and the instructors of the basic science or clinical core courses. Entering students must have completed the following courses or their equivalents.

All of these:

- **CSD:2110 Phonetics: Theory and Applications** 3 s.h.
- **CSD:2111 Basic Acoustics for Speech and Hearing** 3 s.h.
- **CSD:3112 Anatomy and Physiology of Speech Production** 4 s.h.
- **CSD:3113 Introduction to Hearing Science** 4 s.h.
- **CSD:3116 Basic Neuroscience for Speech and Hearing** 3 s.h.
- **CSD:3117 Psychology of Language** 3 s.h.
- **CSD:3118 Language Acquisition** 1-3 s.h.
- **CSD:3185 Hearing Loss and Audiometry** 3 s.h.
- **PSQF:1020 Elementary Statistics and Inference** 3 s.h.
- **Biology, physics, chemistry, or mathematics courses (must include at least one biology, physics, or chemistry course)** 6 s.h.
- **Behavioral science or social science courses (must include at least one psychology course)** 6 s.h.

Students pursuing the M.A. with professional emphasis must complete at least 4 s.h. of work related to research. This may be accomplished by any combination of enrollment in seminars (2 s.h. each) and/or research hours. Completion of the research hours may consist of work toward a thesis or preparation of a paper involving one or a combination of the following: literature review, prospectus development, and presentation of data. A paper is required at the end of each semester's enrollment. An exception to this requirement can be made in the case of research hours leading to a thesis.

Candidates for an M.A. with professional emphasis in speech-language pathology are not required to complete a thesis, although all students demonstrating research aptitude and interest are encouraged to do so. Students who do not elect the thesis option are required to take final written comprehensive examinations.

A typical M.A. professional emphasis program usually takes two calendar years to complete but may take longer, depending on the student's background and personal interests.

**CORE REQUIREMENTS**

All students seeking an M.A. with professional emphasis in speech-language pathology must take the following.

- **CSD:5135 Foundations of Clinical Practice I** 1-3 s.h.
- **CSD:5136 Foundations of Clinical Practice II** 1 s.h.
- **CSD:5137 Foundations of Clinical Practice III** 1 s.h.

These courses must be taken during the first year of study.

- **CSD:5510 Seminar: Introduction to Research in Speech and Hearing (taken fall semester of first year)** 0-1 s.h.
- **CSD:6515 Proseminar (taken fall and spring semesters of first year)** 0 s.h.

In addition, they must take the following courses unless they completed equivalent courses as undergraduates.

- **CSD:2140 Manual Communication** 1 s.h.
- **CSD:3116 Basic Neuroscience for Speech and Hearing** 3 s.h.
- **CSD:3185 Hearing Loss and Audiometry** 3 s.h.
- **CSD:4114 Introduction to Voice Disorders** 2 s.h.
- **CSD:4115 Structural Disorders** 2 s.h.
- **CSD:4145 Developmental Language Disorders** 3 s.h.
- **CSD:4146 Neurogenic Disorders of Language** 3 s.h.
- **CSD:4147 Neurogenic Disorders of Speech** 2 s.h.
- **CSD:4183 Introduction to Stuttering** 2 s.h.
- **CSD:4244 Rehabilitative Audiology** 3 s.h.

Also required are additional semester hours of practicum registration sufficient to meet supervised, direct clinical experience requirements for the Certificate of Clinical Professional Licensure.
Competence of the American Speech-Language-Hearing Association and the Iowa license, and to provide broad, supervised practicum experience.

In addition to the core requirements listed above, all students preparing to be speech-language pathologists or audiologists in Iowa following criteria meet the requirements for endorsement requirements of the states in which they plan to work. The typically must meet school licensure or certification of Audiology) or the equivalent. Students preparing for careers in audiology should consult their advisors.

M.A. with Professional Licensure

M.A. with Licensure to Work Outside Public Schools

A number of states, including Iowa, require a state license in speech-language pathology or audiology for persons who work in settings outside the public schools. Students who meet the requirements listed above for the M.A. in speech pathology and audiology with professional emphasis also meet the academic requirements for the license in Iowa as well as in most other states. National certification requires a clinical doctoral degree (Doctor of Audiology) or the equivalent. Students preparing for careers in audiology should consult their advisors.

M.A. with Public School Licensure

Students preparing for clinical positions in public schools typically must meet school licensure or certification requirements of the states in which they plan to work. The following criteria meet the requirements for endorsement as speech-language pathologists or audiologists in Iowa and most other states:

- a master's degree with professional emphasis in speech-language pathology or audiology or the equivalent;
- completion of an approved human relations component;
- completion of courses that cover the education of the disabled and the gifted and talented (e.g., exceptional persons, education of the gifted); and
- completion of the requirements in speech-language pathology or audiology and the 20 s.h. professional education sequence, including EDTL:5104 Language Disorders in School-Aged Children and EDTL:4192

Special Area Student Teaching as a speech-language pathologist or audiologist.

The professional education sequence requires course work in the following areas.

Curriculum (e.g., reading, methods, curriculum development)

Foundations (e.g., philosophy of education, foundations of education)

Educational measurement (e.g., tests and measurements, measures and evaluations of instruction)

Educational psychology (e.g., educational psychology, counseling theories and techniques)

Special education (e.g., introduction to special education, exceptional persons, learning disabilities)

Child development (e.g., human growth and development, principles and theories of child development, history and theories of early childhood education)

Note: General Education Program courses (e.g., introduction to psychology, sociology, history, literature, and humanities) do not meet the requirements of the professional education sequence.

Doctor of Audiology

The Doctor of Audiology (Au.D.) requires 95 s.h. of graduate credit. Individuals who wish to work as audiologists in the United States must hold a clinical doctoral degree or the equivalent.

The four-year Au.D. program is designed for students with an undergraduate degree in speech and hearing science. Au.D. students must complete the following courses. They may be excused from taking courses whose equivalents they completed successfully during undergraduate study.

All of these:

- CSD:4145 Developmental Language Disorders 3 s.h.
- CSD:4244 Rehabilitative Audiology 3 s.h.
- CSD:5135 Foundations of Clinical Practice I 1-3 s.h.
- CSD:5219 Fundamentals of Laboratory Instrumentation 3 s.h.
- CSD:5224 System and Signal Theory for Speech and Hearing Science 3 s.h.
- CSD:5240 Hearing Aids I 3 s.h.
- CSD:5246 Advanced Audiology 3 s.h.
- CSD:5255 Educational Audiology 2 s.h.
- CSD:5256 Anatomy and Physiology of Hearing 3-4 s.h.
- CSD:5311 Clinical Practice in Audiology 2-3 s.h.
- CSD:6230 Advanced Hearing Science 2 s.h.
- CSD:6242 Hearing Aids II 3 s.h.
- CSD:6245 Pediatric Audiology 3 s.h.
- CSD:6247 Medical Audiology 2 s.h.
- CSD:6249 Cochlear Implants 1-3 s.h.
- CSD:6290 Auditory Evoked Potentials 3 s.h.
- CSD:6291 Vestibular Assessment and Rehabilitation 3 s.h.
- CSD:6292 Advanced Rehabilitative Audiology 1 s.h.
- CSD:6317 Audiology Business Practice Management 1 s.h.
- CSD:6318 Hearing Loss Prevention 2 s.h.
The Doctor of Philosophy program in speech and hearing science requires a minimum of 72 s.h. of graduate credit. The program provides flexible, comprehensive training for scholar-researchers interested in communication processes and their disorders. Students with diverse backgrounds in the natural and behavioral sciences are encouraged to apply and develop their skills in an atmosphere of interdisciplinary research.

The Ph.D. program reflects the broad interests of its multidisciplinary faculty, whose members have diverse backgrounds in speech, language, hearing, engineering, physiology, physics, psychology, linguistics, and bioengineering. Faculty members are committed to an interdisciplinary approach to questions at every level of the speech and language production/perception system.

The purpose of the doctoral program is to provide the integrated knowledge necessary for a productive career in speech-language pathology and audiology, communication science, and related areas.

The department encourages candidates with special interests, goals, or backgrounds to develop individualized programs of study. There is no standard curriculum for the Ph.D.; rather, a program of study is developed by each student in consultation with a faculty committee. The course of study is developed from courses offered by the department, courses in other areas (e.g., physics, engineering, psychology, mathematics, statistics, physiology, psychology, and others), and special reading and research experiences.

The following courses are offered by the department of Communication Sciences and Disorders primarily for Ph.D. students. Students interested in specific areas of research and selected publication citations of the faculty are encouraged to write to the department.

**Doctor of Philosophy**

### CSD:6519 Seminar: Evidence-Based Practice 2 s.h.
### CSD:7238 Capstone Requirement 1 s.h.
### MATH:1460 Calculus for the Biological Sciences (or one semester of calculus) 4 s.h.

One of these:

- BIOS:5120 Design and Analysis of Biomedical Studies 3 s.h.
- PSOF:6243 Intermediate Statistical Methods 4 s.h.

Students may select any of the following electives. With their advisors’ consent, they may substitute other University of Iowa course work.

- CSD:5222 Speech and Hearing Anatomy 2 s.h.
- CSD:6538 Seminar: Hearing Science 2 s.h.
- ASL:3200 Topics in Deaf Studies 3 s.h.
- ASLE:3905 Teaching Deaf and Hard of Hearing Students 3 s.h.
- EDTL:5104 Language Disorders in School-Aged Children 3 s.h.
- OTO:8199 Basic Otolaryngologic Science 2 s.h.

**CSD:5256 Anatomy and Physiology of Hearing** 3-4 s.h.

**CSD:5310 Scientific Writing** 3 s.h.

**CSD:5511 Introduction to Doctoral Research** (taken spring of the first year) 1 s.h.

**CSD:6230 Advanced Hearing Science** 2 s.h.

In addition, seminars offered by the department cover a broad range of topics relevant to doctoral study.

Students in the Ph.D. program usually are expected to register for research credit (CSD:7590 Research) during each semester of residence and to register for and participate in CSD:6515 Proseminar.

Knowledge in each of the areas of hearing, speech, language, mathematics, statistics, computer science, and instrumentation is required of all students. Decisions regarding the extent of this knowledge and how it is obtained (e.g., course work or independent study) are made jointly by the student and the student’s faculty committee.

Doctoral students who have not written a master’s thesis must complete the equivalent of a master’s thesis project as well as the comprehensive examination. They also must successfully complete and submit a dissertation based on original research.

**Joint Au.D./Ph.D.**

The Department of Communication Sciences and Disorders and the Graduate College offer the joint Doctor of Audiology/Doctor of Philosophy in speech and hearing science. The joint Au.D./Ph.D. program is especially appropriate for students who would like to practice audiology and hold a faculty position at a university. The program requires 137 s.h., permitting students to count 30 s.h. of the 95 s.h. required for the Au.D. degree toward the 72 s.h. required for the Ph.D. degree. Students complete all of the course work required for the Au.D.; the course of study for the Ph.D. is developed by each student in consultation with a faculty committee (see “Doctor of Philosophy” above). Consult the department to learn more about the joint degree program.

**Admission**

Applicants must meet the admission requirements of the Graduate College; see the Manual of Rules and Regulations of the Graduate College.

Each of the department’s graduate programs requires that applicants take the Graduate Record Examination (GRE) General Test before they apply for admission.

Admission to the M.A. and Au.D. programs is competitive; applicants’ credentials are considered in relation to those of others in the applicant pool, and a limited number of individuals are admitted to each program. Applicants whose undergraduate g.p.a. is below 3.00 or whose GRE General Test scores are lower than 450 in any area (verbal, quantitative, and analytic) rarely are admitted to either program. Admission is for fall; the application deadline is January 1. All applications to the M.A. and Au.D. programs must be submitted through CSDCAS (Central Application Service for Communication Science and Disorders).

Admission to the Ph.D. program is based on each individual’s aptitudes and interests in research areas rather than on admitting a certain number of students. Applicants should be enrolled in a master’s degree.
In addition to the clinical training in the Wendell Johnson Speech and Hearing Clinic, training also may be acquired in supervised clinical practice with elementary school children through various state area education agencies; and in supervised clinical practice in speech, language, and hearing services provided by the University of Iowa Hospitals and Clinics Consolidated Speech and Swallowing Services, the Regional Child Health Specialty Clinics, Center for Disabilities and Development, and the Veterans Affairs Iowa City Health Care System.

Public and private departments and programs in addition to those mentioned above often contribute to the cooperative professional training, research, and service programs.

Research Facilities
Facilities in the Wendell Johnson Speech and Hearing Center include audiometric testing suites, diagnostic and remediation suites, equipment for diagnosis and therapy, a closed-circuit television system, and laboratories and equipment for acoustic, physiologic, and perceptual studies of speech, and for audiologic, psychoacoustic, and neurophysiologic studies of hearing. Mechanical and electronic shops and trained technical personnel are available for assistance in research instrumentation.

Cooperation with departments in the Carver College of Medicine, the Department of Psychological and Brain Sciences (College of Liberal Arts and Sciences), and the University of Iowa DELTA Center makes additional laboratory facilities available for research on problems in speech and hearing. The participation and cooperation of specialists from varied fields, including psychology, child development, education, engineering, statistics, and medicine, further broaden the scope of research activities in speech and hearing.

Courses
Lower-Level Undergraduate

CSD:1000 First-Year Seminar 1 s.h.
Small discussion class taught by a faculty member; topics chosen by instructor; may include outside activities (e.g., films, lectures, performances, readings, visits to research facilities). Requirements: first- or second-semester standing.

CSD:1001 CLAS Master Class 1-3 s.h.
Exploration of a single topic in a series of lectures by faculty presenting divergent perspectives; illuminates intellectual adventure inherent in liberal arts and sciences; encourages discovery of majors and other areas of study within the College of Liberal Arts and Sciences. Same as CLAS:1001, RELS:1010, THTR:1001, CS:1001, PHIL:1001, ENGL:1001, BIOL:1001, ARTS:1001.

CSD:1015 Introduction to Speech and Hearing Processes and Disorders 2 s.h.
Introduction to communication sciences and disorders field; clinical and research works; wide range of readings; survey course with less emphasis on specific disorders.
CSD:1800 Basic Aspects of Aging 3 s.h.

CSD:2110 Phonetics: Theory and Applications 3 s.h.
Basic concepts: articulatory and acoustic description of sound production, dialect variations, language differences; development of phonetic transcription skills with emphasis on English phonetics, clinical applications to developing and disordered speech. Offered fall semesters.

CSD:2111 Basic Acoustics for Speech and Hearing 3 s.h.
Principles of sound, simple harmonic motion, sound pressure and intensity, decibels, complex waves, Fourier analysis, resonance and filters, distortion, transmission of sound. Requirements: completion of department math requirement.

CSD:2140 Manual Communication 1 s.h.
Training in use of sign systems in manual communication.

Upper-Level Undergraduate and Graduate

CSD:3097 Honors Seminar 2 s.h.
Research topics and procedures in speech and hearing sciences; ongoing faculty research, research opportunities, possible research projects. Requirements: honors standing with intent to complete an honors thesis.

CSD:3112 Anatomy and Physiology of Speech Production 4 s.h.
Normal anatomy, physiology of structures used to produce speech; principles, methods for instrumental study of speech production. Offered spring semesters. Prerequisites: CSD:2110.

CSD:3113 Introduction to Hearing Science 4 s.h.
Normal auditory process; anatomy and physiology of auditory system; subjective correlates of auditory stimuli. Offered fall semesters. Prerequisites: CSD:2111.

CSD:3116 Basic Neuroscience for Speech and Hearing 3 s.h.
Basic anatomy, physiology of central nervous system; emphasis on neural systems involved in normal and disordered communication. Offered fall semesters. Requirements: biology, zoology, or physiology course. Same as LING:3116.

CSD:3117 Psychology of Language 3 s.h.
Theoretical, empirical investigations of linguistic behavior; behaviorist, rationalist models in context of formal linguistic structure and context of models of speech perception and production. Offered spring semesters. Prerequisites: LING:3001. GE: Social Sciences. Same as LING:3117.

CSD:3118 Language Acquisition 1-3 s.h.

CSD:3122 Speech Production: Anatomy and Physiology 4 s.h.
Anatomy and physiology of the respiratory, phonatory, and articulatory systems and the systems' roles during speech production; approaches to instrumental assessment of speech physiologic events.

CSD:3127 Introduction to Psycholinguistics 3 s.h.
Theoretical and empirical investigations of linguistic behavior in the context of formal linguistic structure, models of speech perception and production; readings of text and research papers; audio-visual demonstrations of classical speech perception and production phenomena.

CSD:3185 Hearing Loss and Audiometry 3 s.h.
Introduction to profession of audiology; overview of hearing disorders, evaluation, treatment; basic pure-tone and speech audiometry. Offered fall semesters. Prerequisites: CSD:3113.

CSD:3187 Early Literacy Instruction for Young Children 3 s.h.
Service-learning involving lecture, class discussion, and student participation in an early literacy program for preschoolers; concepts and skills necessary to conduct story time groups with young children that target development of print knowledge; application of learning by reading to small groups of preschool children. Corequisites: PSQF:4106 or PSY:2401.

CSD:3993 Research Practicum arr.
Individual or small group participation in faculty research projects.

CSD:4098 Honors Thesis 2 s.h.
Close work with a faculty mentor. Prerequisites: CSD:3097.

CSD:4114 Introduction to Voice Disorders 2 s.h.
Basic foundations for management of voice disorders. Offered spring semesters. Prerequisites: CSD:3112.

CSD:4115 Structural Disorders 2 s.h.
Therapy approaches used to treat speech production and swallowing disorders associated with disorders that affect structure and physiology of the speech and swallowing mechanism; basic knowledge necessary for clinical practice by clinicians who do not specialize in management of patients with head and neck cancer, cleft palate, or neurological disorders. Offered fall semesters. Prerequisites: CSD:2110 and CSD:3112.

CSD:4120 Clinical Observations in Communication Disorders 2 s.h.
Diagnosis and treatment of a wide range of speech, language, or hearing disorders in a variety of settings; basic understanding of the evaluation process, goal setting, behavior management, pacing of therapy, shaping of behavior, tracking performance/learning, and professional and ethical behavior through observation of clinical interactions; completion of 25 hours of observation as required by the American Speech-Language-Hearing Association for obtaining national certification. Recommendations: senior or graduate standing in communication sciences and disorders.

CSD:4125 Clinical Spanish for Speech-Language Pathologists

Professional fluency in Spanish; focus on vocabulary and topics commonly encountered in speech and language pathology clinical setting; use of professional vocabulary to discuss research articles; administration of standardized assessments and therapy techniques in Spanish. Taught in Spanish. Prerequisites: CSD:1015 and CSD:2110 and CSD:3112. Requirements: completion or satisfaction of GE language requirement in Spanish through SPAN:1502, and at least one upper-level writing, speaking, or literature course in Spanish. Recommendations: advanced-level verbal and written competency in Spanish.

CSD:4145 Developmental Language Disorders

Nature of developmental disorders; basic concepts including behavioral characteristics, developmental patterns, etiology theories; assessment and intervention principles in semantics, morphology, syntax. Offered fall semesters. Prerequisites: CSD:3118.

CSD:4146 Neurogenic Disorders of Language

Overview of communication disorders secondary to acquired brain damage in adults; focus on aphasia, communication disorders arising from dementia, right-hemisphere stroke, traumatic brain injuries; general principles of diagnosis and intervention. Offered fall semesters. Prerequisites: CSD:1015 and (CSD:2110 or LING:3005) and CSD:3112 and CSD:3116.

CSD:4147 Neurogenic Disorders of Speech

Speech disorders secondary to acquired brain damage in adults; clinical intervention issues. Offered spring semesters. Prerequisites: CSD:3116.

CSD:4148 Developmental Speech Disorders

Review of typical phonological development in children; introduction to assessment and intervention practices for articulation and phonological disorders in children; may include apraxia, cerebral palsy, and cleft palate. Prerequisites: CSD:2110 and CSD:3118.

CSD:4165 Communication Disorders and Aging

Introduction to speech, language, and hearing processes and disorders among older adults; survey of characteristics of communication and communication breakdown, remediation, and strategies for improving communication with older adults with communication disorders; primarily for nonmajors and service providers other than speech-language pathologists and audiologists. Offered spring semesters of even years. Same as ASP:4165.

CSD:4183 Introduction to Stuttering

Theoretical perspectives on the nature of stuttering, including onset and development, basic phenomena, beginning treatment principles. Offered spring semesters. Prerequisites: CSD:3112.

CSD:4186 Problems: Speech/Hearing Processes and Disorders

CSD:4244 Rehabilitative Audiology

Theory, procedures for assessment, rehabilitation of speech, hearing, language deficits of people with hearing impairment. Offered spring semesters. Prerequisites: CSD:3185 and CSD:4145.

Graduate

CSD:5104 Language Disorders in School-Aged Children

Emphasis on elementary grades; usually taken in conjunction with EDTL:4192, which provides approximately 70 hours of supervised clinical practice in elementary schools. Recommendations: primarily for communication sciences and disorders majors. Same as EDTL:5104.

CSD:5135 Foundations of Clinical Practice I

Basic concepts of clinical practice, including models of diagnosis, fundamentals of clinical data collection and measurement, treatment planning, professional writing. Offered fall semesters. Prerequisites: CSD:1015 and (CSD:2110 or LING:3005) and CSD:3112 and CSD:3118 and PSQF:1020. Corequisites: CSD:4145.

CSD:5136 Foundations of Clinical Practice II

Advanced concepts of clinical practice, including principles of human behavior change, clinical decision making, generalization, transfer and maintenance, models of service delivery, ethical practice, advanced professional writing. Offered spring semesters. Prerequisites: CSD:5135.

CSD:5137 Foundations of Clinical Practice III

Advanced principles of clinical practice, including risk management, public policy and models of third-party reimbursement, professional issues. Offered fall semesters. Prerequisites: CSD:5136.
CSD:5201 Principles of Voice Production 3 s.h.
Basic physical, physiological, pedagogical principles in understanding professional, nonprofessional, impaired voice production; vocal anatomy, voice classification; control of loudness, pitch, register, quality; efficient, inefficient use of voice; instrumentation for voice analysis, synthesis. Offered fall semesters of odd years. Same as MUS:5520.

CSD:5203 Counseling in Communication Disorders 1 s.h.
Collection and integration of case history information from clients/patients, family, caregivers, teachers, relevant others, other professionals; development of appropriate intervention plans that meet client/patient needs in collaboration with client/patient and relevant others; communicating effectively and recognizing needs, values, preferred mode of communication, and cultural linguistic background of client/patient, family, caregivers, relevant others; providing counseling to clients/patients, family, and caregivers regarding communication and swallowing disorders. Prerequisites: CSD:5135.

CSD:5206 Language Disorders: Birth to Five Years 3 s.h.
Disorders resulting from phonological, semantic, pragmatic, and morphosyntactic deficits; receptive, expressive problems; special assessment and intervention procedures. Offered fall semesters of even years. Prerequisites: CSD:4145.

CSD:5213 Voice Habilitation 2-3 s.h.
Application of methods of intervention in development, training, rehabilitation of vocal behavior; motor learning, efficacy of treatment strategies, factors affecting compliance with recommended therapy. Offered fall semesters. Prerequisites: CSD:4114 or CSD:5201. Same as MUS:5555.

CSD:5219 Fundamentals of Laboratory Instrumentation 3 s.h.
Electrical circuits, emphasis on application to instrumentation used in speech and hearing; laboratory focus on instrumentation. Offered spring semesters.

CSD:5222 Speech and Hearing Anatomy 2 s.h.
Laboratory course in anatomy of speech and hearing mechanisms; instruction in dissection techniques. Offered summer sessions. Prerequisites: CSD:3112.

CSD:5223 Pediatric Feeding and Swallowing Disorders 1 s.h.
Development of anatomy and physiology of feeding and swallowing in infants and children; assessment and treatment of pediatric feeding and swallowing disorders. Offered summer sessions. Prerequisites: CSD:3112 and CSD:3116 and CSD:4115.

CSD:5224 System and Signal Theory for Speech and Hearing Science 3 s.h.
Principles of linear-systems theory applied to speech and auditory research, including system functions, filter properties, convolution, Fourier Series, Fourier transform. Offered fall semesters. Requirements: introductory calculus.

CSD:5233 Aphasia 2 s.h.

CSD:5234 Acquired Cognitive-Communication Disorders 2 s.h.
Cognitive, neuropsychological, and social aspects of communication and the management of acquired cognitive-communication disorders associated with traumatic brain injury, right hemisphere damage, and neurodegenerative diseases. Prerequisites: CSD:3116 and CSD:4146.

CSD:5236 Swallowing Disorders 2 s.h.
Physiology of normal, abnormal swallowing; assessment, treatment of swallowing disorders in adults, children. Offered fall semesters. Prerequisites: CSD:3112 and CSD:4115 and CSD:3116.

CSD:5237 Cleft Palate and Related Disorders 2 s.h.

CSD:5240 Hearing Aids I 3 s.h.
Hearing aids, diagnostic procedures; laboratory emphasis on measurement procedures. Offered spring semesters. Prerequisites: CSD:3185.

CSD:5246 Advanced Audiology 3 s.h.
Theory, procedures for assessment of hearing loss in adult and pediatric populations; experience in test administration through supervised laboratory sessions. Offered fall semesters. Prerequisites: CSD:3185.

CSD:5253 Speech Perception in Listeners with Hearing Loss 1-2 s.h.
Introduction to study of speech perception in listeners with normal hearing and those with hearing loss; overview of speech acoustics; theories of speech perception; contributions of auditory, visual, and indexical (talker-specific) information in speech signal; assessment techniques; benefits of hearing aid and/or cochlear implant use; factors influencing speech perception by children and adults with hearing loss.

CSD:5255 Educational Audiology 2 s.h.
Training in skills necessary for working with the school-age population; case management and aural rehabilitation, amplification and classroom hearing technology, identification and assessment practices, federal legislation that affects services. Offered fall semesters. Prerequisites: CSD:3185 and CSD:4244. Requirements: CSD:5240 for Au.D. students.

CSD:5256 Anatomy and Physiology of Hearing 3-4 s.h.
Anatomy of auditory system, cochlear mechanics, electrophysiology of peripheral and central auditory nervous system; laboratory emphasis on physiological techniques for study of ear. Offered spring semesters. Prerequisites: CSD:3113 and CSD:5224.

**CSD:5257 Auditory Processing Disorders** 1 s.h.
Central auditory processing disorder (C)APD as a disorder involving auditory processing and not showing as a hearing loss on routine screenings or an audiogram; theories of mechanisms and treatment.

**CSD:5260 Designing Assistive Devices** 2 s.h.
System design (hardware and software) useful in building augmentative and alternative communication devices for the profoundly impaired; opportunity to build systems for theoretical and/or applied purpose; interdisciplinary, clinical perspectives. Offered summer sessions.

**CSD:5282 Phonological Development and Disorders** 2 s.h.
Advanced topics in phonological development and disorders; current theoretical approaches to phonological analysis and typical phonological acquisition applied to assessment and intervention with children who have phonological disorders. Offered spring semesters. Prerequisites: (CSD:2110 or LING:3005) and CSD:3118 and CSD:4145 and CSD:5135.

**CSD:5283 Clinical Problems** 1-2 s.h.

**CSD:5301 Practicum: Speech-Language Pathology** arr.

**CSD:5303 Evidence Based/Emerging Practices in Communication/Social Interaction for Individuals with Autism** 1 s.h.
Evidence-based practices and emerging practices for promoting communication and social interaction skills in individuals with autism spectrum disorders; emphasis on intervention strategies specific to receptive and expressive language development, functional communication, social interaction, emotional regulation, play, structured learning environments, and opportunities.

**CSD:5304 Speech Pathology Outplacement: School** 0-4 s.h.
Supervised teaching and observation in speech-language pathology in an elementary school setting.

**CSD:5305 Speech Pathology Outplacement: Non-School** 0-4 s.h.
Supervised clinical work and observation in speech-language pathology in a non-school setting.

**CSD:5310 Scientific Writing** 3 s.h.
Principles of writing for scientific posters, journal articles, grant proposals; effective communication of concepts and data.

**CSD:5311 Clinical Practice in Audiology** arr.
Varied topics relevant to professional issues in audiology clinical practice; presentations by clinical faculty members and guest speakers. Requirements: M.A. professional emphasis or Au.D. enrollment.

**CSD:5314 Audiology Student Teaching** arr.
Supervised teaching and observation in an area of audiology in the elementary schools.

**CSD:5315 Clinical Rotations in Audiology** arr.

**CSD:5350 Preceptorship in Augmentative Communication** 1 s.h.
Approaches to development of alternate modes of communication for individuals with limited oral communication. Offered fall semesters.

**CSD:5510 Seminar: Introduction to Research in Speech and Hearing** 0-1 s.h.
Philosophy of science; basic principles of research; issues in conducting research; review of research opportunities in the department. Offered fall semesters.

**CSD:5511 Introduction to Doctoral Research** 1 s.h.
Topics related to development and execution of research; doctoral program, use of library, human and animal subject issues, philosophy of science, use of common research tools, reading and writing research papers, research grant preparation. Offered fall and spring semesters.

**CSD:6101 Cognitive Science of Language Proseminar I** 3 s.h.
Survey of five major disciplines within language sciences: formal linguistic, communication disorders, psychological, neuroscience, and computational approaches. Requirements: graduate standing in communication sciences and disorders, linguistics, psychology, or neuroscience. Same as PSY:6101, LING:6101.

**CSD:6102 Cognitive Science of Language Proseminar II** 3 s.h.
Survey of five major disciplines within language sciences: formal linguistic, communication disorders, psychological, neuroscience, and computational approaches. Requirements: graduate standing in communication sciences and disorders, linguistics, psychology, or neuroscience. Same as PSY:6102, LING:6102.

**CSD:6202 Methods of Teaching Voice** 3 s.h.
Attitude, musicianship, foreign language aptitude, physical and emotional characteristics; mental images used to modify respiratory, phonatory, articulatory behavior; vocal hygiene; performance anxiety; student-teacher relationships; administration in vocal schools, professional organizations. Offered spring semesters. Same as MUS:6520.
CSD:6204 Voice for Performers 2 s.h.
Comparison of kinesthetic techniques for singing and acting voice; relaxation, posture, breathing, tone quality, diction, interpretation. Same as MUS:6525, THTR:6525.

CSD:6221 Instrumentation for Voice Analysis 2 s.h.
Glottographic, videostroboscopic, electromyographic, and acoustic analysis for assessment of vocal and respiratory function; using these techniques in conjunction with perceptual evaluation of voice; through the Vocolary Institute in Utah. Offered summer sessions of even years. Requirements: enrollment in Summer Vocolary Institute, Salt Lake City, Utah. Same as MUS:6556.

CSD:6230 Advanced Hearing Science 2 s.h.
Basic properties of auditory perception or psychoacoustics from material covered in CSD:5256; perception of loudness, masking frequency selectivity, temporal processing, and spatial perception; basic perceptual properties, methods of measurement, and physiological basis for performance; properties of perception in normal ears, hearing impairment, and auditory protheses (e.g., cochlear implants). Prerequisites: CSD:3113 and CSD:5256.

CSD:6231 Speech Perception in Listeners with Hearing Loss 2 s.h.
Introduction to study of speech perception in listeners with normal hearing and those with hearing loss; overview of speech acoustics; theories of speech perception; contributions of auditory, visual, and indexical (talker-specific) information in speech signal; assessment techniques; benefits of hearing aid and/or cochlear implant use; factors influencing speech perception by children and adults with hearing loss. Prerequisites: CSD:6230.

CSD:6242 Hearing Aids II 3 s.h.
Evaluation, verification procedures; emphasis on advanced technologies, strategies. Offered fall semesters. Prerequisites: CSD:5240.

CSD:6245 Pediatric Audiology 3 s.h.
Theory, procedures for assessment, rehabilitation of pediatric populations; laboratory emphasis on test administration. Offered spring semesters. Prerequisites: CSD:3185.

CSD:6247 Medical Audiology 2 s.h.
Genetic, acquired, traumatic pathologies that affect auditory systems; nature, etiology, principles of assessment, treatment. Offered spring semesters of odd years. Prerequisites: CSD:3185.

CSD:6249 Cochlear Implants 1-3 s.h.
Introduction to cochlear implantation; history of cochlear implantation, introduction to cochlear technology, basics of device programming and trouble shooting, candidacy issues, outcomes in children and adults, auditory rehabilitation specific to cochlear recipients, the auditory brainstem implant, future trends in cochlear implantation. Offered spring semesters. Prerequisites: CSD:3185 and CSD:4244.

CSD:6290 Auditory Evoked Potentials 3 s.h.
Introduction to evoked potentials for assessing audiologic function. Offered spring semesters. Prerequisites: CSD:5219.

CSD:6291 Vestibular Assessment and Rehabilitation 1-3 s.h.
Introduction to otoacoustic emissions, vestibular theory, and testing techniques. Offered fall semesters.

CSD:6292 Advanced Rehabilitative Audiology 1 s.h.
Current and developing procedures for assessment, habilitation of adults and children with hearing losses. Offered spring semesters.

CSD:6316 Advanced Externship in Audiology arr.

CSD:6317 Audiology Business Practice Management 1 s.h.
Introduction to the development and management of an audiology practice; topics include short and long range business planning, general accounting, budgeting, establishing fees for service, coding and third party reimbursement, marketing, professional liability, certification and licensure; business and professional ethics. Requirements: 3.00 cumulative g.p.a. and Au.D. second-year or higher enrollment.

CSD:6318 Hearing Loss Prevention 2 s.h.
Incidence and prevalence of hearing loss; risk factors and assessment; noise exposure guidelines; hearing protection devices; education and motivation. Prerequisites: CSD:5219.

CSD:6515 Proseminar 0 s.h.
Presentation of research ideas, results by faculty, students.

CSD:6519 Seminar: Evidence-Based Practice 2 s.h.
Introduction to design and conduct of research and evidence-based clinical practice, observation and measurement, population sampling, group and single-subject research designs, treatment research, data organization and analysis, and presenting research results in graphic and written form; issues concerning research ethics and the protection of human subjects in research. Recommendations: clinical graduate standing in audiology or speech-language pathology.

CSD:6520 Seminar: M.A. Language 2 s.h.
Research literature related to language. Offered spring semesters of odd years.
**CSD:6522 Clinical Speech Physiology**  2 s.h.
Current approaches to the study of speech physiology and application in clinical practice; focus on providing hands-on experiences with common instrumental approaches to studying speech physiology, developing an appreciation of the factors and limitations that must be considered in applying and interpreting the findings of these approaches clinically, and developing abilities to critically evaluate the literature in this area.

**CSD:6524 International Service in Communication Disorders**  0-2 s.h.
International service in communication and related disorders; foundational knowledge and project-based learning; cultural diversity, international speech-language pathology and audiology practices, disability and poverty, advocacy for individuals with communication and related disorders, staff-caregiver-parent training; required course for students who applied and are accepted for international service projects through the Department of Communication Sciences and Disorders.

**CSD:6538 Seminar: Hearing Science**  2 s.h.
Selected topics. Offered fall semesters of even years.

**CSD:7238 Capstone Requirement**  1 s.h.
Individual work with a faculty member on audiology topics; final Au.D. project. Offered spring semesters.

**CSD:7528 Seminar: Ph.D. Language**  2 s.h.
Theoretical issues related to language. Offered spring semesters.

**CSD:7590 Research**  arr.
Communication Studies

Chair
  • Walid A. Afifi

Undergraduate major: communication studies (B.A.)
Undergraduate minor: communication studies
Graduate degrees: M.A. in communication studies; Ph.D. in communication studies
Faculty: http://clas.uiowa.edu/commstudies/people
Web site: http://clas.uiowa.edu/commstudies/

The Department of Communication Studies focuses on the study of human communication as a social practice. Scholarship and teaching in the department center on the role that human communication processes play in the construction, maintenance, reinforcement, and reformation of various aspects of social, professional, and institutional life.

The department provides a liberal-arts-based undergraduate education that prepares students to meet the complex communication challenges of the 21st century. It provides top-ranked doctoral education and is a national and international leader in research and knowledge dissemination.

The department has three areas of specialization.

The rhetoric and discourse specialization focuses on how citizens use public argumentation and other rhetorical processes to bring about cultural, social, and political changes. The media studies specialization focuses on modern media in their cultural, economic, historical, political, and social contexts to understand how society and social relations shape and are shaped by media practices. The interpersonal communication and relationships specialization focuses on how the communicative practices of relating in everyday life construct, shape, sustain, and change who people are as individuals, as well as the quality of their lives.

The Department of Communication Studies encourages exploration of the practical, political, social, and aesthetic dimensions of symbolic exchange and awareness of the relationships among these dimensions. The department has produced many influential scholars and artists and has been a hub for the intersection of programs and projects of the University and other institutions.

Undergraduate Programs of Study

• Major in communication studies (Bachelor of Arts)
• Minor in communication studies

First-year students interested in completing a major in communication studies are advised at the Academic Advising Center. Students who have earned 24 s.h. or more and have declared the communication studies major are advised in the department by the communication studies academic advisor.

Bachelor of Arts

The Bachelor of Arts with a major in communication studies requires a minimum of 120 s.h., including 40 s.h. of work for the major. Students must maintain a g.p.a. of at least 2.00 in all courses for the major and in all UI courses for the major. They also must complete the College of Liberal Arts and Sciences General Education Program (p. 313). A cumulative g.p.a. of at least 2.30 is required for enrollment in most communication studies courses.

The curriculum is designed to encourage learning that progresses from foundation courses that teach the basics of communication to intermediate and advanced (capstone) courses. Students may choose to build creative combinations of course work that suit their individual learning and career goals.

Students may count up to 56 s.h. of Department of Communication Studies course work (prefix COMM) toward credit required for the Bachelor of Arts degree.

Guided Independent Study and transfer courses may be applied toward the requirements of the major, with the department's approval. A maximum of 15 s.h. of transfer credit may be counted toward the major.

Students work with the communication studies academic advisor to develop study plans that meet the requirements of the major. Students may check their progress toward the degree on ISIS.

Students are encouraged to discuss their career goals and interests with faculty members.

The 40 s.h. required for the communications studies major consists of foundation courses (16 s.h.), intermediate courses (12 s.h.), a capstone course (3 s.h.), and an additional 9 s.h., which may be earned in courses listed under "Intermediate Courses," "Capstone Experience," and/or "Additional Courses," below. Students may not use a course to satisfy more than one requirement of the major.

FOUNDATIONS OF COMMUNICATION

Foundation courses cover introductory concepts in the field of communication. Students must complete five foundation courses (16 s.h.) and should take them early in their studies.

The following foundation courses are appropriate for first-year students. They do not require a minimum grade-point average for enrollment and do not have prerequisites, except COMM:1117, which requires fulfillment of the General Education Program's Rhetoric requirement for enrollment. Students complete the first three foundation courses as follows.

One of these:

COMM:1112 Interpersonal Communication 3 s.h.
COMM:1170 Communication Theory in Everyday Life 3 s.h.

One of these:

COMM:1117 Theory and Practice of Argument 4 s.h.
COMM:1130 The Art of Persuading Others 3 s.h.

And one of these:

COMM:1168 Media, Music, and Culture 3 s.h.
COMM:1174 Media and Society 3 s.h.

The fourth and fifth foundation courses are appropriate for second-year students. Enrollment in these courses requires completion of 30 s.h. and a g.p.a. of at least 2.30 for University of Iowa and transfer course work.

Both of these:
COMM:1301 Core Concepts in Communication Studies 3 s.h.
COMM:1305 Studying Communication: Methods and Critiques 4 s.h.

**INTERMEDIATE COURSES**

Intermediate courses (those numbered 2000-2799) cover detailed aspects of the study of communication. Students must complete four intermediate courses (12 s.h.), usually during their third and fourth years of study. They must have completed four of five foundation courses listed above and must have a cumulative g.p.a. of at least 2.30 in order to enroll in intermediate courses.

Intermediate course—at least four of these (12 s.h.):

- COMM:2000 Feminist Critical Practice 3 s.h.
- COMM:2011 Group Communication 3 s.h.
- COMM:2040 Communication and Conflict 3 s.h.
- COMM:2041 Gender Roles and Communication 3 s.h.
- COMM:2042 Intercultural Communication 3 s.h.
- COMM:2043 Rhetoric, Science, and Technology 3 s.h.
- COMM:2044 Political Communication 3 s.h.
- COMM:2048 Transforming Media: From Telegraph to Internet 3 s.h.
- COMM:2051 Politics of Popular Culture 3 s.h.
- COMM:2053 Secrets, Confidences, and Lies: Privacy Management in Interpersonal Relationships 3 s.h.
- COMM:2054 Movements, Protest, Resistance 3 s.h.
- COMM:2057 Introduction to Computer-Mediated Communication 3 s.h.
- COMM:2058 Rhetoric and Past Public Controversy: The Sixties 3 s.h.
- COMM:2061 Persuasion in Society 3 s.h.
- COMM:2064 Media, Advertising, and Society 3 s.h.
- COMM:2065 Television Criticism 3 s.h.
- COMM:2069 Black TV Drama: The Wire 3 s.h.
- COMM:2071 Communication and Critical/ Cultural Studies 3 s.h.
- COMM:2075 Gender, Sexuality, and Media 3 s.h.
- COMM:2076 Race, Ethnicity, and Media 3 s.h.
- COMM:2077 Writing and Producing Television 3 s.h.
- COMM:2079 Digital Media and Religion 3 s.h.
- COMM:2080 Public Life in the U.S.: Religion and Media 3 s.h.
- COMM:2085 Media Industries and Organizations 3 s.h.
- COMM:2086 Global Media Studies 3 s.h.
- COMM:2087 Copyright Controversies 3 s.h.
- COMM:2088 Media and Democracy 3 s.h.
- COMM:2089 Nonverbal Communication 3 s.h.
- COMM:2090 Topics in Communication Studies 3 s.h.
- COMM:2091 Organizational Communication 3 s.h.

**CAPSTONE EXPERIENCE**

Capstone courses (those numbered 3000-4999) provide a faculty-led experience in which students participate directly in producing knowledge, research, or creative work about communication. The capstone experience gives students a chance to synthesize what they have learned about the study of communication. Students must complete one capstone course (3 s.h.).

In order to enroll in a capstone course, students must have completed at least two of the required intermediate courses and must have a cumulative g.p.a. of at least 2.30. Most students take the capstone course during their senior year.

Capstone course—one of these (3 s.h.):

- COMM:3100 LGBTQ/Queer Studies 3 s.h.
- COMM:3600 Issues in Rhetoric and Culture: Crafting Electronic Identities 3 s.h.
- COMM:3834 Arab Spring in Context: Media, Religion, and Geopolitics 3 s.h.
- COMM:4100 Developing Leadership 3 s.h.
- COMM:4131 Globalization and Culture 3 s.h.
- COMM:4135 Media, Culture, and Relationships 3 s.h.
- COMM:4140 Communication and Relationships 3 s.h.
- COMM:4142 Advanced Intercultural Communication 3 s.h.
- COMM:4143 Classical Rhetoric and Greek Culture 3 s.h.
- COMM:4145 Argument and Law 3 s.h.
- COMM:4147 Family Communication 3 s.h.
- COMM:4150 Cultural History of Advertising 3 s.h.
- COMM:4151 Cultural History of Television 3 s.h.
- COMM:4152 Latin American Media 3 s.h.
- COMM:4153 Magic Machines: Technology and Social Change 3 s.h.
- COMM:4156 Feminist Visual Rhetoric 3 s.h.
- COMM:4157 Advanced Topics in Communication Studies 3 s.h.
- COMM:4160 The Talk of Everyday Life 3 s.h.
- COMM:4163 The Dark Side of Interpersonal Communication 3 s.h.
- COMM:4164 Life Happens. Don't Worry About It: The Communication of Social Support 3 s.h.
- COMM:4165 Criticism and Public Culture 3 s.h.
- COMM:4166 Life-Span Communication 3 s.h.
- COMM:4167 Communication, Cognition, and Emotion 3 s.h.
- COMM:4168 Rhetoric of the Body 3 s.h.
- COMM:4169 Feminist Rhetorics 3 s.h.
- COMM:4170 Theories of Persuasion 3 s.h.
- COMM:4172 Television and African American Culture 3 s.h.
- COMM:4173 Social Media, Culture, and Politics 3 s.h.
- COMM:4174 Communication, Technology, and National Security 3 s.h.
- COMM:4176 Advanced Relational Theory 3 s.h.
- COMM:4181 Legal Communication and Culture 3 s.h.
- COMM:4183 Networking America: The Cultural History of Broadcasting 3 s.h.

**ADDITIONAL COURSES**

Students earn an additional 9 s.h. to complete the 40 s.h. in communication studies courses required for the major. They may choose from the courses listed below and/or from the lists of intermediate and capstone courses above. However, students may not use one course to fulfill more than one requirement for the major, so in selecting the
additional 9 s.h. of course work, they may not choose a course they already used to fulfill the intermediate or capstone course requirement.

The following courses are open to all students; they do not have prerequisites or require a minimum grade-point average requirement for enrollment.

**Internships**

Internships enable students to supplement their course work with professional experiences relevant to careers in communication-related fields. The department's internship program is open only to communication studies majors.

To earn academic credit for internships, students must obtain approval for their internship experience and site before they register for COMM:2828 Communication Studies Internship. Internship academic credit is awarded for an analytical paper and daily log submitted at the end of the internship and for the number of hours worked. Internships can be completed during fall semester, spring semester, or summer session.

Visit the department's web site for information on communication studies internships.

**Four-Year Graduation Plan**

The following checkpoints list the minimum requirements students must complete by certain semesters in order to stay on the University’s Four-Year Graduation Plan. Students should consult the department for details.

**Before the fifth semester begins:** at least two courses in the major

**Before the seventh semester begins:** at least six courses in the major and at least 90 s.h. earned toward the degree

**Before the eighth semester begins:** at least eight courses in the major

**During the eighth semester:** enrollment in all remaining course work in the major, all remaining General Education courses, and a sufficient number of semester hours to graduate

**Iowa Degree in Three**

University of Iowa majors who are strongly motivated can graduate with a degree in three years under the Iowa Degree in Three. The program is available to students who can complete more semester hours each term than they would on the Four-Year Graduation Plan.

Students sign an agreement during their first semester of enrollment; meet with an advisor at least once a semester to review their plans and progress; take courses during summer sessions, if necessary; meet specific course checkpoints; and maintain the grade-point average required for the major.

Students are allowed to bring Advanced Placement (AP), College Level Examination Program (CLEP), or transfer credit upon admission to reduce the number of semester hours required for their degree. They should consult their advisor about the program.

**Honors in the Major**

Students majoring in communication studies have the opportunity to graduate with honors in the major. Students begin work toward graduation with honors by choosing a faculty member to supervise their honors project and act as their honors advisor. They must maintain a cumulative University of Iowa g.p.a. of at least 3.33 and must complete the following courses.

**Before the eighth semester begins:** enrollment in all remaining course work in the major

**During the eighth semester:** meet with an advisor at least once a semester to review their plans and progress; take courses during summer sessions, if necessary; meet specific course checkpoints; and maintain the grade-point average required for the major.

**Minor**

The minor in communication studies requires a minimum of 18 s.h. in communication studies courses, including 12 s.h. in courses taken at the University of Iowa. Students must maintain a g.p.a. of at least 2.00 in all courses for the minor and in all UI courses for the minor. In addition, enrollment in some courses for the minor requires a cumulative g.p.a. of at least 2.30. Course work in the minor may not be taken pass/nonpass. The minor must include the five courses listed under "Foundations of Communication" above and one course listed under "Intermediate Courses" above.
Forensics/Debate

Students in the forensics/debate program have the opportunity to participate in on-campus debates, in developmental programs designed to improve speech activities in the state, and as members of competitive intercollegiate debate teams. Forensics scholarships are available. Students interested in debate should enroll in COMM:2813 Practicum in Debate or COMM:1814 Elements of Debate.

Graduate Programs of Study

- Master of Arts in communication studies
- Doctor of Philosophy in communication studies

The Doctor of Philosophy program in communication studies includes specializations in interpersonal communication and relationships, media studies, and rhetoric and discourse.

Graduate education in communication studies focuses on the Ph.D., but doctoral students may choose to earn a Master of Arts on their way toward the Ph.D. A terminal master’s degree may be an option for some students already admitted to the doctoral program.

Master of Arts

The Master of Arts program in communication studies requires a minimum of 30 s.h. of graduate credit. It may be granted to students working toward the Ph.D.; it also may be granted as a terminal degree for doctoral students who decide not to complete the Ph.D. All master’s students take COMM:5200 Introduction to Research and Teaching (1 s.h.) and at least two courses numbered 5000 or above. They also prepare a graduate seminar paper that involves significant original research.

Doctor of Philosophy

The Doctor of Philosophy program in communication studies requires a minimum of 82 s.h. of graduate credit, including dissertation credit. All students take COMM:5200 Introduction to Research and Teaching and earn at least 10 s.h. of dissertation credit in COMM:6399 Ph.D. Dissertation.

Ph.D. students must take a 3 s.h. course in each of the program’s three areas of specialization; successfully complete a qualifying examination during their second or third semester and a comprehensive (predissertation) examination in their major research area during their fifth or sixth semester; and write a substantial scholarly dissertation. Students must maintain a cumulative g.p.a. of at least 3.00 throughout the graduate program.

Admission usually is for fall semester entry. Applicants whose materials are received at the department by December 15 receive preference for admission and financial support. Admission decisions are based on undergraduate achievement, letters of reference, Graduate Record Examination (GRE) General Test scores, the statement of purpose, and samples of scholarly work.

Interpersonal Communication and Relationships

The communication and relationships program is centered on theory complemented by strength in quantitative and qualitative research methods. It focuses on scholarly issues that arise from face-to-face, everyday communication practices. It emphasizes personal relationship and family processes, identity construction, persuasion, and culture.

The goal of the program is to produce scholars who possess sophisticated knowledge of theory and methodology, who are careful consumers of theories and methods, and who can develop their own approaches to communication phenomena. The program emphasizes systematic analysis of the forms, functions, and meanings of messages within various contexts. Its broad social-scientific orientation springs from the belief that many methodological approaches are appropriate to studying and building theoretical explanations of communication.

Graduate students typically enter the program to earn a Ph.D. Advisors and committee members work closely with individual students to select courses from communication studies and other University departments and plan teaching and research experiences that will prepare students well for the employment they seek after graduation.

Media Studies

The graduate program in media studies focuses on the interplay of institutions, texts, and audiences in mediated communication systems. Its central aim is to examine modern media—radio, television, advertising, music, new media, and a wide range of other popular cultural expressions—within their historical, social, political, economic, and cultural contexts. It also uses the mass media as sites for asking basic questions about culture, society, politics, and modernity.

Like the department’s other graduate programs, media studies has a strong interdisciplinary flavor. Students draw not only on allied areas in the Department of Communication Studies but on fields across the University.

Rhetoric and Public Advocacy

The program in rhetoric and public advocacy is built on foundation courses in classical and 20th-century rhetorical theory and in an overview of 20th-century rhetorical criticism. Courses from a rhetorical perspective include rhetorical theory, rhetorical criticism, visual rhetoric and politics, public address and public culture, studies in argumentation and freedom of speech, work in science and technology as well as academic inquiry, and historical methods. Cognate work of interest to rhetoricians also can be found in interpersonal communication and relationship studies as well as media studies.

The Ph.D. in rhetoric and public advocacy is designed to give students a mature grasp of the specialties and perspectives embraced by the field and to develop research competence essential to a life of productive scholarship.

Work in related disciplines—political science, history, sociology, English, cinematic arts, anthropology, American studies, and journalism—complements rhetorical studies course offerings. Faculty from the Departments of American Studies, Political Science, and Rhetoric cross-reference their courses on rhetorical topics in this program.

Admission

Applicants to graduate programs in communication studies must meet the admission requirements of the Graduate
College; see the Manual of Rules and Regulations of the Graduate College.

Facilities
The Samuel L. Becker Communication Studies Building is designed to meet the department's research and technological needs.

Courses
Courses numbered below 5000 are intended primarily for undergraduates; those numbered 5000 and above are for graduate students. Graduate students may take courses numbered 3000-4999 for credit, with their committee's approval.

Not all courses are offered each semester.

Lower-Level Undergraduate
To register for most undergraduate communication studies courses, students must have earned 30 s.h. and have a cumulative g.p.a. of at least 2.30. However, registration for the following General Education courses is open to all undergraduates, regardless of their grade-point average.

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<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>COMM:1117</td>
<td>Theory and Practice of Argument</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>COMM:1170</td>
<td>Communication Theory in Everyday Life</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>COMM:1174</td>
<td>Media and Society</td>
<td>3 s.h.</td>
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Registration in COMM:1000 First-Year Seminar is open to first- and second-semester students regardless of grade-point average.

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<tbody>
<tr>
<td>COMM:1000</td>
<td>First-Year Seminar</td>
<td>1 s.h.</td>
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Small discussion class taught by a faculty member; topics chosen by instructor; may include outside activities (e.g., films, lectures, performances, readings, visits to research facilities). Requirements: first- or second-semester standing.

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<tr>
<td>COMM:1112</td>
<td>Interpersonal Communication</td>
<td>3 s.h.</td>
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Introduction to face-to-face communication in social and personal relationships; maximizing communicative effectiveness in relationships with knowledge about how communication functions; analysis of one's own and others' communication practices and experiences.

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Public arguments as practiced in law, politics, science, and other public arenas; improvement of skills in researching, constructing, organizing, and presenting arguments on disputed subjects; analyzing and refuting arguments of others; developing a better understanding of how scholars apply tools of formal and informal logic in a variety of disciplines to improve quality of academic argument. Requirements: completion of General Education Program rhetoric component. GE: Quantitative or Formal Reasoning.

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<tr>
<td>COMM:1130</td>
<td>The Art of Persuading Others</td>
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Basic theoretical concepts of effective public communication; employ knowledge of concepts in analyzing texts; definition and influence of rhetorical situation, different elements of persuasion (message logic, appeal to feelings, character of speaker), ability of speakers to invent arguments; issues of judgment, public discourse, identity, and agency.

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<tr>
<td>COMM:1168</td>
<td>Media, Music, and Culture</td>
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What makes popular music important for people; music's power to change culture; production, distribution, reception of popular music in cultural and historical contexts.

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<td>COMM:1170</td>
<td>Communication Theory in Everyday Life</td>
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General overview of everyday life communication, theories and research techniques used to understand it; sheer depth and complexity of processes in communication that occur in everyday lives and which appear to be trivial; how to observe conversations and identify what is really happening in them; ways in which scholars explain everyday communication and how it works; applications of theoretical thinking to explain processes of everyday communication. GE: Social Sciences.

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<td>COMM:1174</td>
<td>Media and Society</td>
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Processes and effects of mass communication; how mass media operate in the United States; how mass communication scholars develop knowledge. GE: Social Sciences; Values, Society, and Diversity.

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<tr>
<td>COMM:1301</td>
<td>Core Concepts in Communication Studies</td>
<td>3 s.h.</td>
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Introduction to communication topics; face-to-face interaction, public speaking, globally-distributed film, music, and television; ways of thinking, vocabulary, and overview of concepts used in other communication studies courses. Requirements: g.p.a. of at least 2.30 and 30 s.h. of credit.

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<tr>
<td>COMM:1305</td>
<td>Studying Communication: Methods and Critiques</td>
<td>4 s.h.</td>
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Social scientific methods used to generate knowledge about communication processes; basic tools necessary to conduct and evaluate communication research; epistemological perspectives, research procedures, and data analysis; readings and hands-on activities. Requirements: g.p.a. of at least 2.30 and 30 s.h. of credit.

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<tr>
<td>COMM:1809</td>
<td>Social Marketing Campaigns</td>
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Introduction to theory, development, and practice of social marketing campaigns; public service announcements, political action to change smoking laws, community-led initiatives to increase availability of local foods; communication-centric format including research in public health, nursing, marketing, and other fields; group work to identify issues of local concern and develop a theoretically justified and practically realistic social marketing campaign with potential to positively impact communities.
COMM:1814 Elements of Debate 3 s.h.
Debates that occur everyday in a wide variety of situations and settings; how to recognize when a debate is occurring and different procedures by which people conduct debates; emphasis on development of personal advocacy skills and how one goes about teaching those same skills to others by example and practice; examination of role of debate in achieving collective economic and political purposes in contemporary societies.

COMM:1816 Business and Professional Communication 3 s.h.
Introduction to business and professional communication at individual and corporate levels; individual-level topics cover organizational communication, business vocabulary, speaking and writing, professionalism and interviewing; corporate-level topics focus on marketing, advertising, public relations, corporate communications, crisis communication management, business and communication plans, proposals; guest speakers from for-profit and not-for-profit organizations.

COMM:1818 Leadership and Organizational Procedures 2 s.h.
Use of organizational procedures to facilitate discussion, from by-laws to full parliamentary procedure; how knowledge of effective organizational procedures enhances ability to participate in meetings and organizational business to run more smoothly; benefit to instructors of speech communication with inclusion of parliamentary procedure/debate units. Offered only through Guided Independent Study.

COMM:1819 Organizational Leadership 2-3 s.h.
Introduction to nature of leadership, styles of leadership that are most effective, and ways in which obstacles may be overcome in groups or organizations; different approaches to qualities of leadership, role of visions and motivation, interpersonal and decision-making skills, meeting preparation and evaluation, and related communication skills. Offered only through Guided Independent Study.

COMM:1830 Solving Public Problems: Dialogue and Deliberation for Democracy 3 s.h.
Communication at the heart of public problems and solutions; critical 21st-century skills (writing for a general audience, facilitating dialogue); valuable community service experiences as an introduction to the interdisciplinary field of dialogue and deliberation; focus on a complex local issue, such as affordable housing, flood planning, or excessive drinking; partnering with local organizations to research a local problem, plan community-based solutions, and study the art of facilitating public discussions; topics include issue analysis, deliberative inquiry, convening meetings, and community organizing.

COMM:1898 Introduction to Latina/o Communication and Culture 3 s.h.
Introduction to fundamentals of communication by and about Latina/o in the U.S.; Latina/o as one of the fastest growing demographics; how Latina/o history, politics, and culture remain little understood despite a longstanding and growing presence in Iowa and across the nation; historical orientation; Latina/o social movement and protest (e.g., Chicana/o movements and the Young Lords Organization), institutional discourses (e.g., congressional, presidential, and legal discourses), and Latina/o in popular culture (film, TV, music, sports).

COMM:2000 Feminist Critical Practice 3 s.h.
Feminist approaches to communicative practices. Prerequisites: (COMM:1112 or COMM:1170) and (COMM:1117 or COMM:1130) and (COMM:1168 or COMM:1174) and COMM:1301 and COMM:1305. Requirements: g.p.a. of at least 2.30 and completion of four or five Foundations of Communication courses.

COMM:2011 Group Communication 3 s.h.
Study of relevant theory, research, and application to increase understanding of communication in small groups; critical thinking and communication skills; individual roles in groups, creativity, leadership, decision making, problem solving, and conflict resolution. Prerequisites: (COMM:1112 or COMM:1170) and (COMM:1117 or COMM:1130) and (COMM:1168 or COMM:1174) and COMM:1301 and COMM:1305. Requirements: g.p.a. of at least 2.30 and completion of four of five Foundations of Communication courses.

COMM:2040 Communication and Conflict 3 s.h.
Conflict and its management as critical issues that pervade people's personal and professional lives; complexities of conflict; forces that make conflict challenging; skills for thinking about and managing conflict more effectively; central features that define conflict; behaviors, attributions, and emotions that are manifest during conflict; formal models of conflict management and their corresponding recommendations for handling conflict. Prerequisites: (COMM:1112 or COMM:1170) and (COMM:1117 or COMM:1130) and (COMM:1168 or COMM:1174) and COMM:1301 and COMM:1305. Requirements: g.p.a. of at least 2.30 and completion of four of five Foundations of Communication courses.

COMM:2041 Gender Roles and Communication 3 s.h.
Interactive relationships between gender and communication in contemporary U.S. society; multiple ways families, schools, and media perpetuate, negotiate, and contest gender roles; how we are part of those processes by looking at how we enact socially-created gender differences in public and private settings. Prerequisites: (COMM:1112 or COMM:1170) and (COMM:1117 or COMM:1130) and (COMM:1168 or COMM:1174) and COMM:1301 and COMM:1305. Requirements: g.p.a. of at least 2.30 and completion of four of five Foundations of Communication courses. Same as GWSS:2041.
COMM:2042 Intercultural Communication 3 s.h.
Culture defined as a system of taken-for-granted assumptions about the world that influence how people think and act; cultural differences that produce challenges and opportunities for understanding and communication; those differences from several theoretical perspectives; opportunities to examine culture and cultural differences in practical, experience-driven ways. Prerequisites: (COMM:1112 or COMM:1170) and (COMM:1117 or COMM:1130) and (COMM:1168 or COMM:1174) and COMM:1301 and COMM:1305. Requirements: g.p.a. of at least 2.30 and completion of four of five Foundations of Communication courses. Same as SSW:2042, IS:2042.

COMM:2043 Rhetoric, Science, and Technology 3 s.h.
How science and technology shape culture; media representations of technology; role of rhetoric in science and technology, especially in the physical and biological sciences; cultural implications of the information revolution. Prerequisites: (COMM:1112 or COMM:1170) and (COMM:1117 or COMM:1130) and (COMM:1168 or COMM:1174) and COMM:1301 and COMM:1305. Requirements: g.p.a. of at least 2.30 and completion of four of five Foundations of Communication courses.

COMM:2044 Political Communication 3 s.h.
Relationship between media, cultural politics, and the American political system; focus on advertising, campaigns, and new media outlets; ways politicians, the press, and intermediaries create and disseminate messages into mainstream culture; how people generate their own discourses of political identity and dissent, creating a robust democratic practice that is both empowering and central to the contemporary political landscape. Prerequisites: (COMM:1112 or COMM:1170) and (COMM:1117 or COMM:1130) and (COMM:1168 or COMM:1174) and COMM:1301 and COMM:1305. Requirements: g.p.a. of at least 2.30 and completion of four of five Foundations of Communication courses.

COMM:2048 Transforming Media: From Telegraph to Internet 3 s.h.
Communication media as global phenomena in which U.S. corporate and government interests play a major part; from electronic telegraph to broadcasting and cable, an investigation of historical contexts in which these media emerged; tracing ways in which they have been shaped by political, economic, and social relations of power. Prerequisites: (COMM:1112 or COMM:1170) and (COMM:1117 or COMM:1130) and (COMM:1168 or COMM:1174) and COMM:1301 and COMM:1305. Requirements: g.p.a. of at least 2.30 and completion of four of five Foundations of Communication courses.

COMM:2051 Politics of Popular Culture 3 s.h.
How culture is political and how politics is cultural; overview of theories of culture and critical-cultural approaches to study of popular culture, past and present; specific topics of analysis vary, may include television, celebrity culture, music, film, games, and sports. Prerequisites: (COMM:1112 or COMM:1170) and (COMM:1117 or COMM:1130) and (COMM:1168 or COMM:1174) and COMM:1301 and COMM:1305. Requirements: g.p.a. of at least 2.30 and completion of four of five Foundations of Communication courses.

COMM:2053 Secrets, Confidences, and Lies: Privacy Management in Interpersonal Relationships 3 s.h.
How individuals manage private information with regard to their interpersonal relationships; multiple theories of privacy management; how aspects of information, individual, and target of disclosure all contribute to decisions to reveal or conceal private information to friends and family. Prerequisites: (COMM:1112 or COMM:1170) and (COMM:1117 or COMM:1130) and (COMM:1168 or COMM:1174) and COMM:1301 and COMM:1305. Requirements: g.p.a. of at least 2.30 and completion of four of five Foundations of Communication courses.

COMM:2054 Movements, Protest, Resistance 3 s.h.
Historical and contemporary study of social movements from a symbolic perspective (e.g., speeches, protests, propaganda, media events); social movements as interpersonal and group communication; relationships between media and social change: efficacy of individual and larger-scale forms of resistance. Prerequisites: (COMM:1112 or COMM:1170) and (COMM:1117 or COMM:1130) and (COMM:1168 or COMM:1174) and COMM:1301 and COMM:1305. Requirements: g.p.a. of at least 2.30 and completion of four of five Foundations of Communication courses.

COMM:2057 Introduction to Computer-Mediated Communication 3 s.h.
Theoretical and practical introduction to concepts and research in computer-mediated communication; emphasis on study of social effects of communication and information technology; factors that distinguish mediated from face-to-face interaction, theories of mediated communication, self-presentation online; Internet-based relationships, online supportive communication, online communities; how the Internet influences communication and how to use computer-mediated communication for self-presentation. Prerequisites: (COMM:1112 or COMM:1170) and (COMM:1117 or COMM:1130) and (COMM:1168 or COMM:1174) and COMM:1301 and COMM:1305. Requirements: g.p.a. of at least 2.30 and completion of four of five Foundations of Communication courses.

COMM:2058 Rhetoric and Past Public Controversy: The Sixties 3 s.h.
Role of rhetoric in public controversy in particular historical time periods; focus on various perspectives, diverse voices, and multiple arguments informing particular movements/issues. Requirements: for COMM:2079 — communication studies major, g.p.a. of at least 2.30, and completion of four Foundation of Communication courses chosen from COMM:1112 or COMM:1170, COMM:1117 or COMM:1130, COMM:1168 or COMM:1174, COMM:1301, and COMM:1305. Same as RHET:2410.
COMM:2061 Persuasion in Society 3 s.h.
Introduction to concepts, theories, and methods designed to build critical understanding of mass persuasion processes; persuasion theory and research; theories that account for processes of social acculturation, maintenance, and change; specific mass persuasion processes (i.e., advertising, corporate advocacy or public relations, film and television programming, sociopolitical rituals, and social protest and change). Prerequisites: (COMM:1112 or COMM:1170) and (COMM:1117 or COMM:1130) and (COMM:1168 or COMM:1174) and COMM:1301 and COMM:1305. Requirements: g.p.a. of at least 2.30 and completion of four of five Foundations of Communication courses.

COMM:2064 Media, Advertising, and Society 3 s.h.
Introduction to the critical study of advertising in the United States; advertising contextualized as an industry and as a key part of media and culture; advertising as an institution and as a series of symbols, ideas, and fantasies; how advertising works, role and function of advertising in culture and society. Prerequisites: (COMM:1112 or COMM:1170) and (COMM:1117 or COMM:1130) and (COMM:1168 or COMM:1174) and COMM:1301 and COMM:1305. Requirements: g.p.a. of at least 2.30 and completion of four of five Foundations of Communication courses.

COMM:2065 Television Criticism 3 s.h.
Introduction to scholarly study of television as a social institution; nature of television form and content; role of industry in creation, selection, and presentation of television programs; production conventions and textual conventions in defining the medium; application of genre and narrative theory, semiotics, political economy of media industries, and audience reception study. Prerequisites: (COMM:1112 or COMM:1170) and (COMM:1117 or COMM:1130) and (COMM:1168 or COMM:1174) and COMM:1301 and COMM:1305. Requirements: g.p.a. of at least 2.30 and completion of four of five Foundations of Communication courses.

COMM:2069 Black TV Drama: The Wire 3 s.h.
Social and political impact of television dramas featuring people of African descent in the West; HBO's The Wire series—a social commentary, commercial, and aesthetic force—has pioneered new ways of thinking about the relationship between media and society at large while revolutionizing ways in which black urban life is portrayed in today's world; focus on complex intersections between urban poverty, education, and political system, crime, mediation in Western society. Same as AFAM:2076.

COMM:2071 Communication and Critical/Cultural Studies 3 s.h.
Engagement of cutting-edge rhetorical and social theories; ways in which rhetorical and social theories play out in daily life, especially in decision-making activities; weekly readings, class discussions. Prerequisites: (COMM:1112 or COMM:1170) and (COMM:1117 or COMM:1130) and (COMM:1168 or COMM:1174) and COMM:1301 and COMM:1305. Requirements: g.p.a. of at least 2.30 and completion of four of five Foundations of Communication courses.

COMM:2075 Gender, Sexuality, and Media 3 s.h.
Mediated representations of gender and sexuality (television, film, and internet) to understand how these complex and complicated codes influence meaning of sex, sexuality, and gender; contemporary and historical examples used to engage texts that illuminate cultural conceptions of femininity, masculinity, heterosexuality, and homosexuality; cases that confuse and trouble the stability of these categories. Prerequisites: (COMM:1112 or COMM:1170) and (COMM:1117 or COMM:1130) and (COMM:1168 or COMM:1174) and COMM:1301 and COMM:1305. Requirements: g.p.a. of at least 2.30 and completion of four of five Foundations of Communication courses. Same as GWSS:2075.

COMM:2076 Race, Ethnicity, and Media 3 s.h.
Introduction to debates about media portrayals of race and ethnicity; focus primarily on entertainment media; use of general analytic perspectives (stereotype analysis, aesthetic analysis, history) applied to real-world examples; address one or more racial/ethnic groups in the United States. Prerequisites: (COMM:1112 or COMM:1170) and (COMM:1117 or COMM:1130) and (COMM:1168 or COMM:1174) and COMM:1301 and COMM:1305. Requirements: g.p.a. of at least 2.30 and completion of four of five Foundations of Communication courses. Same as AFAM:2076.

COMM:2077 Writing and Producing Television 3 s.h.
Introduction to basics of scripting and producing a conventional, three-camera television series; hands-on experience with production equipment and working television scripts; students create one or more episodes of an original television series. Prerequisites: (COMM:1112 or COMM:1170) and (COMM:1117 or COMM:1130) and (COMM:1168 or COMM:1174) and COMM:1301 and COMM:1305. Requirements: g.p.a. of at least 2.30 and completion of four of five Foundations of Communication courses.

COMM:2079 Digital Media and Religion 3 s.h.
Influences of digital media on religion and spirituality today. Requirements: for COMM:2079 — communication studies major, g.p.a. of at least 2.30, and completion of four Foundation of Communication courses chosen from COMM:1301, COMM:1305, COMM:1112 or COMM:1170, COMM:1117 or COMM:1130, and COMM:1168 or COMM:1174. Same as RELS:2930.

COMM:2080 Public Life in the U.S.: Religion and Media 3 s.h.
Examination of how the U.S. came into being through specific communication practices, how religion has helped and hindered that process; religious roots of the idea of the U.S., intertwined histories of print media and religion; role of religion and secularism in public discourse; U.S. pride as a nation in which diversity thrives in public discourse; communicative acts that created and sustained this country and also marked sites of discord, conflict, and confusion from the very beginnings of the U.S. to today; how religion has been a source of national identity and national division. Prerequisites: (COMM:1112 or COMM:1170) and (COMM:1117 or COMM:1130) and (COMM:1168 or COMM:1174) and COMM:1301 and COMM:1305. Requirements: g.p.a. of at least 2.30, and completion of four of five Foundations of Communication courses. Same as RELS:2080.

**COMM:2085 Media Industries and Organizations**

Trends in media industries as reflected in changes of ownership, different work conditions, media convergence, and globalization generally; focus on local, network, and cable television; examination of industry structures, business practices, economic fundamentals, and theoretical explanations of media industries in society. Prerequisites: (COMM:1112 or COMM:1170) and (COMM:1117 or COMM:1130) and (COMM:1168 or COMM:1174) and COMM:1301 and COMM:1305. Requirements: g.p.a. of at least 2.30 and completion of four of five Foundations of Communication courses.

**COMM:2086 Global Media Studies**

Key developments in contemporary international communication; impact of deregulation and privatization on ownership and control of global communication infrastructure; spread of American television abroad in terms of production, texts, and reception; cultural concerns surrounding the phenomenon. Prerequisites: (COMM:1112 or COMM:1170) and (COMM:1117 or COMM:1130) and (COMM:1168 or COMM:1174) and COMM:1301 and COMM:1305. Requirements: g.p.a. of at least 2.30 and completion of four of five Foundations of Communication courses.

**COMM:2087 Copyright Controversies**

How digital technologies have dramatically changed media and popular culture landscapes; advent of relatively cheap editing programs that allow anyone to collate media on their home computers and enable people to become cultural producers; technologies that allow more people to break law in the eyes of copyright industries; historical look at collage practices from pre-digital era to present; ethical and legal questions surrounding use and reuse of copyrighted materials; notion of free speech in a media age. Prerequisites: (COMM:1112 or COMM:1170) and (COMM:1117 or COMM:1130) and (COMM:1168 or COMM:1174) and COMM:1301 and COMM:1305. Requirements: g.p.a. of at least 2.30 and completion of four of five Foundations of Communication courses.

**COMM:2088 Media and Democracy**

Exploration of relationship between democracy and mass communication; why controversies regarding mass communication are also controversies about democracy; logical relationship between democracy and mass media; roots and history of ideas of democracy, contemporary obstacles to realization of these ideas, and varied issues of present; latest developments in world of politics and media. Prerequisites: (COMM:1112 or COMM:1170) and (COMM:1117 or COMM:1130) and (COMM:1168 or COMM:1174) and COMM:1301 and COMM:1305. Requirements: g.p.a. of at least 2.30 and completion of four of five Foundations of Communication courses.

**COMM:2089 Nonverbal Communication**

Introduction to theoretical study of nonverbal communication; focus on major principles and research trends; examination of role of nonverbal communication in communication as a whole; perception and interpretation of nonverbal communication (i.e., posture, eye movements, tone of voice); nonverbal behaviors (i.e., facial expression, eye movement) as used to persuade, impress, or deceive someone. Prerequisites: (COMM:1112 or COMM:1170) and (COMM:1117 or COMM:1130) and (COMM:1168 or COMM:1174) and COMM:1301 and COMM:1305. Requirements: g.p.a. of at least 2.30 and completion of four of five Foundations of Communication courses.

**COMM:2090 Topics in Communication Studies**

Topics vary. Prerequisites: (COMM:1112 or COMM:1170) and (COMM:1117 or COMM:1130) and (COMM:1168 or COMM:1174) and COMM:1301 and COMM:1305. Requirements: g.p.a. of at least 2.30 and completion of four of five Foundations of Communication courses.

**COMM:2091 Organizational Communication**

Theories and concepts of organizational communication; focus on issues of good communication at a number of levels—people within organization must be able to work with one another and communicate in effective ways; people, and especially leaders, need to be able to persuade one another effectively; organizations must be able to persuade outsiders, whether persuading them to buy organization's products, or in more complex circumstances, persuade outside world to accept apologies or statements of regret when the company does something wrong. Prerequisites: (COMM:1112 or COMM:1170) and (COMM:1117 or COMM:1130) and (COMM:1168 or COMM:1174) and COMM:1301 and COMM:1305. Requirements: g.p.a. of at least 2.30 and completion of four of five Foundations of Communication courses.

**COMM:2802 Workshop in Debate and Forensics**

Public argument on questions of value and policy; opportunities for demonstration and practice in discussion and debate. Requirements: concurrent enrollment in the National Summer Institute in Forensics.
COMM:2813 Practicum in Debate 1 s.h.
Practice of skills in research, reasoning, argument development, and argumentative performance in debate undertaken by members of the A. Craig Baird Debate Forum in preparation for and participation in intercollegiate debate competition. Requirements: participation in A. Craig Baird Debate Forum.

COMM:2821 Oral Interpretation 3 s.h.
Weekly performances to develop and define communication skills for professional careers in teaching and business; poetry, prose, monologue, storytelling, duo interpretation, reader's theatre, and demonstration speeches. Requirements: for COMM:2821 — g.p.a. of at least 2.30 and minimum 30 s.h. of credit. Same as EDTL:2821.

COMM:2828 Communication Studies Internship 1-3 s.h.
Communication skills, knowledge in work assignments related to students' academic and career interests; full- or part-time, on or off campus. Requirements: g.p.a. of at least 2.30, communication studies major, and minimum of 12 s.h. of communication studies course work.

COMM:2896 Workshop in Teaching Communication and Forensics arr.
Methods, materials, progression, evaluation in teaching and supervising students in courses and class activities; opportunities for observation, demonstration, practice in teaching theater, discussion and debate, individual speech, dramatic and forensic events. Prerequisites: (COMM:1112 or COMM:1170) and (COMM:1117 or COMM:1130) and (COMM:1168 or COMM:1174) and COMM:1301 and COMM:1305. Requirements: g.p.a. of at least 2.30, completion of Foundations of Communication requirement, and 6 s.h. of intermediate-level course work.

COMM:2897 Independent Study arr.
Creative or research project under faculty supervision.

COMM:2898 Honors Workshop 1 s.h.
Preparation for honors thesis prospectus; coordination of student's individual thesis work, introduction to issues in research design, methods. Prerequisites: (COMM:1112 or COMM:1170) and (COMM:1117 or COMM:1130) and (COMM:1168 or COMM:1174) and COMM:1301 and COMM:1305. Requirements: g.p.a. of at least 3.33, honors standing, completion of Foundations of Communication requirement, and 6 s.h. of intermediate-level course work.

COMM:2899 Honors Thesis 3 s.h.
Individual research, writing, or creative production under faculty supervision. Prerequisites: (COMM:1112 or COMM:1170) and (COMM:1117 or COMM:1130) and (COMM:1168 or COMM:1174) and COMM:1301 and COMM:1305. Requirements: g.p.a. of at least 3.33, honors standing, completion of Foundations of Communication requirement, and 6 s.h. of intermediate-level course work.

Upper-Level Undergraduate and Graduate

COMM:3100 LGBTQ/Queer Studies 3 s.h.
Overview of queer theory and queer studies; development of critical thinking skills in relation to cultural constructions of gender, sexuality, race, and other identity categories. Requirements: for COMM:3100 or communication studies majors — (COMM:1112 or COMM:1170) and (COMM:1117 or COMM:1130) and (COMM:1168 or COMM:1174) and COMM:1301 and COMM:1305 and g.p.a. of at least 2.30 and completion of Foundations of Communication requirement and 6 s.h. of intermediate-level course work. Same as GWSS:3100.

COMM:3600 Issues in Rhetoric and Culture: Crafting Electronic Identities 3 s.h.
Rhetorical theory and criticism as culturally embedded practices; rhetorical production of selves and social difference; relationships between rhetoric and literature, philosophy, popular texts. Requirements: for COMM:3600 — communication studies major, g.p.a. of at least 2.30, completion of Foundations of Communication requirement, and 6 s.h. of intermediate-level course work. Same as RHET:3600.

COMM:3834 Arab Spring in Context: Media, Religion, and Geopolitics 3 s.h.
Protest movements that started in Tunisia in 2011 and swept across North Africa and the Middle East transforming Arab and Islamic societies in radically different ways; function of social media, satellite television, communication technology; influence of religious leaders and groups on some protest outcomes; impact of wealth and geopolitics on social fabric of Islamic societies within and outside Arab countries. Requirements: for COMM:3834 — g.p.a. of at least 2.50, completion of Foundations of Communication requirement, and 6 s.h. of intermediate-level course work. Same as RELS:3834, IS:3834, WLLC:3834, JMC:3146.

COMM:4100 Developing Leadership 3 s.h.
Exploration of communicative dimensions of leadership and work of organizational communication scholars who have studied this topic; builds on leadership in organizational communication, business, and professional communication or other courses that introduce leadership from a communication perspective; readings and discussions of scholarly articles and selections from contemporary books/articles about leadership geared toward popular or professional audiences; team work, hands-on projects with emphasis on use of leadership skills. Prerequisites: (COMM:1112 or COMM:1170) and (COMM:1117 or COMM:1130) and (COMM:1168 or COMM:1174) and COMM:1301 and COMM:1305. Requirements: g.p.a. of at least 2.30, completion of Foundations of Communication requirement, and 6 s.h. of intermediate-level course work.
COMM:4131 Globalization and Culture 3 s.h.
How context for everyday experience has increasingly become globally determined (e.g., ever-increasing transnational migration of people, spread of American culture, growth of international corporations and trade, rise of international conflict and transnational activism); range of theoretical and critical readings on globalization; various phenomena and perspectives regarding topic; themes directly relevant to lives of modern youth; how globalization affects opportunities and risks, identities and relationships. Prerequisites: (COMM:1112 or COMM:1170) and (COMM:1117 or COMM:1130) and (COMM:1168 or COMM:1174) and COMM:1301 and COMM:1305. Requirements: g.p.a. of at least 2.30, completion of Foundations of Communication requirement, and 6 s.h. of intermediate-level course work. Same as IS:4131.

COMM:4135 Media, Culture, and Relationships 3 s.h.
Intersections of interpersonal communication and media; often studied as separate phenomena, approached as integrated systems, and integration as a central issue of our times; application of theories of interpersonal communication, media, and culture to a project that identifies a communication problem involving interpersonal and media issues, and proposes a solution to a potential client or audience; students draw on skills central to communication studies major (critical thinking, identifying and solving problems, effective oral and written communication). Prerequisites: (COMM:1112 or COMM:1170) and (COMM:1117 or COMM:1130) and (COMM:1168 or COMM:1174) and COMM:1301 and COMM:1305. Requirements: g.p.a. of at least 2.30, completion of Foundations of Communication requirement, and 6 s.h. of intermediate-level course work.

COMM:4140 Communication and Relationships 3 s.h.
Communication process in personal relationships; how communication functions to initiate, sustain, and dissolve a variety of relationships including friendships, romantic couples, marital pairs, and family relationships. Prerequisites: (COMM:1112 or COMM:1170) and (COMM:1117 or COMM:1130) and (COMM:1168 or COMM:1174) and COMM:1301 and COMM:1305. Requirements: g.p.a. of at least 2.30, completion of Foundations of Communication requirement, and 6 s.h. of intermediate-level course work.

COMM:4142 Advanced Intercultural Communication 3 s.h.
Defining culture as a historically-transmitted, socially-constructed system of meaning enacted in face-to-face interaction and mass media; focus on a specific topic within intercultural communication research and theory (i.e., cultural nature of personal relationships, built environment as culture, intersection of private with public cultural meaning); in-depth follow-up of general approach to intercultural communication covered in lower-level courses. Prerequisites: (COMM:1112 or COMM:1170) and (COMM:1117 or COMM:1130) and (COMM:1168 or COMM:1174) and COMM:1301 and COMM:1305. Requirements: for COMM:4142 — COMM:1112 or COMM:1170, COMM:1301, COMM:1305, COMM:1117 or COMM:1130, COMM:1168 or COMM:1174, g.p.a. of at least 2.50, completion of Foundations of Communication requirement, and 6 s.h. of intermediate-level course work. Same as IS:4142.

COMM:4143 Classical Rhetoric and Greek Culture 3 s.h.
Origins and development of the art of rhetoric from Sophists to Aristotle; significance to Greek culture from fifth to fourth century B.C. Prerequisites: (COMM:1112 or COMM:1170) and (COMM:1117 or COMM:1130) and (COMM:1168 or COMM:1174) and COMM:1301 and COMM:1305. Requirements: g.p.a. of at least 2.30, completion of Foundations of Communication requirement, and 6 s.h. of intermediate-level course work.

COMM:4145 Argument and Law 3 s.h.
Practices of argumentation that have special legal significance; court practices in legal argumentation (constructing legal arguments and briefs, trial and appellate oral advocacy); structure of argumentation that creates categories and limits of freedom of expression. Prerequisites: (COMM:1112 or COMM:1170) and (COMM:1117 or COMM:1130) and (COMM:1168 or COMM:1174) and COMM:1301 and COMM:1305. Requirements: g.p.a. of at least 2.30, completion of Foundations of Communication requirement, and 6 s.h. of intermediate-level course work.

COMM:4147 Family Communication 3 s.h.
Family relationships and various ways they develop and change, how they affect those who participate in them; theory and research on family communication; family conceived as a group of persons who share their lives over an extended period of time bound by ties of marriage, blood, or commitment. Prerequisites: (COMM:1112 or COMM:1170) and (COMM:1117 or COMM:1130) and (COMM:1168 or COMM:1174) and COMM:1301 and COMM:1305. Requirements: g.p.a. of at least 2.30, completion of Foundations of Communication requirement, and 6 s.h. of intermediate-level course work.
COMM:4150 Cultural History of Advertising  3 s.h.
Cultural, historical, and critical approach to creating, maintaining, repairing, and transforming a consumption culture in the United States; material and ideological character of life in the United States as it evolved from a culture of production in Gilded Age (late 19th century) to a culture of consumption through first half of 20th century, culminating in a collective fantasy of the American Dream as articulated and celebrated in 1950s; emergence of corporate capitalism and its crucial ideological voice, national brand advertising. Prerequisites: (COMM:1112 or COMM:1170) and (COMM:1117 or COMM:1130) and (COMM:1168 or COMM:1174) and COMM:1301 and COMM:1305. Requirements: g.p.a. of at least 2.30, completion of Foundations of Communication requirement, and 6 s.h. of intermediate-level course work.

COMM:4151 Cultural History of Television  3 s.h.
Cultural history of television in the United States; focus on rise of network television, relationship between networks and advertisers, imagery surrounding introduction of television into the home, and larger historical context; postwar era (1950s) and rise of genres that are still with us, especially sitcom (situation comedy); questions about desire, gender, family, nation, and the body. Prerequisites: (COMM:1112 or COMM:1170) and (COMM:1117 or COMM:1130) and (COMM:1168 or COMM:1174) and COMM:1301 and COMM:1305. Requirements: g.p.a. of at least 2.30, completion of Foundations of Communication requirement, and 6 s.h. of intermediate-level course work.

COMM:4152 Latin American Media  3 s.h.
Development of media institutions, texts, and audiences across a number of Latin American countries; focus on broadcast media (radio and television) and situates them within larger historical context of 20th- and 21st-century Latin America; readings, discussions, and assignments with particular attention to influence of U.S. corporate and state interests on Latin American media; debates over cultural dependency, globalization, and hybridity in region. Prerequisites: (COMM:1112 or COMM:1170) and (COMM:1117 or COMM:1130) and COMM:1301 and COMM:1305. Requirements: g.p.a. of at least 2.30, completion of Foundations of Communication requirement, and 6 s.h. of intermediate-level course work.

COMM:4153 Magic Machines: Technology and Social Change  3 s.h.
How media has altered culture, society, and human consciousness throughout history with focus on last two centuries (or modernity); how communication has been shaped by a variety of media (i.e., gesture, language, writing, printing, calendars, clocks, photography, telegraph, telephone, phonograph, film, radio, television, computers); 21st-century questions concerning technology and how few communicate today without aid of some kind of machine or technique. Prerequisites: (COMM:1112 or COMM:1170) and (COMM:1117 or COMM:1130) and (COMM:1168 or COMM:1174) and COMM:1301 and COMM:1305. Requirements: g.p.a. of at least 2.30, completion of Foundations of Communication requirement, and 6 s.h. of intermediate-level course work.

COMM:4156 Feminist Visual Rhetoric  3 s.h.
Exploration of connections among feminist rhetoric, visual rhetoric, and visual culture; critical analysis of scholarship on visual rhetoric; feminist theoretical and conceptual frameworks about the body; fields of visual culture and visual rhetoric; critiques of several feminist body artists’ artworks as a means to concretize theories. Prerequisites: (COMM:1112 or COMM:1170) and (COMM:1117 or COMM:1130) and COMM:1301 and COMM:1305. Requirements: g.p.a. of at least 2.30, completion of Foundations of Communication requirement, and 6 s.h. of intermediate-level course work.

COMM:4157 Advanced Topics in Communication Studies  3 s.h.
Issues or problems in particular communication contexts. Prerequisites: (COMM:1112 or COMM:1170) and (COMM:1117 or COMM:1130) and (COMM:1168 or COMM:1174) and COMM:1301 and COMM:1305. Requirements: g.p.a. of at least 2.30, completion of Foundations of Communication requirement, and 6 s.h. of intermediate-level course work.

COMM:4160 The Talk of Everyday Life  3 s.h.
In-depth study of various genres of talk that organize everyday communicative life; mundane interaction rituals (i.e., as small talk, gossip, face-saving talk, compliance-gaining, asking for and giving advice and support, and telling stories); formalized interaction rituals (i.e., rites of passage); functions of talk in constructing identities, building relationships, and sustaining social order more generally across all genres. Prerequisites: (COMM:1112 or COMM:1170) and (COMM:1117 or COMM:1130) and (COMM:1168 or COMM:1174) and COMM:1301 and COMM:1305. Requirements: g.p.a. of at least 2.30, completion of Foundations of Communication requirement, and 6 s.h. of intermediate-level course work.

COMM:4163 The Dark Side of Interpersonal Communication  3 s.h.
Review of advanced communication theories and research; focus on dark side of interpersonal communication and close relationships; negative or difficult elements of developing and maintaining relationships; expression of difficult emotions; mundane communication that can function in destructive or negative ways. Prerequisites: (COMM:1112 or COMM:1170) and (COMM:1117 or COMM:1130) and (COMM:1168 or COMM:1174) and COMM:1301 and COMM:1305. Requirements: g.p.a. of at least 2.30, completion of Foundations of Communication requirement, and 6 s.h. of intermediate-level course work.

COMM:4164 Life Happens. Don’t Worry About It: The Communication of Social Support  3 s.h.

Advanced look at communication of social support as a research tradition in interpersonal communication scholarship; in-depth overview of theories, concepts, types, processes, and mechanisms that constitute different forms of comforting behaviors; emphasis on factors that change people's abilities, motivations, or perceptions of success during experiences of social support; Internet influences on social support by online support groups, Internet-based intervention programs, how process of communicating comfort is altered by conveying these messages online. Prerequisites: (COMM:1112 or COMM:1170) and (COMM:1117 or COMM:1130) and (COMM:1168 or COMM:1174) and COMM:1301 and COMM:1305. Requirements: g.p.a. of at least 2.30, completion of Foundations of Communication requirement, and 6 s.h. of intermediate-level course work.

COMM:4165 Criticism and Public Culture 3 s.h.
How people formulate attitudes, beliefs, and values about an array of arenas in public culture; critical perspectives (i.e., feminism, Marxism, psychoanalysis, queer theory); sporting rituals, television programs, political speeches, museums, sacred cultural documents; practice of critical reading to engage various cultural texts (i.e., films, national memorials, social movement rhetoric). Prerequisites: (COMM:1112 or COMM:1170) and (COMM:1117 or COMM:1130) and (COMM:1168 or COMM:1174) and COMM:1301 and COMM:1305. Requirements: g.p.a. of at least 2.30, completion of Foundations of Communication requirement, and 6 s.h. of intermediate-level course work.

COMM:4166 Life-Span Communication 3 s.h.
How communication processes (i.e., social support, language skills, interpersonal relationship management) change across the course of one's existence; normative and unexpected demographic and health events mapped out across a life span; how our communication processes influence and are influenced by social experiences; underlying premise of life-span perspective that our potential for human growth extends throughout our life course. Prerequisites: (COMM:1112 or COMM:1170) and (COMM:1117 or COMM:1130) and (COMM:1168 or COMM:1174) and COMM:1301 and COMM:1305. Requirements: g.p.a. of at least 2.30, completion of Foundations of Communication requirement, and 6 s.h. of intermediate-level course work.

COMM:4167 Communication, Cognition, and Emotion 3 s.h.
Understanding how communication, cognition, and emotion are tied together; different theories of emotion and types of emotions (i.e., love, anger, jealousy, happiness, embarrassment, hurt). Prerequisites: (COMM:1112 or COMM:1170) and (COMM:1117 or COMM:1130) and (COMM:1168 or COMM:1174) and COMM:1301 and COMM:1305. Requirements: g.p.a. of at least 2.30, completion of Foundations of Communication requirement, and 6 s.h. of intermediate-level course work.

COMM:4168 Rhetoric of the Body 3 s.h.
Survey of a range of theories about the body and application to specific case studies; implications of how bodies are endowed with and convey meaning; theories of pollution, pain, ability, and normativity; diverse case studies that are seemingly disparate, but all preoccupy themselves with public conceptions of bodily meaning (i.e., beauty pageants, freak shows, plastic surgery, the wannabe movement, tattoos, the FDR Presidential Memorial, Deaf culture, fat bodies, illness, and torture). Prerequisites: (COMM:1112 or COMM:1170) and (COMM:1117 or COMM:1130) and (COMM:1168 or COMM:1174) and COMM:1301 and COMM:1305. Requirements: g.p.a. of at least 2.30, completion of Foundations of Communication requirement, and 6 s.h. of intermediate-level course work.

COMM:4169 Feminist Rhetorics 3 s.h.
Exploration of multiple, varied, and complex histories of U.S. feminisms from rhetorical perspectives; focus on primary documents, the letters, speeches, essays, and manifesto/as that shaped women's movements and inspire social change from late 18th century to present; social, political, and personal issues that feminists sought to address and transform; communicative and rhetorical methods utilized, and implications of these efforts for women's lives and broader U.S. American culture. Prerequisites: (COMM:1112 or COMM:1170) and (COMM:1117 or COMM:1130) and (COMM:1168 or COMM:1174) and COMM:1301 and COMM:1305. Requirements: g.p.a. of at least 2.30, completion of Foundations of Communication requirement, and 6 s.h. of intermediate-level course work. Same as GWSS:4169.

COMM:4170 Theories of Persuasion 3 s.h.
Theoretical examination of historical, psychological, social, and cultural perspectives on persuasion; analysis of persuasive attempts; questions of cultural persuadables and current problems in U.S. American culture (i.e., obesity, drunk driving, date rape). Prerequisites: (COMM:1112 or COMM:1170) and (COMM:1117 or COMM:1130) and (COMM:1168 or COMM:1174) and COMM:1301 and COMM:1305. Requirements: g.p.a. of at least 2.30, completion of Foundations of Communication requirement, and 6 s.h. of intermediate-level course work.

COMM:4172 Television and African American Culture 3 s.h.
Role of television in African American culture; examination of debates, stereotyping, authenticity, effects of programming, aesthetics, and television's relationship to other forms of cultural expression. Requirements: for COMM:4172 or communication studies major — COMM:1112, COMM:1170, COMM:1301, or COMM:1305, COMM:1117 or COMM:1130, COMM:1168 or COMM:1174, g.p.a. of at least 2.30, completion of Foundations of Communication requirement, and 6 s.h. of intermediate-level course work. Same as AFAM:4001.

COMM:4173 Social Media, Culture, and Politics 3 s.h.
Introduction to theoretical issues raised by social media for communication; particular emphasis on cultural and political implications; how social media is understood, forms of digital communication, individual and collective identity formations via social media, online communities, and intersection of social media and existing culture and politics. Prerequisites: (COMM:1112 or COMM:1170) and (COMM:1117 or COMM:1130) and (COMM:1168 or COMM:1174) and COMM:1301 and COMM:1305. Requirements: g.p.a. of at least 2.30, completion of Foundations of Communication requirement, and 6 s.h. of intermediate-level course work.

COMM:4174 Communication, Technology, and National Security 3 s.h.

Relationship between communication technologies and national security via three main themes—use of communications infrastructure in previous and future wars for the purpose of securing and maintaining U.S. leadership in world system, uses of propaganda for domestic and foreign consumption, and representation of national security issues in popular media; historical and contemporary components. Prerequisites: (COMM:1112 or COMM:1170) and (COMM:1117 or COMM:1130) and (COMM:1168 or COMM:1174) and COMM:1301 and COMM:1305. Requirements: g.p.a. of at least 2.30, completion of Foundations of Communication requirement, and 6 s.h. of intermediate-level course work.

COMM:4176 Advanced Relational Theory 3 s.h.

Relationships and how they significantly shape our experiences of the world, sense of identity, outlook on life, and way in which we think about experiences and life in general; premise that relationships are more than emotional attachments or bonds; relationships as happy, emotionally satisfying elements of life; demonstrations of a variety of communicative situations that establish, reconstitute, and demonstrate importance of membership of communities and relationships. Prerequisites: (COMM:1112 or COMM:1170) and (COMM:1117 or COMM:1130) and (COMM:1168 or COMM:1174) and COMM:1301 and COMM:1305. Requirements: g.p.a. of at least 2.30, completion of Foundations of Communication requirement, and 6 s.h. of intermediate-level course work.

COMM:4181 Legal Communication and Culture 3 s.h.

Law and legal system as communicative networks of meaning-making; law viewed as a symbolic system, from courtroom arguments to judicial opinions to legal reporting to circulation of law in everyday life, in contrast with legal courses concerned with learning blackletter law; law from a rhetorical perspective that allows us to think in new and different ways about cultural implications of legal argument. Prerequisites: (COMM:1112 or COMM:1170) and (COMM:1117 or COMM:1130) and (COMM:1168 or COMM:1174) and COMM:1301 and COMM:1305. Requirements: g.p.a. of at least 2.30, completion of Foundations of Communication requirement, and 6 s.h. of intermediate-level course work.

COMM:4183 Networking America: The Cultural History of Broadcasting 3 s.h.

Exposure to different interpretations of cultural impact and legacy of U.S. broadcasting in 20th century; institutional practices, program genres, and audience formations of 1920s through the 1970s radio and television network eras; how historical contexts shape, and are shaped by, production and reception of broadcasting texts. Prerequisites: (COMM:1112 or COMM:1170) and (COMM:1117 or COMM:1130) and (COMM:1168 or COMM:1174) and COMM:1301 and COMM:1305. Requirements: g.p.a. of at least 2.30, completion of Foundations of Communication requirement, and 6 s.h. of intermediate-level course work.

Graduate

Graduate students also may take courses numbered 3000-4999 for credit, with approval of their committee.

COMM:5200 Introduction to Research and Teaching 1 s.h.

Introduction to communication studies as a field of scholarship; selection of research problems, major lines of research represented in the department, bibliographical tools for scholarship in the field; issues, practical tasks, and concerns relevant to effective college or university classroom teaching.

COMM:5223 Deliberation, Advocacy, and Civic Engagement 3 s.h.

Practices of public deliberation in governance and civil society; counterpublic sphere discourses.

COMM:5230 Introduction to Rhetoric and Discourse 3 s.h.

Introduction to major theories, principles, and practices of rhetorical theory, rhetorical criticism, and discourse analysis.

COMM:5241 Theories of Mass Communication 3 s.h.

Major concepts, theories, schools of thought in media studies, mass communication.

COMM:5299 Graduate Independent Study arr.

COMM:6210 Health Communication 3 s.h.

Theories, concepts, research associated with health communication; interpersonal and mass communication approaches. Same as CBH:6210.

COMM:6220 Health Communication Campaigns 3 s.h.

Intervention design and analysis of health campaigns; theory, practice, methods; mass media, community, organization, and interpersonal approaches. Same as CBH:6220.

COMM:6310 Classical Rhetoric 3 s.h.

Discourse in the ancient world. Same as CLSA:6310.

COMM:6319 Practical Criticism 3 s.h.

Basics of rhetorical criticism; rhetoric as practice or technique; how to read rhetorically; fundamentals (i.e., figuration and tropes, form and genre, voice, style, topos) and art of rhetorical critique.
COMM:6323 Rhetoric, Protest, and Social Movements 3 s.h.
Introductory study of relationships between rhetoric, protest, and social movements; theoretical and methodological debates framing and shaping how we understand protest and social movements rhetorically.

COMM:6335 Proseminar: Contemporary Rhetorical Studies 2-4 s.h.
Problems in contemporary rhetorical studies; may include works of Kenneth Burke, Wayne Booth, deconstructionists, feminist theorists and critics, critics of communication technologies.

COMM:6400 Current Issues in Rhetoric 3 s.h.
Ethical, social, or cultural issues; rhetoric's role in their contemporary significance; traditional aspects of rhetoric, their pertinence to present concerns. Same as RHET:6400.

COMM:6635 Crossing Borders Seminar 2-3 s.h.

COMM:6336 Seminar in Rhetorical Theory 1-4 s.h.
Topics in history and development of rhetorical theory; theory construction and application to critical practice.

COMM:6339 Seminar: Rhetoric and Culture 1-4 s.h.
Cultural theories, their utility in accounting for communication practices.

COMM:6340 Media and Modernity 3 s.h.
Survey of classic and contemporary theoretical texts on cultural, social, political, and human consequences of 19th- and 20th-century media.

COMM:6341 Topics in Mass Communication Scholarship 1-3 s.h.
Theory and research on problems in mass communication.

COMM:6342 Critical Television Studies 3 s.h.
Introduction to canonical and contemporary readings in critical television studies; primary questions and theories associated with textual, industrial, ethnographic, and integrated approaches to studying television; how technological, economic, and cultural changes have altered television and how it is studied.

COMM:6346 The Public Sphere 3 s.h.
Theories, intellectual history, critics, contemporary issues of the public sphere.

COMM:6350 Seminar: Mass Communication 1-4 s.h.
Topics vary.

COMM:6351 Global Media Seminar 3 s.h.
Theories and processes of globalization and the cultural implications of media globalization; local responses to globalization processes with reference to questions of modernity and national/transnational identity.

COMM:6352 Seminar: Media Theory 3 s.h.
Topics vary.

COMM:6354 Media and Social Change in Latin America 3 s.h.
Cultural history and political economy of Latin American media; focus on U.S. influence and globalizing processes; media theory in Latin context; national and transnational audience formations.

COMM:6355 Cultural History of Radio 3 s.h.
Cultural history, sound aesthetics, political economy, and audience studies of U.S. radio broadcasting; radio as a contested medium of local, regional, and national culture.

COMM:6365 The Communication of Social Support 3 s.h.
Substantial knowledge base developed by scholars about types, processes, and mechanisms of social support used by humans to comfort one another; in-depth examination of theory and empirical research related to communication of social support; emphasis on types of support, verbal person-centered messages, and various strategies for social support; gender differences and social skills related to comforting; online supportive communication; development of detailed knowledge of this topic, critical assessment of extant research, and synthesis of class readings in written format.

COMM:6367 Computer-Mediated Communication 3 s.h.
In-depth analysis of theory and research related to computer-mediated communication; factors that distinguish mediated from face-to-face interaction, theories of mediated interpersonal communication, self-presentation online, Internet-based relationships, and online supportive communication; how the Internet influences communication; online supportive communication, problematic Internet use, preference for online social interaction, the digital divide, mediated social networks, deception, and interventions on the Internet.

COMM:6370 Quantitative Research Methods 3 s.h.
Primary methods for conducting quantitative research on interpersonal and group communication.

COMM:6371 Communication Theory 3 s.h.
Survey of primary theories of interpersonal, cultural, group, and organizational communication.

COMM:6372 Ethnographic Methods 3 s.h.
Qualitative methods used by ethnographers and interpretive researchers, including participant observation, field interviewing.

COMM:6373 Persuasion Theory and Research 3 s.h.
Traditional social scientific approaches to research and theory; development of a cultural perspective on persuasion.

COMM:6374 Relational Communication Theory and Research 3 s.h.
Communication in initiation, development, maintenance, breakdown, and repair of social and personal relationships.
COMM:6375 Theories of Culture 3 s.h.
Research and theory on face-to-face communication, from ethnography of communication perspective.

COMM:6376 Family Communication 3 s.h.
Theory and research on communication among and between family members (parents, children, marital partners, siblings); quantitative and qualitative research.

COMM:6380 Seminar: Dialogic Communication 3 s.h.
Dialogic approaches to communication, including Bakhtin and Buber.

COMM:6381 Seminar: Topics in Communication Research 3 s.h.
Topics vary.

COMM:6383 Seminar: Constructs, Communication, and Identity 3 s.h.
Concepts of identity and sociality in George Kelly's Personal Construct Theory; their connection to theories of rhetoric, especially Burke, and social community, especially Mead.

COMM:6387 Communication, Cognition, and Emotion 3 s.h.
Theoretical and empirical work that integrates communication, cognition, emotion; role of social cognition in communication, theories of emotion, types of emotional experiences; approaches to understanding emotion from perspectives in psychology, social cognition, communication; emotion-related issues such as influence of gender, effects of mood.

COMM:6399 Ph.D. Dissertation arr.

COMM:6660 Critical Ethnography 3 s.h.
How power relations constitute the work of ethnographic research; ethnography as a rhetorical form—how ethnographic inscription renders self, other, culture, and the world intelligible in ways that reinscribe and/or challenge dominant social relations; axes of power such as race, class, gender, sexuality, and nation within postcolonial, feminist, and antiracist approaches to ethnographic/autoethnographic theory and praxis; negotiating researcher privilege and epistemic violence; crisis of representation. Same as GWSS:6660.
Comparative Literature

Director, Division of World Languages, Literatures, and Cultures
- Russell Ganim

Coordinator, Comparative Literature Program
- Brian Gollnick

Undergraduate major: comparative literature (B.A.)
Undergraduate minor: comparative literature
Graduate degree: Ph.D. in comparative literature
Facility: http://clas.uiowa.edu/dwllc/people
Web site: http://clas.uiowa.edu/dwllc/comparative-literature/ba-comparative-literature

The Comparative Literature Program addresses culture across regions and languages in relation to literature, social theory and philosophy, history, and other disciplines. Students draw resources from several University of Iowa arts and humanities units, including the Department of Cinematic Arts; the International Writing Program; the Department of English; and the Division of World Languages, Literatures, and Cultures. Study of comparative literature prepares students to engage with critical concepts of tradition, identity, and expression in an interdisciplinary and multilingual environment.

In addition to degree programs and an undergraduate minor, the Comparative Literature Program offers courses approved for the Literary, Visual, and Performing Arts areas of the College of Liberal Arts and Sciences General Education Program (p. 313).

The Comparative Literature Program is administered by the Division of World Languages, Literatures, and Cultures (p. 228).

Undergraduate Programs of Study
- Major in comparative literature (Bachelor of Arts)
- Minor in comparative literature

Bachelor of Arts

The Bachelor of Arts with a major in comparative literature requires a minimum of 120 s.h., including 33 s.h. of work for the major. Students must maintain a g.p.a. of at least 2.00 in all courses for the major and in all UI courses for the major. They also must complete the College of Liberal Arts and Sciences General Education Program (p. 313).

The major in comparative literature is designed to promote cultural awareness, to increase speaking and writing skills, and to develop capacities for systematic reasoning about literature. The program offers two tracks: world languages and literature, and literature and arts. Students work with faculty advisors close to their track to develop coherent, individualized programs of study that reflect their interests and developing skills.

Students share a common set of basic courses in the literatures of widely divergent cultures and historical periods, in translation, and in interaction among the arts. All students are expected to gain an international perspective on literature and the arts and to become acquainted with interdisciplinary approaches to cultural study.

The successful pursuit of comparative literature requires study of at least one foreign cultural tradition, with appropriate emphasis on language, literature, and the arts in historical context. Familiarity with the literatures and cultures of other nations goes hand-in-hand with theoretical inquiry and reflection on basic issues, such as the nature and value of storytelling in literature and other arts—for instance, film, song, and painting. Translation between languages and among different arts represents another basic center of theory and practice. Individual courses of study may extend into other disciplines, including history, philosophy, linguistics, anthropology, law, and psychology.

In conjunction with an appropriate overall curriculum, the major in comparative literature can offer effective preparation for professional studies in fields such as law and business, or for employment in fields that value critical thinking and international understanding. It also offers excellent preparation for graduate work in the humanities.

Of the 33 s.h. required for the major, students must earn 21 s.h. in University of Iowa courses. They may count a maximum of 6 s.h. of course work from another major, minor, or certificate toward the major in comparative literature. Students majoring in comparative literature with a second major in cinema may count a maximum of 12 s.h. of credit toward both majors.

The major in comparative literature requires the following course work.

COMMON COURSES
All students take these (total of 18 s.h.):

CL:1025 Introduction to Critical Reading and Viewing 3 s.h.
CL:1240 Major Texts of World Literature, Antiquity to 1700 3 s.h.
CL:1241 Major Texts of World Literature, 1700 to the Present 3 s.h.
CL:2100 Introduction to Criticism and Theory 3 s.h.
CINE:3195 Undergraduate Seminar 3 s.h.
Comparative literature elective(s) 3 s.h.

Tracks
Students complete 15 s.h. of work in one of the following tracks.

LITERATURE AND ARTS TRACK
To complete this track, students take 12 s.h. of upper-level course work (courses numbered 3000 or above) in a single fine arts area. They may include one upper-level course in performance, practice, or production, with consent of the director of undergraduate studies.

Course work for the track also must include one 3 s.h. course that focuses explicitly on arts and literature in comparative perspective.

WORLD LANGUAGES AND LITERATURE TRACK
To complete this track, students take 9 s.h. of courses in one foreign literature, read in the original language. They may include one course in composition and conversation.
Language courses taken to complete the General Education Program do not count toward the major.

Students take an additional 6 s.h. of course work in comparative literature or a related area (e.g., English and American literature, film, linguistics, anthropology, philosophy, history) or in a second foreign literature.

**Four-Year Graduation Plan**

The following checkpoints list the minimum requirements students must complete by certain semesters in order to stay on the University's Four-Year Graduation Plan. (Courses in the major are those required to complete the major; they may be offered by departments other than the major department.)

Note: When requirements for the major in comparative literature include advanced work in a language, the student may need to acquire competence in the language by completing course work early in his or her plan of study. Such course work is not reflected in the following checkpoints.

**Before the fifth semester begins:** at least two courses in the major

**Before the seventh semester begins:** at least four more courses in the major (total of six) and at least 90 s.h. earned toward the degree

**Before the eighth semester begins:** at least three more courses in the major (total of nine)

**During the eighth semester:** enrollment in all remaining course work in the major, all remaining General Education courses, and a sufficient number of semester hours to graduate

**Honors in the Major**

Students majoring in comparative literature have the opportunity to graduate with honors in the major, which requires that they complete an honors thesis. Once a student has earned 75 s.h., he or she submits a written proposal for the thesis. The proposal must be approved by the faculty member who heads a student's honors thesis committee; the committee must be composed of at least two faculty members from the Comparative Literature Program. A student must complete the honors thesis over the next two consecutive semesters. For specific honors thesis requirements in the comparative literature major, contact the Comparative Literature Program office.

Honors students in comparative literature must be members of the University of Iowa Honors Program, which requires students to maintain a cumulative University of Iowa g.p.a. of at least 3.33 and to fulfill other requirements; visit Honors at Iowa to learn about the University's honors program.

**Minor**

The minor in comparative literature requires 15 s.h. of University of Iowa comparative literature courses, including at least 12 s.h. earned in courses numbered CL:1240 or above. Students must maintain a g.p.a. of at least 2.00 in all courses for the minor and in all UI courses for the minor. Course work in the minor may not be taken pass/nonpass. Contact the Comparative Literature Program office for a list of approved courses.

**Graduate Program of Study**

- Doctor of Philosophy in comparative literature

Admission to the Doctor of Philosophy program in comparative literature is suspended; for degree requirements, see the 2010-11 General Catalog. For information about the Master of Fine Arts in comparative literature—translation, see Translation (p. 635) in the Catalog.

**Courses**

**Lower-Level Undergraduate**

**CL:1000 First-Year Seminar** 1 s.h.
Small discussion class taught by a faculty member; topics chosen by instructor; may include outside activities (e.g., films, lectures, performances). Requirements: completion of rhetoric requirement. Same as CINE:1025.

**CL:1019 Media Matters** 3 s.h.
Development of basic creative and critical skills in the arts and humanities by examining transformations across literature, poetry, photography, and video; media of expression; telling a story in words or images; the difference between looking at a painting, watching a movie, or reading a book; how the soundtrack of a film affects the story; how looking at a musical score differs from performing it; key to producing exciting creative work; full engagement with any given medium.

**CL:1025 Introduction to Critical Reading and Viewing** 3 s.h.
Critical approaches to literature and audiovisual media (film, video, interactive multimedia); selected texts, scholarly and critical responses to them. Requirements: completion of rhetoric requirement. Same as CINE:1025.

**CL:1205 Introduction to World Literature** 3 s.h.
Ways of reading world literature; varied emphases (i.e., thematic, geographical); may include poetry, short fiction, drama, novels, and critical works on importance of translation. Requirements: completion of rhetoric General Education requirement.

**CL:1240 Major Texts of World Literature, Antiquity to 1700** 3 s.h.
Reading, analysis of major literary texts from writing's origins to 1700 in the Mediterranean, Asia, Africa; interrelationship of literature and history. GE: Literary, Visual, and Performing Arts.

**CL:1241 Major Texts of World Literature, 1700 to the Present** 3 s.h.
Reading and analysis of major literary texts from 18th century to present in chronological sequence; emphasis on interrelationship of literature and history. Requirements: completion of rhetoric requirement. GE: Literary, Visual, and Performing Arts.

**CL:1500 Ukraine, a Country at the Crossroads: An Interdisciplinary Seminar on Ukrainian History and Culture** 3 s.h.
Cultural specificity of Ukraine as a large multicultural European country; vital background information for analysis of present-day political events; strategic location between East and West; centuries-long history and culture; all readings in English, no knowledge of Russian or Ukrainian required. Same as SLAV:1500.

**CL:1510 Ghost Stories and Tales of the Weird in Premodern Chinese Literature**
3 s.h.
Reading of Chinese literature concerning ghosts, marvels, and supernatural from 1st millennium B.C.E. through 19th century; readings analyzed against changing historical and religious contexts. Taught in English.

**CL:2100 Introduction to Criticism and Theory**
3 s.h.
Critical approaches to the phenomenon of literature. Requirements: junior standing.

**CL:2531 Topics in Russian, East European, and Eurasian Studies**
arr.
Same as SLAV:2531.

**CL:2618 The Third Reich and Literature**
3 s.h.
Nazi literature, literature of the Holocaust and the Opposition, exile literature, in English translation. Taught in English. GE: Values, Society, and Diversity. Same as GRMN:2618.

**CL:2660 Magic Mirrors, Self-Discovery, and Murder: Gender Trouble in German Literature**
3-4 s.h.
German literature since Romantic era as an intensifying battle of wits over language in which gender has played a central role; a stark rift open where literary space offers much less hospitable conditions to women writers than to men; exploration of gendered fault line that runs through literary space; how women writers respond to and rewrite language that confronts them; readings from German literary texts (in English translation) from 1800 to present; emphasis on writings of women supplemented with key texts by major authors to which they respond and reread; knowledge of German not required. Same as GRMN:2660.

**CL:2700 Romani (Gypsy) Cultures of Eastern Europe**
3 s.h.
Aspects of culture shared by most Roma (Gypsies) around the world; samples of folklore from Europe; impact of Roma on European literature, music, and culture; readings in English; no previous knowledge of Russian or Romani required. Same as SLAV:2232.

**Upper-Level Undergraduate and Graduate**

**CL:3101 The Iowa Review Reading Group in Contemporary Fiction**
0-3 s.h.
Reading and discussion of unsolicited submissions to The Iowa Review of fiction, poetry, and nonfiction; reading groups formed under supervision of editors; preparation of a portfolio that documents student's work, with a short commentary reflecting on the process and their role in it.

**CL:3102 The Iowa Review Reading Group in Contemporary Poetry**
0-3 s.h.
Reading and discussion of unsolicited submissions to The Iowa Review of fiction, poetry, and nonfiction; reading groups formed under supervision of editors; preparation of a portfolio that documents student's work, with a short commentary reflecting on the process and their role in it.

**CL:3103 The Iowa Review Reading Group in Contemporary Nonfiction**
0-3 s.h.
Reading and discussion of unsolicited submissions to The Iowa Review of fiction, poetry, and nonfiction; reading groups formed under supervision of editors; preparation of a portfolio that documents student's work, with a short commentary reflecting on the process and their role in it.

**CL:3104 Topics in International Literature and Culture**
3 s.h.
Focus on significant texts or critical problems related to international literature and culture. Requirements: junior or senior standing. Recommendations: two or more courses in literary study.

**CL:3107 Literature and Anthropology**
3 s.h.
Topics vary. Same as ENGL:3107, ANTH:3107.

**CL:3122 Tolstoy and Dostoevsky**
3-4 s.h.
Tolstoy's War and Peace and Anna Karenina; Dostoevsky's Crime and Punishment, The Demons, and short stories. Taught in English. Same as SLAV:3122.

**CL:3152 America in Other Words**
1-3 s.h.
Current idea of America in its imaginary form: post-1989 world fiction, poetry, and film in original language, in translation, and via online translation resources. Same as IWP:3152.

**CL:3203 Modern Japanese Fiction in Translation**
3 s.h.
Nineteenth century to present. Same as JPNS:3203.

**CL:3204 Traditional Japanese Literature in Translation**
3 s.h.
From seventh century to early modern times. Same as JPNS:3202.

**CL:3206 Warriors Dreams**
3 s.h.
Images of the warrior in traditional Japanese literature, from poetry of the eighth century to romances of the 19th century; readings in English. Same as JPNS:3206.

**CL:3210 Comparative Arts**
3 s.h.
Cultural and aesthetic issues arising from side-by-side investigation of several art forms, including literature, cinema, painting, music, opera, architecture; periods, schools, styles, and their theories. Same as IWP:3210.

**CL:3221 Twentieth-Century Czech Authors**
3 s.h.
Twentieth-century prose literature of Czechoslovakia; philosophical works of Capek, Hrabal, Kundera, Klima, Havel. Taught in English. Same as SLAV:3221.
CL:3222 City as Text/Text as City  3 s.h.  
Ways of reading cities: how built environments are shaped by history; how European cities differ from American or postcolonial cities; how to map, inhabit, remember, touch, smell, and experience a city; what is a global city; what is a sustainable city; how city spaces are felt in terms of gender, class, race, and ethnicity; models that architects, planners, politicians, and designers use to create habitable spaces; how to think of texts as cities (i.e., as spaces where people congregate, meet, live); research paper that combines class readings with independent research on a city of students’ choice.

CL:3223 Reading European Poetry  3 s.h.  
Development of literary reading skills and critical imagination; increase awareness of the complexity of poetry translation, introduction to works of major canonical poets from several European traditions and languages.

CL:3262 Pan-Caribbean Literary Currents  3 s.h.  
Twentieth-century fiction, film, and cultural practices in the Hispanic, Francophone, and Anglophone Caribbean; cultural essays to complement literary readings; pan-Caribbean cultural practices—music and carnival celebrations. Taught in English. Requirements: for CL:3262 — junior or senior standing; for SPAN:3270 — two literature courses. Same as SPAN:3270.

Evolving practices explored through genre, period, movement, or topic, in conjunction with relevant models of analysis; readings in English. Requirements: rhetoric.

CL:3277 Literature and Art  3 s.h.  
English majors may apply this course to the following area and/or period requirement. AREA: Literary Theory and Interdisciplinary Studies. PERIOD: 18th/19th-Century Literature, or 20th/21st-Century Literature. Same as ENGL:3155.

CL:3302 Russian Literature in Translation  3 s.h.  
1860-1917  
Survey of major works, figures, and trends of 19th- and early 20th-century Russian literature; age of the Russian novel; works of Turgenev (Fathers and Sons), Tolstoy (Confession), Dostoevsky (The Idiot, The Brothers Karamazov), and Chekhov (plays). Same as SLAV:3202.

CL:3341 Chinese Literature: Poetry  3 s.h.  
Readings in classical and modern Chinese poetry in English translation. Same as CHIN:3341.

CL:3379 Literature and Society  3 s.h.  
English majors may apply this course to the following area and/or period requirement. AREA: Literary Theory and Interdisciplinary Studies. PERIOD: 20th/21st-Century Literature. Same as ENGL:3152.

CL:3396 Cuban American Literature and Culture  3 s.h.  
Experiences of Cuban exiles in the United States; emergence of a literature and culture based on sense of dispossession, marginality, and memory of island past. Taught in English. Prerequisites: ENGL:1200. GE: Values, Society, and Diversity. Same as SPAN:3420.

CL:3570 Transnational and Postcolonial Writing by Women  3 s.h.  
English majors may apply this course to the following area and/or period requirement. AREA: Transnational Literature and Postcolonial Studies. PERIOD: 20th/21st-Century Literature. Same as ENGL:3570.

CL:4100 Approaches to Critical Theory  3 s.h.  
Introduction to major critical approaches in literary and cultural theory from a variety of traditions; studying existing models, students learn to think theoretically about language and society, and to orient themselves among existing theoretical discourses, interrogating the latter critically in terms of their own perspectives and theoretical needs; selections from influential works, shared class discussion, and presentations; no prior knowledge in the area of critical theory is presumed. Same as TRNS:4100.

CL:4201 The Tale of Genji  3 s.h.  
Close reading in English of Murasaki Shikibu's Tale of Genji; tale’s literary and social contexts, and later reception. Same as JPNS:4201.

CL:4203 Modern Chinese Writers  3 s.h.  
Readings in modern and contemporary Chinese fiction; in English translation. Same as CHIN:4203.

CL:4266 Topics in Literature and Theory  3 s.h.  
CL:4368 Post-Colonial Literature in France  3 s.h.  
Literatures and cultures of Arabo-French (Beur) and Afro-French immigrations. Prerequisites: FREN:3060 and FREN:3300. Same as FREN:4080.

CL:4648 Issues in Gender and Sexuality  3 s.h.  
Significance of gender and/or sexuality to cinema, in general or in a period, genre, film type, or national cinema; theoretical approaches, including feminist and queer theory.

CL:4700 Latin American Studies Seminar  3 s.h.  

CL:4900 Independent Study  arr.  

Graduate

CL:5201 Seminar in Chinese Fiction  3 s.h.  
Novels, novelettes; 16th to 18th centuries (Ming and Qing periods). Requirements: ability to read original texts. Same as CHIN:5201.

Requirements: two years of modern Chinese and one year of classical Chinese. Same as CHIN:5202.
CL:5219 The Iowa Review Teacher's Workshop: Contemporary Literature 1 s.h.
Collaboration with The Iowa Review on adapting materials for classroom use; participants help select poetry, fiction, and literary nonfiction from pages of recent issues and develop curricular materials for use in 9th-12th grade language arts courses on the basis of selected materials; teaching portfolio of selected curricular materials; intended for working teachers in secondary school language arts courses.

CL:5510 Comparative Stylistics 3 s.h.
Translation from English to French, including literary texts. Same as FREN:5020.

CL:6105 Introduction to Contemporary Literary Theory 3 s.h.
How major theories construct literary text; structuralist, semiotic, psychoanalytic, Marxist, reader response, Derridian criticism. Taught in English. Same as SPAN:6905.

CL:6323 Romantic Literature 3 s.h.
Same as ENGL:6400.

CL:7000 Thesis arr.

CL:7054 Seminar: Postcolonial Studies 3 s.h.
Same as ENGL:7800.


CL:7272 Seminar in Comparative Literature 3 s.h.
In-depth study of a comparative topic or a current theoretical debate in the discipline.

CL:7302 Seminar: Medieval Literature and Culture arr.
Same as ENGL:7100.

Same as ENGL:7200.

CL:7500 Independent Study arr.
Computer Science

Chair
• Alberto Segre

Undergraduate majors: computer science (B.A., B.S.); informatics (B.A., B.S.)
Undergraduate minors: computer science; informatics
Graduate degrees: M.C.S.; M.S. in computer science; Ph.D. in computer science
Faculty: https://www.cs.uiowa.edu/people
Web site: http://www.cs.uiowa.edu/

The Department of Computer Science offers undergraduate programs in computer science and in informatics as well as graduate degree programs in computer science. It also offers courses that students in all majors may use to satisfy the General Education Program (p. 313)’s Quantitative or Formal Reasoning requirement and a First-Year Seminar designed for entering undergraduate students.

Undergraduate Programs of Study
• Major in computer science (Bachelor of Arts, Bachelor of Science)
• Major in informatics (Bachelor of Arts, Bachelor of Science)
• Minor in computer science
• Minor in informatics

The majors in computer science and informatics provide students with the necessary training for employment in careers such as software development and information management. Both majors provide good preparation for graduate study in a variety of disciplines. The minor in each discipline helps students acquire fundamental knowledge of the use and applications of computers.

The department encourages students majoring in computer science or informatics to consider earning a second major, certificate, or minor.

Students may declare a major in computer science or in informatics when they are admitted to the University or afterward. All students begin the majors as Bachelor of Arts students but may switch to the Bachelor of Science programs at any time.

Undergraduates majoring in computer science develop competence in programming principles and methodologies, problem-solving techniques, mathematics, and computer systems. Computer science training is critical for many careers in science, engineering, business, and health care.

The informatics major combines fundamental and practical computing knowledge with a choice of cognate areas from the liberal arts and sciences, providing students with the necessary background and specialized skills to work at the interface of computing and another discipline. Informatics students may begin the major without a chosen cognate area; they may declare a cognate at any time. Some cognates are available only with the Bachelor of Arts, others are available only with the Bachelor of Science. So a student’s choice of cognate determines whether he or she will earn a B.A. or a B.S.

Both computer science and informatics majors are advised at the Academic Advising Center until they have completed 24 s.h., at which point they are assigned a departmental advisor. Students being advised at the Academic Advising Center also can consult with a computer science or informatics faculty advisor.

Transfer students who have taken a course approved as equivalent to a required computer science or informatics course are exempt from that course. Transfer course grades are included in the computer science or informatics grade-point average.

Students should consult the Department of Computer Science web site or visit the department’s office for information about general policies, elective areas, and internships, scholarships, and student groups, such as the University’s chapter of the Association for Computing Machinery (ACM) and Women in Informatics and Computer Science (WICS).

ADVANCED PLACEMENT
The Computer Science Advanced Placement Program test may be used to satisfy requirements. See the Advanced Placement link under Undergraduate Programs on the Department of Computer Science web site.

JOINT BACHELOR’S/MASTER’S DEGREE PROGRAMS
Qualified computer science undergraduate students who plan to earn the Master of Computer Science degree may apply for the joint Bachelor of Arts/Master of Computer Science program or the joint Bachelor of Science/Master of Computer Science program. The joint programs allow students to earn both degrees in five years. See ”Joint B.A./M.C.S. and B.S./M.C.S.” later in this section.

EARLY ADMISSION TO THE GRADUATE COLLEGE
Undergraduate computer science or informatics students who have 6 s.h. or less to earn toward graduation may apply for early admission to the Graduate College. Early admission allows students in their final undergraduate semester to take courses for graduate credit in addition to the courses they need to complete their bachelor’s degrees.

B.A. and B.S.: Computer Science
The Bachelor of Arts with a major in computer science requires a minimum of 120 s.h., including at least 41 s.h. of work for the major. The Bachelor of Science with a major in computer science requires a minimum of 120 s.h., including at least 63 s.h. of work for the major. Students must maintain a g.p.a. of at least 2.00 in all courses for the major and in all UI courses for the major. They also must complete the College of Liberal Arts and Sciences General Education Program (p. 313). A cumulative g.p.a. of at least 2.00 is required for graduation.

The computer science major for the Bachelor of Arts is designed for students who would like to gain considerable knowledge in computer science and have flexibility in choosing electives. Students preparing for careers in the computing field are encouraged to supplement the base requirements with additional computer science courses. The program’s flexibility makes it suitable for combination with other majors.

The computer science major for the Bachelor of Science is more rigorous than the B.A. major; it is designed to
provide in-depth training for students who would like to acquire strength in math and science in order to enhance their skills and job prospects. It also is appropriate for those who plan to pursue graduate work in computer science, although it is not required for graduate study at most universities.

Course work for the major includes computer science courses as well as courses in mathematics, statistics, and other supporting disciplines. Work for the major may not be taken pass/nonpass.

Bachelor of Science students and Bachelor of Arts students considering a switch to the B.S. program should choose their General Education Program’s Natural Sciences courses carefully, since they may be able to use the same courses to satisfy the Bachelor of Science major’s natural science requirement; see “Natural Science Sequences (B.S.)” under “Additional Bachelor of Science Requirements” below.

The major in computer science (B.A. and B.S.) requires the following work.

**Common Requirements (B.A. and B.S.)**

**COMPUTER SCIENCE CORE**

All of these:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS:1210</td>
<td>Computer Science I: Fundamentals</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>CS:2210</td>
<td>Discrete Structures</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>CS:2230</td>
<td>Computer Science II: Data Structures</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>CS:2820</td>
<td>Object-Oriented Software</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>CS:3330</td>
<td>Algorithms</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>CS:3820</td>
<td>Programming Language Concepts</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

One of these:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS:2630</td>
<td>Computer Organization</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ECE:3350</td>
<td>Computer Architecture and Organization</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

One of these:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS:3620</td>
<td>Operating Systems</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>CS:3640</td>
<td>Introduction to Networks and Their Applications</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>CS:4640</td>
<td>Computer Security</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

**MATHEMATICS CORE**

Calculus I—one of these:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH:1550</td>
<td>Engineering Mathematics I: Single Variable Calculus</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>MATH:1850</td>
<td>Calculus I</td>
<td>4 s.h.</td>
</tr>
</tbody>
</table>

Calculus II—one of these:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH:1560</td>
<td>Engineering Mathematics II: Multivariable Calculus</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>MATH:1860</td>
<td>Calculus II</td>
<td>4 s.h.</td>
</tr>
</tbody>
</table>

**Additional Bachelor of Arts Requirements**

**MATHEMATICS CORE (B.A.)**

Linear algebra/probability and statistics—one of these:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH:2700</td>
<td>Introduction to Linear Algebra</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>STAT:2020</td>
<td>Probability and Statistics for the Engineering and Physical Sciences</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>STAT:3120</td>
<td>Probability and Statistics</td>
<td>4 s.h.</td>
</tr>
</tbody>
</table>

Students who take MATH:2550 Engineering Mathematics III: Matrix Algebra and MATH:2560 Engineering Mathematics IV: Differential Equations can use the courses to satisfy the linear algebra requirement.

**ADVANCED COMPUTER SCIENCE ELECTIVES (B.A.)**

Bachelor of Arts students must earn at least 3 s.h. in advanced computer science electives chosen from these.

A computer science course (prefix CS) numbered 3620-5899, except CS:3910 and CS:3980

A computer science course (prefix CS) numbered 5900 or above, with department approval

Students may count a maximum of 3 s.h. earned in CS:3990 Honors in Computer Science or Informatics toward the advanced computer science elective requirement.

**Additional Bachelor of Science Requirements**

**MATHEMATICS CORE (B.S.)**

Linear algebra:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH:2700</td>
<td>Introduction to Linear Algebra</td>
<td>4 s.h.</td>
</tr>
</tbody>
</table>

Students who take MATH:2550 Engineering Mathematics III: Matrix Algebra and MATH:2560 Engineering Mathematics IV: Differential Equations can use the courses to satisfy the linear algebra requirement.

Probability and statistics—one of these:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>STAT:2020</td>
<td>Probability and Statistics for the Engineering and Physical Sciences</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>STAT:3120</td>
<td>Probability and Statistics</td>
<td>4 s.h.</td>
</tr>
</tbody>
</table>

Other probability and statistics courses (prefix STAT) with a calculus prerequisite may be approved by the department.

**COMPUTATION THEORY (B.S.)**

One of these:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS:4330</td>
<td>Theory of Computation</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>CS:4340</td>
<td>Limits of Computation</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>CS:4350</td>
<td>Logic in Computer Science</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

**ADVANCED TECHNICAL ELECTIVES (B.S.)**

Bachelor of Science students must earn at least 12 s.h. (four courses) in advanced technical electives, as follows. At least 6 s.h. from these:

A computer science course (prefix CS) numbered 3620-5899, except CS:3910 and CS:3980

A computer science course (prefix CS) numbered 5900 or above, with department approval

And:
Advanced technical electives in computer science (prefix CS), or in other disciplines with department approval, to complete the required 12 s.h.

An approved list of courses in other departments that satisfy this requirement can be found on the Computer Science web site under Major Requirements of the Undergraduate Programs.

Students may count a maximum of 3 s.h. earned in CS:3990 Honors in Computer Science or Informatics toward the advanced technical elective requirement.

**NATURAL SCIENCE SEQUENCES (B.S.)**

Bachelor of Science students take two or more courses in a sequence (totaling at least 6 s.h.) in a cognate area of natural science. The natural science sequence is intended to enhance the student’s perspective by providing a deeper understanding of the scientific method. Typically, it consists of a sequence of courses taken in the same science department. Students often choose sequences that also fulfill the General Education Program (p. 313) Natural Sciences requirement. Some possible choices are listed below; the department chair may approve others.

CLEP/APP credit may be used to satisfy part or all of the natural science requirement only if the appropriate science department at the University of Iowa accepts the credit as equivalent to one or more of the specific courses listed below.

Astronomy:
- ASTR:1771 General Astronomy I 4 s.h.
- ASTR:1772 General Astronomy II 4 s.h.

Biology:
- BIOL:1411-BIOL:1412 Foundations of Biology - Diversity of Form and Function 8 s.h.

Chemistry:
- CHEM:1110 Principles of Chemistry I 4 s.h.
- CHEM:1120 Principles of Chemistry II 4 s.h.

Earth and environmental sciences—this course:
- EES:1080 Introduction to Environmental Science 3-4 s.h.

And one of these:
- EES:1030 Introduction to Earth Science 3-4 s.h.
- EES:1050 Introduction to Geology 4 s.h.

Geographical and sustainability sciences:
- GEOG:1020 The Global Environment 3 s.h.
- GEOG:1050 Foundations of GIS 3 s.h.

Physics—one of these sequences:
- PHYS:1611-PHYS:1612 Introductory Physics I-II (recommended) 8 s.h.
- PHYS:1701-PHYS:1702 Physics I-II 8 s.h.

**B.A. and B.S.: Informatics**

The Bachelor of Arts with a major in informatics requires a minimum of 120 s.h., including at least 55-59 s.h. of work for the major. Students must maintain a g.p.a. of at least 2.00 in all courses for the major and in all UI courses for the major. They also must complete the College of Liberal Arts and Sciences General Education Program (p. 313). A cumulative g.p.a. of at least 2.00 is required for graduation.

Required credit for the major depends on the choice of cognate area. Work for the major may not be taken pass/nonpass.

Both programs (B.A. and B.S.) combine foundational informatics course work with course work in a cognate discipline. The Bachelor of Arts major in informatics offers the cognate areas of art, economics, geoinformatics, health informatics, human-computer interaction, linguistics, music, social informatics, and individualized cognates. The Bachelor of Science major in informatics offers the cognate areas of bioinformatics, medical informatics, and individualized cognates.

Course work for the major includes the informatics core, one (B.A.) or two (B.S.) electives, a statistics course, and a set of courses in their chosen cognate area. Students are expected to have taken MATH:1005 College Algebra or the equivalent.

The informatics major (B.A. and B.S.) requires the following course work.

**INFORMATICS CORE**

The informatics core consists of six required computing courses (at least 19 s.h.) that emphasize data manipulation, databases, and networking. It provides more applications-oriented content than the traditional computer science curriculum yet is designed to offer students a sound basis in underlying computer science themes and techniques.

This course:
- CS:2110 Programming for Informatics 4 s.h.

One of these:
- CS:2420 Databases for Informatics 3 s.h.
- MSCI:3200 Database Management 3 s.h.

All of these:
- CS:1110 Introduction to Computer Science 3 s.h.
- CS:2520 Human-Computer Interaction 3 s.h.
- CS:2620 Networking and Security for Informatics 3 s.h.
- CS:3910 Informatics Project 3 s.h.

**INFORMATICS ELECTIVES**

B.A. students must complete at least one course (3 s.h.) and B.S. students must complete at least two (6 s.h.) from a list of approved computing informatics electives. Course selection must be approved by an informatics advisor. In addition to the courses listed below, students may have additional choices from the Department of Electrical and Computer Engineering and the Department of Management Sciences; consult an informatics faculty advisor for additional choices.

- MSCI:4220 Database Management and Web Services 3 s.h.

A computer science course (prefix CS) numbered 3000-4990, except CS:3910
ARTH:1070 Asian Art and Culture 3 s.h.
ARTH:2020 Introduction to Western Architecture
ARTH:2220 Introduction to the Art of China 3 s.h.
ARTH:2250 Introduction to the Art of Japan 3 s.h.
ARTH:2320 Introduction to Ancient Art 3 s.h.
ARTH:2420 Introduction to Medieval Art 3 s.h.
ARTH:2520 Introduction to Italian Renaissance Art
ARTH:2620 Introduction to Baroque Visual Culture 3 s.h.
ARTH:2730 Introduction to Nineteenth-Century Art 3 s.h.
ARTH:2820 Introduction to Modern/Contemporary Art 3 s.h.
ARTH:2920 Introduction to American Art 3 s.h.
ARTH:2975 Undergraduate Seminar in the History of Art 3 s.h.

At least 6 s.h. from these, with at least one course (3 s.h.) numbered 3000 or above:

- DSGN:3110 Graphic Design II 4 s.h.
- DSGN:3130 Web Site Design I 3 s.h.
- DSGN:4130 Web Site Design II 4 s.h.
- PHTO:2513 Digital Photographic Imaging 3 s.h.
- PHTO:4555 Advanced Digital Imaging 4 s.h.
- TDSN:2240 Digital Drafting with AutoCAD 3 s.h.

**ECONOMICS**

The informatics major with the economics cognate requires a minimum of 49 s.h. of work for the major, including 24 s.h. in cognate courses, which are primarily from economics. The economics cognate is intended for students interested in working with economic, financial, or demographic data. It may lead to careers in administration, business, or government or to graduate study in management or policy areas.

At least two of these, to complete 24 s.h. for the cognate:

- ECON:3250 American Economic History 3 s.h.
- ECON:3255 Personnel Economics 3 s.h.
- ECON:3335 Money, Banking, and Financial Markets 3 s.h.
- ECON:3345 Global Economics and Business 3 s.h.
- ECON:3350 Industry Analysis 3 s.h.
- ECON:3370 Household Finance 3 s.h.
- ECON:3620 Economic Growth and Development 3 s.h.
- ECON:3625 Environmental and Natural Resource Economics 3 s.h.
- ECON:3640 Regional and Urban Economics 3 s.h.
- ECON:3650 Policy Analysis 3 s.h.
- ECON:3690 Sports Economics 3 s.h.
ECON:3750 Transportation Economics 3 s.h.
ECON:3760 Health Economics 3 s.h.
ECON:3790 Antitrust Economics 3 s.h.
ECON:3800 Law and Economics 3 s.h.
ECON:3875 Topics in Policy Economics arr.
ECON:4090 Natural Resource Economics 3 s.h.
ECON:4110 International Economics 3 s.h.
ECON:4140 Labor Economics 3 s.h.
ECON:4160 Public Sector Economics 3 s.h.
ECON:4170 Monetary Economics 3 s.h.
ECON:4180 Industrial Organization 3 s.h.
ECON:4190 Mathematical Economics 3 s.h.
ECON:4700 Topics in Analytical Economics arr.
ECON:4800 Introduction to Econometrics 3 s.h.

GEOINFORMATICS

The informatics major with the geoinformatics cognate requires a minimum of 47 s.h. of work for the major, including 22 s.h. in cognate courses, which are primarily from geographical and sustainability sciences. The geoinformatics cognate is intended for students interested in geographic information systems (GIS) and spatial aspects of data. It may lead to careers in business, government, or public health or to graduate study in geography, public health, or policy areas.

All of these:

GEOG:1020 The Global Environment 3 s.h.
GEOG:1021 The Global Environment Lab 1 s.h.
GEOG:1050 Foundations of GIS 3 s.h.

Two of these:

GEOG:1010 Introduction to Human Geography 3 s.h.
GEOG:1070 Contemporary Environmental Issues 3 s.h.
GEOG:2110 Population Geography: Societies in Flux 3 s.h.
GEOG:2130 World Cities 3 s.h.
GEOG:2910 The Global Economy 3 s.h.

One of these:

GEOG:3520 GIS for Environmental Studies 3 s.h.
GEOG:3530 Mapping American Cities and Regions 3 s.h.
GEOG:4010 Field Methods in Physical Geography 3 s.h.
GEOG:4020 Field Methods: Mapping and Mobile Computing 3 s.h.

Two of these:

GEOG:3500 Introduction to Environmental Remote Sensing 3 s.h.
GEOG:3520 GIS for Environmental Studies 3 s.h.
GEOG:3530 Mapping American Cities and Regions 3 s.h.
GEOG:3920 Planning Livable Cities 3 s.h.
GEOG:4150 Health and Environment: GIS Applications 3 s.h.
GEOG:4500 Applications in Environmental Remote Sensing 4 s.h.
GEOG:4520 GIS for Environmental Studies: Applications 3 s.h.
GEOG:4570 Spatial Analysis and Location Models 3 s.h.
GEOG:4750 Environmental Impact Analysis 4 s.h.

HEALTH INFORMATICS

The informatics major with the health informatics cognate requires a minimum of 46 s.h. of work for the major, including 21 s.h. in cognate courses. The health informatics cognate is intended for students interested in applications of computing to health care, especially in public health. It may lead to careers in medical or health-related areas or to graduate and professional degree programs in public health, health informatics, and medical informatics. Cognate courses are selected primarily from public health, geography, and global health studies.

Once students complete the required courses in each of the four sets below, they must select additional courses from the sets to complete 21 s.h. of credit for the cognate.

One of these:

GHS:3720 Global Health Seminar 3 s.h.
MPH:2099 Fundamentals of Public Health 3 s.h.

At least two of these:

GEOG:1050 Foundations of GIS 3 s.h.
GEOG:3110 Geography of Health 3 s.h.
GEOG:3210 Health, Work, and the Environment 3 s.h.
GEOG:3520 GIS for Environmental Studies 3 s.h.
GEOG:4150 Health and Environment: GIS Applications 3 s.h.

At least two of these:

GHS:3850 Promoting Health Globally 3 s.h.
GHS:4160 History of Public Health 3 s.h.
GHS:4162 History of Global Health 3 s.h.
GHS:4340 Global Health and Global Food 3 s.h.
GHS:4600 Global Health and Human Rights 2-3 s.h.
INTD:3020 Equity Issues in the Health Sciences 3 s.h.
RHET:3610 Writing in the Presence of Death: Rhetoric, Narrative, and Hospice 3 s.h.

One of these:

EPID:4400 Epidemiology I: Principles 3 s.h.
HMP:4000 Introduction to the U.S. Health Care System 3 s.h.

HUMAN-COMPUTER INTERACTION

The informatics major with the human-computer interaction cognate requires a minimum of 43 s.h. of work for the major, including at least 18 s.h. in cognate courses. The human-computer interaction cognate is intended for students interested in designing useful and usable technologies. It can lead to careers in interaction design, web design, implementation of user interfaces, and evaluation of human-computer interactions as well as provide valuable skills for graduate study in human-computer interaction.

The cognate’s courses are drawn largely from psychology, sociology, and industrial engineering. Four required
courses include foundational aspects of psychology or sociology, an examination of basic human abilities and performance relevant to information technology use, and an introduction to research topics in human-computer interaction.

This course:

CS:4500 Research Methods in Human-Computer Interaction 3 s.h.

Either these three psychology courses:

PSY:1001 Elementary Psychology 3 s.h.
PSY:2601 Introduction to Cognitive Psychology 3 s.h.
PSY:2810 Research Methods in Psychology 4 s.h.

Or these three sociology courses:

SOC:1010 Introduction to Sociology 3-4 s.h.
SOC:2130 Sociological Theory 3 s.h.
SOC:2170 Research Methods 3 s.h.

At least two of these for the cognate:

IE:3400 Human Factors 3 s.h.
IE:3450 Ergonomics 3 s.h.
PSY:2401 Introduction to Developmental Science 3 s.h.
PSY:2501 Introduction to Social Psychology 3 s.h.
PSY:2701 Biological Psychology 4 s.h.
PSY:3040 Psychology of Learning 3 s.h.
PSY:3060 Visual Perception and Cognition 3 s.h.
SOC:2220 Principles of Social Psychology 3-4 s.h.
SOC:4210 Small Group Analysis 3 s.h.

Most courses in this list have prerequisites, which students must complete before they may register for the course. The psychology courses (prefix PSY) require PSY:1001 Elementary Psychology and/or PSY:2701 Biological Psychology as prerequisite(s); the sociology course SOC:4210 requires SOC:1010 Introduction to Sociology or SOC:1020 Social Problems as a prerequisite. Students should choose courses from this list carefully.

LINGUISTICS

The informatics major with the linguistics cognate requires a minimum of 46 s.h. of work for the major, including at least 21 s.h. in cognate courses. Linguistics, the scientific study of human languages, is directly related to psychology, anthropology, and computer science as well as to more applied fields such as second language acquisition or speech and hearing science. The cognate focuses on computational representations of syntax and semantics for processing natural language. Cognate courses are drawn primarily from linguistics.

All of these:

LING:3001 Introduction to Linguistics 3 s.h.
LING:3005 Articulatory and Acoustic Phonetics 3 s.h.
LING:3010 Syntactic Analysis 3 s.h.
LING:3020 Phonological Analysis 3 s.h.
LING:3080 History of the English Language 3 s.h.

One of these:

CS:4440 Web Mining 3 s.h.
CS:4460 Introduction to Computational Linguistics 3 s.h.

One of these:

CLSA:2901/SOAS:2901 First-Year Sanskrit: First Semester 4 s.h.
CLSA:2902/SOAS:2902 First-Year Sanskrit: Second Semester 4 s.h.
CLSA:3901/SOAS:3901 Second-Year Sanskrit: First Semester 3 s.h.
CLSA:3902/SOAS:3902 Second-Year Sanskrit: Second Semester 3 s.h.
CLSG:1001 Classical and New Testament Greek I 5 s.h.
CLSG:1002 Classical and New Testament Greek II 5 s.h.
CLSG:2001 Second-Year Greek I 3 s.h.
CLSG:2002 Second-Year Greek II 3 s.h.
CLSL:1001 Elementary Latin I 5 s.h.
CLSL:1002 Elementary Latin II 5 s.h.
CLSL:2001 World of Cicero 3 s.h.
CLSL:2002 Golden Age of Roman Poetry 3 s.h.
ENGL:3256 Elementary Old English 3 s.h.
ENGL:3257 Old English Beowulf 3 s.h.

MUSIC

The informatics major with the music cognate requires a minimum of 48 s.h. of work for the major, including 23 s.h. in cognate courses. The music cognate is intended for students interested in audio recording, manipulation of sound, and digital media. It may help students prepare for careers in the entertainment industry. Cognate courses are primarily from music, with some from cinematic arts and theatre arts. Entering students must possess basic musicianship skills; an audition may be required for admission.

All of these:

MUS:1200 Fundamentals of Music for Majors 3 s.h.
MUS:1201 Musicianship and Theory I 4 s.h.
MUS:1202 Musicianship and Theory II 4 s.h.
MUS:1211 Group Instruction in Piano I 1 s.h.
MUS:1212 Group Instruction in Piano II 1 s.h.
MUS:3780 Audio Recording I 3 s.h.
MUS:3781 Audio Recording II 3 s.h.

Students who plan to take MUS:1201 Musicianship and Theory I or MUS:1202 Musicianship and Theory II must take the music theory diagnostic examination, which is administered online during summer, before fall semester begins. See Musicianship and Theory Placement on the School of Music web site for more information. Advanced placement in School of Music courses does not reduce the number of semester hours required for the cognate.

All of these:

MUS:1310 World Music 3 s.h.
MUS:1720 History of Jazz 3 s.h.
MUS:2301 History of Music I 3 s.h.
MUS:2302 History of Music II 3 s.h.
MUS:2311 Music of Latin America and the Caribbean 3 s.h.

At least one of these, to complete 23 s.h. for the cognate:
CINE:1630 Introduction to Film Sound 3 s.h.
CINE:4841 Film/Video Production: Sound Design 4 s.h.
MUS:1007 Garage Band: The Basics 2 s.h.
MUS:1010 Recital Attendance for Non-Majors 1 s.h.
THTR:3260 Sound Design for the Theatre 3 s.h.

SOCIAL INFORMATICS

The informatics major with the social informatics cognate requires a minimum of 45 s.h. of work for the major, including 20 s.h. in cognate courses, all from sociology.

All of these:
SOC:1010 Introduction to Sociology 3-4 s.h.
SOC:2130 Sociological Theory 3 s.h.
SOC:2170 Research Methods 3 s.h.

At least 11 s.h. from these:
SOC:1020 Social Problems 3-4 s.h.
SOC:1310 Gender and Society 3-4 s.h.
SOC:1410 Introduction to Criminology 3 s.h.
SOC:2220 Principles of Social Psychology 3-4 s.h.
SOC:2222 Introduction to Social Work 4 s.h.
SOC:2426 Deviance and Control 3 s.h.
SOC:2810 Social Inequality 3 s.h.
SOC:3220 Sociology of Mental Illness 3 s.h.
SOC:3420 Juvenile Delinquency 3 s.h.
SOC:3450 Criminal Legal System 3 s.h.
SOC:3520 Political Sociology 3 s.h.
SOC:3525 Public Opinion 3 s.h.
SOC:3610 Organizations and Modern Society 3 s.h.
SOC:3710 The American Family 3 s.h.
SOC:3830 Race and Ethnicity 3 s.h.
SOC:3840 Community and Urban Sociology 3 s.h.
SOC:3850 Economy and Society 3 s.h.
SOC:4210 Small Group Analysis 3 s.h.
SOC:4400 Internship in Criminal Justice and Corrections 1-5 s.h.
SOC:4420 Criminal Punishment 3 s.h.
SOC:4460 Sociology of Law 3 s.h.
SOC:4540 Political Sociology and Social Movements 3 s.h.
SOC:4820 Sociology of Sexuality 3 s.h.
SOC:4900 Selected Topics in Sociology 3 s.h.
SOC:4910 Capstone Course in Sociology 3 s.h.
SOC:4920 Social Services Organization Internship arr.
SOC:4997 Honors Seminar 2 s.h.
SOC:4998 Honors Research arr.

INDIVIDUALIZED COGNATES

Students interested in developing individualized cognates may work with an informatics faculty advisor. Individualized cognates may be drawn primarily from one department or an appropriate mix of departments. For the Bachelor of Arts, individualized cognates require an approved set of cognate courses totaling 18-25 s.h.

Bachelor of Science Cognates

Students must complete all requirements listed under one of the cognate areas below: bioinformatics, medical informatics, or an individualized cognate.

BIOINFORMATICS

The informatics major with the bioinformatics cognate requires a minimum of 58 s.h. of work for the major, including at least 30 s.h. in cognate courses. The bioinformatics cognate is intended for students interested in applications of computing to the biological sciences. It may lead to careers in laboratory research, biotechnology, data management, and other related areas. It also may prepare students for graduate programs in bioinformatics or genetics. The cognate offers a choice of two areas: genome bioinformatics, or phylogenics and evolution. Cognate courses are drawn primarily from biology and chemistry.

All of these:
BIOL:1411-BIOL:1412 Foundations of Biology - Diversity of Form and Function 8 s.h.
CHEM:1110 & CHEM:1120 Principles of Chemistry I-II 8 s.h.
CHEM:2210 Organic Chemistry I 3 s.h.

Students also must complete required courses in one of the following two areas—genome bioinformatics or phylogenetics and evolution.

Genome Bioinformatics Area

Both of these:
BIOL:2512 Fundamental Genetics 4 s.h.
BIOL:3172 Evolution 4 s.h.

One of these:
BIOL:3314 Genomics 3 s.h.
BIOL:4213 Bioinformatics 4 s.h.
BIOL:5320 Computational Genomics 3 s.h.

Phylogenetics and Evolution Area

Both of these:
BIOL:2512 Fundamental Genetics 4 s.h.
BIOL:3172 Evolution 4 s.h.

One of these:
BIOL:2673 Ecology 4 s.h.
BIOL:4273 Population Genetics and Molecular Evolution 3 s.h.
BIOL:4373 Molecular Phylogenetics 3 s.h.

MEDICAL INFORMATICS

The informatics major with the medical informatics cognate requires a minimum of 56 s.h. of work for the major, including at least 28 s.h. in cognate courses. The medical informatics cognate is intended for students interested in applications of computing to health care, especially in a clinical setting. It may lead to careers in medical or hospital settings, graduate programs in medical informatics, or professional degree programs in medicine, dentistry, nursing, or other allied health professions.
Cognate courses are drawn from biology, chemistry, health and human physiology, and public health.

Students who choose the medical informatics cognate must satisfy the major's statistics requirement with STAT:3510 Biostatistics.

All of these:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL:1411-BIOL:1412 Foundations of Biology - Diversity of Form and Function</td>
<td>8 s.h.</td>
</tr>
<tr>
<td>CHEM:1110 &amp; CHEM:1120 Principles of Chemistry I-II</td>
<td>8 s.h.</td>
</tr>
<tr>
<td>CHEM:2210 &amp; CHEM:2220 Organic Chemistry I-II</td>
<td>6 s.h.</td>
</tr>
</tbody>
</table>

At least two of these, to complete 28 s.h. in the cognate:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL:2512 Fundamental Genetics</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>BIOL:3172 Evolution</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>CHEM:2410 Organic Chemistry Laboratory</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>HHP:1100 Human Anatomy</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>HMP:4000 Introduction to the U.S. Health Care System</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

**INDIVIDUALIZED COGNATES**

Individualized cognates may be drawn primarily from one department or an approved mix of departments. For the Bachelor of Science, individualized cognates require an approved set of cognate courses totaling 27-31 s.h. Students interested in developing individualized cognates should contact the Department of Computer Science for the name of an informatics faculty advisor.

**Four-Year Graduation Plan**

The Four-Year Graduation Plan is not available to students majoring in computer science or informatics. Students work with their advisors on individual graduation plans.

**Honors in the Major**

Students majoring in computer science or informatics have the opportunity to graduate with honors in the major. To graduate with honors in either major, students must complete 4-6 s.h. of CS:3990 Honors in Computer Science or Informatics and submit an acceptable honors thesis. Students are responsible for finding a faculty member willing to supervise their honors project. The faculty member must approve the proposed project and a timetable for the work. Students register for CS:3990 Honors in Computer Science or Informatics with the thesis supervisor's instructor number. See Honors on the department's web site for details.

Honors students majoring in computer science may count a maximum of 3 s.h. of CS:3990 Honors in Computer Science or Informatics toward the major's advanced computer science elective requirement (B.A.) or advanced technical elective requirement (B.S.). Students in the joint B.A./M.C.S. or B.S./M.C.S. program may register for 4-6 s.h. of CS:5990 Individualized Research or Programming Project instead of CS:3990; this will allow them to receive graduate credit for the course while satisfying the course requirements to graduate with honors.

Departmental honors students must be members of the University of Iowa Honors Program, which requires students to maintain a cumulative University of Iowa g.p.a. of at least 3.33 and to fulfill other requirements; visit Honors at Iowa to learn about the University's honors program.

**Minor: Computer Science**

The minor in computer science requires a minimum of 17 s.h. in computer science, including 12 s.h. in courses taken at the University of Iowa. Students must maintain a g.p.a. of at least 2.00 in all courses for the minor and in all UI courses for the minor. Course work in the minor may not be taken pass/nonpass. Students excused from courses required for the minor may substitute other computer science electives. The minor requires the following courses.

All of these:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS:1210 Computer Science I: Fundamentals</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>CS:2210 Discrete Structures</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>CS:2230 Computer Science II: Data Structures</td>
<td>4 s.h.</td>
</tr>
</tbody>
</table>

At least one of these:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS:2630 Computer Organization</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>CS:2820 Object-Oriented Software</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>Development</td>
<td></td>
</tr>
<tr>
<td>CS:3330 Algorithms</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

Students choose one additional computer science course (prefix CS) numbered 3200-5890, except CS:3910 Informatics Project and CS:3980 Topics in Computer Science I, to complete the 17 s.h. required for the minor.

Students who have completed ENGR:1300 Engineering Problem Solving II and ENGR:2730 Computers in Engineering are considered to have satisfied the minor's requirement for CS:1210 Computer Science I: Fundamentals.

Students who have completed ENGR:2730 Computers in Engineering and ECE:3330 Introduction to Software Design are considered to have satisfied the minor’s requirement for CS:2820 Object-Oriented Software Development.

Students may declare the computer science minor on ISIS, and they may request an audit for the minor through ISIS.

**Minor: Informatics**

The minor in informatics requires a minimum of 16 s.h., including at least 12 s.h. in courses taken at the University of Iowa. Students must maintain a g.p.a. of at least 2.00 in all courses for the minor and in all UI courses for the minor. Course work in the minor may not be taken pass/nonpass.

Students earning a major in computer science or in management information systems (Tippie College of Business) may not earn the minor in informatics.

The informatics minor requires the following course work.

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS:1110 Introduction to Computer Science</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>CS:2110 Programming for Informatics</td>
<td>4 s.h.</td>
</tr>
</tbody>
</table>

One of these:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS:2420 Databases for Informatics</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>MSCI:3200 Database Management</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

One of these:
Applicants to the joint program must:

- complete the joint program comfortably in one year after their third year as undergraduates and enter the program
- apply for admission to the joint program during their third year as undergraduates
- be enrolled as B.A. or B.S. students majoring in computer science at the University of Iowa; and
- have completed a minimum of 80 s.h. at the time of admission to the joint program, with at least 30 s.h. earned at the University of Iowa; and
- have a cumulative University of Iowa g.p.a. of at least 3.25 and a g.p.a. of at least 3.25 in the computer science major (computed on math prerequisites and core computer science course work taken at the University of Iowa).

Admission decisions are based on prior academic performance, letters of reference, the applicant’s statement about background and purpose, and for Ph.D. applicants, scores on the Graduate Record Examination (GRE) General Test. Students need not have a master's degree to begin the Ph.D. program or to be granted the doctoral degree. A student admitted without a master's degree may choose to be granted an M.S. or the M.C.S.

Applicants must meet the admission requirements of the Graduate College; see the Manual of Rules and Regulations of the Graduate College.

Current and prospective graduate students should consult the Computer Science Graduate Handbook, available from the department's office and its web site. The handbook provides detailed information about specific degree requirements, such as required courses, examinations, and dissertation requirements. For general information about the department, faculty, and research activities, contact the Department of Computer Science or visit its web site.

The Certificate in Large Data Analysis (p. 445) can be earned in addition to a B.A. or B.S. degree in computer science. The certificate focuses on handling, processing, and extracting information from large data sets. As computers have become faster and smaller, more applications, can be gathered and used for a large range of applications, such as for weather forecasting; identifying people and trends utilizing Facebook or other social media; understanding the genome; and searching for disease causes and cures, as well as many other areas of study.

Graduate Programs of Study

- Master of Computer Science
- Master of Science in computer science
- Doctor of Philosophy in computer science

The Master of Computer Science (M.C.S.) is a course-based, nonresearch program for students who wish to enhance their careers with advanced knowledge of computer science. The Doctor of Philosophy program emphasizes preparation for research and teaching in academic settings or for research in private, industrial, or government laboratories. The Master of Science is granted only to students working toward the Ph.D. in computer science.
24 s.h. earned at the University of Iowa. Basic M.C.S. requirements are as follows. Consult the Computer Science Graduate Handbook for detailed information about M.C.S. requirements and graduate study policies.

**FOUNDATIONS**

One of these:
- CS:4330 Theory of Computation 3 s.h.
- CS:4340 Limits of Computation 3 s.h.
- CS:5350 Design and Analysis of Algorithms 3 s.h.

**SYSTEMS**

One of these:
- CS:5610 High Performance Computer Architecture 3 s.h.
- CS:5620 Distributed Systems and Algorithms 3 s.h.
- CS:5810 Formal Methods in Software Engineering 3 s.h.
- CS:5850 Programming Language Foundations 3 s.h.

**COLLOQUIUM**

M.C.S. students must earn at least 2 s.h. in the following.
- CS:6000 Research Seminar: Colloquium Series 2 s.h. (must enroll at least twice for 1 s.h. each)

**ELECTIVES**

M.C.S. students complete the remaining 24 s.h. with a combination of computer science graduate courses, reading and project courses, and non-computer science graduate courses approved by their advisor. They must complete at least six computer science graduate courses (18 s.h.) numbered 4000 or above, which may not include the following courses:
- CS:5990 Individualized Research or Programming Project
- CS:6000 Research Seminar: Colloquium Series
- CS:6990 Readings for Research, and

The remaining 6 s.h. of electives may include technical or quantitative graduate courses outside of computer science, with the advisor’s approval. Students also may include up to 3 s.h. earned in independent study courses (CS:5990 Individualized Research or Programming Project or CS:6990 Readings for Research).

**Master of Science**

The Master of Science in computer science is offered only to students working toward the Ph.D. in computer science. Students who are interested primarily in a master’s degree and who do not intend to pursue a more advanced degree should apply to the M.C.S. program.

**Doctor of Philosophy**

The Doctor of Philosophy program in computer science requires a minimum of 72 s.h. of graduate credit, three examinations (qualifying, comprehensive, and final), and a written dissertation. Basic Ph.D. requirements are as follows. Consult the Computer Science Graduate Handbook for detailed information about Ph.D. requirements and graduate study policies.

**CORE REQUIREMENT**

Both of these:
- CS:4330 Theory of Computation 3 s.h.
- CS:5350 Design and Analysis of Algorithms 3 s.h.

**BREADTH**

Ph.D. students must complete at least three of the following courses, with at least one course selected from each area (9 s.h.).

Systems and software:
- CS:4640 Computer Security 3 s.h.
- CS:4980 Topics in Computer Science II (section approved by advisor) 3 s.h.
- CS:5610 High Performance Computer Architecture 3 s.h.

Networks and distributed systems:
- CS:4980 Topics in Computer Science II (section approved by advisor) 3 s.h.
- CS:5620 Distributed Systems and Algorithms 3 s.h.

Programming languages and compilers:
- CS:4980 Topics in Computer Science II (section approved by advisor) 3 s.h.
- CS:5810 Formal Methods in Software Engineering 3 s.h.
- CS:5850 Programming Language Foundations 3 s.h.

**PRACTICE**

Ph.D. students must complete at least one course (3 s.h.) with significant practical or implementation-oriented content. Each semester the department designates courses that satisfy this requirement. The following are typical selections.
- CS:4400 Database Systems 3 s.h.
- CS:4420 Artificial Intelligence 3 s.h.
- CS:4440 Web Mining 3 s.h.
- CS:4460 Introduction to Computational Linguistics 3 s.h.
- CS:4520 Computer Graphics 3 s.h.
- CS:4700 High Performance and Parallel Computing 3 s.h.
- CS:4720 Optimization Techniques 3 s.h.
- CS:4980 Topics in Computer Science II (section approved by advisor) 3 s.h.
- CS:5520 Advanced Computer Graphics 3 s.h.
- CS:5800 Fundamentals of Software Engineering 3 s.h.
- CS:5990 Individualized Research or Programming Project 3 s.h.

**COGNATE AREA**

Ph.D. students are required to select, in consultation with their advisor, graduate course work totaling 9 s.h. that constitutes coherent coverage of an external cognate area; the courses need not be offered by the same department. Choices include, but are not limited to, mathematics, statistics, genetics, biology, and engineering disciplines.
COLLOQUIUM
Ph.D. students must earn at least 4 s.h. in the following.

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS:6000 Research Seminar: Colloquium Series</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>(must enroll at least four times for 1 s.h. each)</td>
<td></td>
</tr>
</tbody>
</table>

ELECTIVES
Ph.D. students fill their remaining semester hours with a selection of computer science graduate courses numbered 4000 or above and graduate courses outside of computer science, approved by their advisor.

QUALIFYING EXAM
Ph.D. students are required to pass a qualifying examination by the end of their second year of graduate study. Once students select a topic in consultation with their advisor, they are assigned a three-member faculty examination panel by the department. Then they prepare a written prospectus for review by the committee, followed by an oral presentation.

COMPREHENSIVE EXAM
The comprehensive examination is an evaluation of a student's mastery of a research area near completion of formal course work, and before preparation of the dissertation. The exam may be written, oral, or both, at the department's discretion, and is administered by a faculty committee. The comprehensive exam typically should be completed by the end of a student's third year and no later than the end of the fourth year in the Ph.D. program.

DISSERATION
Each Ph.D. student must write a dissertation, a significant, original contribution to the field of computer science. Once students obtain some preliminary results and can identify and describe the boundaries of their dissertation, they prepare a written proposal for their committee's review. The dissertation must be prepared in accordance with the format specified in the Graduate College Thesis Manual.

FINAL ORAL EXAMINATION
Once the dissertation is complete and has been reviewed by the student's committee, a final oral examination is administered on campus. This examination must take place no sooner than the semester following successful completion of the comprehensive examination and no later than five years after completion of the comprehensive exam.

Courses
Lower-Level Undergraduate

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS:1000 First-Year Seminar</td>
<td>1 s.h.</td>
</tr>
<tr>
<td>Small discussion class taught by a faculty member; topics chosen by instructor; may include outside activities (e.g., films, lectures, performances, readings, visits to research facilities). Requirements: first- or second-semester standing.</td>
<td></td>
</tr>
<tr>
<td>CS:1001 CLAS Master Class</td>
<td>1-3 s.h.</td>
</tr>
<tr>
<td>Exploration of a single topic in a series of lectures by faculty presenting divergent perspectives; illuminates intellectual adventure inherent in liberal arts and sciences; encourages discovery of majors and other areas of study within the College of Liberal Arts and Sciences. Same as CLAS:1001, RELS:1010, THTR:1001, CSD:1001, PHIL:1001, ENGL:1001, BIOC:1001, ARTS:1001.</td>
<td></td>
</tr>
<tr>
<td>CS:1020 Principles of Computing</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>Introduction to computing; broad overview of discipline; necessary skills and concepts for effective application of computing resources in student's profession. Recommendations: No credit for students who have completed a higher-numbered CS course. GE: Quantitative or Formal Reasoning.</td>
<td></td>
</tr>
<tr>
<td>CS:1110 Introduction to Computer Science</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>Introduction to computer science and the study of algorithms; foundational ideas, computer organization, software concepts (e.g., networking, databases, security); programming concepts using Python. Recommendations: closed to students who have completed CS:2230 or a higher-numbered computer science course. GE: Quantitative or Formal Reasoning.</td>
<td></td>
</tr>
<tr>
<td>CS:1210 Computer Science I: Fundamentals</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>Introduction to programming using Python; programming constructs, data types, problem-solving strategies, data structures, object-oriented programming. Requirements: MATH:1020 or MATH:1340 or MATH:1440 or math placement to a calculus course. GE: Quantitative or Formal Reasoning.</td>
<td></td>
</tr>
<tr>
<td>CS:2110 Programming for Informatics</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>Computing fundamentals for informatics students, including practical programming skills (e.g., in Perl, other scripting languages) and introduction to algorithms, data structures, databases. Prerequisites: CS:1110. Corequisites: MATH:1020 or MATH:1340 or MATH:1440, if not taken as a prerequisite.</td>
<td></td>
</tr>
<tr>
<td>CS:2111 Programming Practice</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>Review of introductory Python programming concepts taught in CS:1210 and CS:2110; enhance mastery of introductory programming. Prerequisites: CS:1210 or CS:2110.</td>
<td></td>
</tr>
<tr>
<td>CS:2210 Discrete Structures</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>Mathematical methods used in computer science, including logic, proof techniques (with induction), functions, relations, algorithm analysis, recurrence relations, counting methods, combinatorics, graphs, trees. Corequisites: CS:1210, if not taken as a prerequisite. Recommendations: calculus I.</td>
<td></td>
</tr>
<tr>
<td>CS:2230 Computer Science II: Data Structures</td>
<td>4 s.h.</td>
</tr>
</tbody>
</table>
Design, implementation, and application of data structures (e.g., linked lists, stacks, queues, hash tables, trees); complexity analysis; recursion; introduction to object-oriented programming concepts; abstract data types and their realization using generic interfaces and classes; software design patterns (e.g., iterators, comparators). Prerequisites: CS:1210 or ENGR:2730. Corequisites: CS:2210, if not taken as a prerequisite.

CS:2420 Databases for Informatics 3 s.h.
Design and implementation of relational database systems: introduction to the relational model, database design, database normalization, use of database query and manipulation languages such as SQL. Prerequisites: CS:2110.

CS:2520 Human-Computer Interaction 3 s.h.
Basic theories, principles, and guidelines for design and evaluation of human-computer interactions; design methodologies (e.g., participatory design, low- and high-fidelity prototyping), user interface technologies (e.g., input and output devices, interaction styles), quantitative and qualitative evaluation of user interfaces (e.g., expert reviews, usability testing). Corequisites: CS:2110, if not taken as a prerequisite.

CS:2620 Networking and Security for Informatics 3 s.h.
Introduction to computer networking, overview of network organization and management; basic understanding of encryption and network security; practical experience in network programming. Prerequisites: CS:2110.

CS:2630 Computer Organization 3 s.h.
Computer building blocks: representing data, computer arithmetic, instruction sets, assembly language, digital logic, control units, ALU design, register operations, memory organization, IO. Prerequisites: CS:2230.

CS:2820 Object-Oriented Software Development 4 s.h.
Object-oriented design and software development methodology; team programming projects; GUIs, event handling, network programming, concurrency, data representation, IO programming. Prerequisites: CS:2230.

Upper-Level Undergraduate and Graduate

CS:3110 Introduction to Informatics 3 s.h.
Fundamentals of computer science: algorithms, complexity, relational databases, systems concepts, programming in Python. Requirements: CS:1110 or graduate standing. Same as IGPI:3110.

CS:3210 Programming Languages and Tools arr.
Varied programming languages and tools. Prerequisites: CS:1210 or CS:2110 or CS:3110.

CS:3330 Algorithms 3 s.h.
Algorithm design techniques (e.g., greedy algorithms, divide-and-conquer, dynamic programming, randomization); fundamental algorithms (e.g., basic graph algorithms); techniques for efficiency analysis; computational intractability and NP-completeness. Prerequisites: CS:2230 and (MATH:1550 or MATH:1850).

CS:3620 Operating Systems 3 s.h.
Introduction to modern operating systems, including device control, memory management and addressing, process scheduling, interprocess communication, interrupts, synchronization, security. Prerequisites: CS:2630.

CS:3640 Introduction to Networks and Their Applications 3 s.h.
Introduction to networks and the development of network applications; basic concepts of network communication common to applications such as simulation and web services. Prerequisites: CS:2630.

CS:3700 Elementary Numerical Analysis 3 s.h.
Computer arithmetic, root finding, polynomial approximation, numerical integration, systems of linear equations, ordinary differential equations; use of higher-level computer language such as Matlab, Maple, Mathematica. Prerequisites: MATH:1560 or MATH:1860. Same as MATH:3800.

CS:3820 Programming Language Concepts 3 s.h.
Imperative, functional, and logical programming languages, and differences between them; syntax specification, types, control structures, recursion, data abstraction. Prerequisites: CS:2230 and (CS:2630 or CS:2820 or ECE:3330).

CS:3910 Informatics Project 3 s.h.
Experience designing, implementing, documenting, and testing a system using appropriate software tools (e.g., a project working with an information management tool consisting of a database system with a Web-based front end); typically done in small groups; capstone project for informatics majors. Prerequisites: CS:2420 and CS:2520 and CS:2620.

CS:3980 Topics in Computer Science I 3 s.h.
Complement to material in other courses. Prerequisites: CS:1210 or CS:2110 or CS:3110.

CS:3990 Honors in Computer Science or Informatics arr.
Individual projects. Requirements: computer science or informatics major, and honors standing.

CS:4330 Theory of Computation 3 s.h.
Finite automata; regular sets and languages, context-free and context-sensitive grammars, their properties; push-down automata; standard, universal, and linear-bounded Turing machines; relationships between formal languages and automata; undecidability and its consequences. Prerequisites: CS:3330.
CS:4340 Limits of Computation 3 s.h.
Turing machines, undecidability and complexity; reductions, Cook’s theorem and NP-completeness, approximation algorithms and randomized algorithms. Prerequisites: CS:3330.

CS:4350 Logic in Computer Science 3 s.h.
Applications of symbolic logic in computer science; symbolic logic as a powerful tool for modeling computation and computational devices and reasoning formally about them; introduction to several logics (i.e., propositional, predicate, temporal, modal) differing in their expressive power and focus, their uses in computer science; how to represent knowledge in these logics, what represents a valid argument, and how to prove or disprove, possibly automatically, the validity of a logical statement. Prerequisites: CS:2210. Recommendations: computer science, math, or engineering major.

CS:4400 Database Systems 3 s.h.
Introduction to database systems including querying using SQL, design using ER diagrams, developing relational databases, programming web applications using PHP or JDBC. Prerequisites: CS:2230 and CS:3330.

CS:4420 Artificial Intelligence 3 s.h.
Introduction to artificial intelligence covering problem-solving methods, heuristic search, knowledge representation, automated reasoning, planning, game playing, machine learning, and neural networks. Prerequisites: CS:3330.

CS:4440 Web Mining 3 s.h.
Core methods underlying development of applications on the Web; examples of relevant applications, including those pertaining to information retrieval, summarization of Web documents, and identifying social networks. Prerequisites: CS:2230 and CS:2820. Recommendations: CS:4400 strongly recommended.

CS:4460 Introduction to Computational Linguistics 3 s.h.
Introduction to computational linguistics; focus on theory and practice of natural language processing and syntactic and semantic analysis. Same as LING:4030.

CS:4500 Research Methods in Human-Computer Interaction 3 s.h.
Survey of recent research in the field of human-computer interaction; research methods and current readings. Prerequisites: CS:2520.

CS:4520 Computer Graphics 3 s.h.
Introduction to computer graphics algorithms and techniques, with emphasis on interactive 3-D graphics; coordinate systems and frames, modeling and viewing transformations, rendering, shading, lighting, texture, bump, environment mapping, animation, ray tracing, radiosity. Prerequisites: CS:3330 and MATH:2700.

CS:4640 Computer Security 3 s.h.
Mechanism versus policy; authentication, access control, security domains; perimeter security, defense in depth; cryptographic protocols; key management and distribution; security assessment. Prerequisites: CS:2630.

CS:4700 High Performance and Parallel Computing 3 s.h.
Parallel scientific computing methods such as parallel algorithms for dense and sparse matrices; implementation using libraries such as MPI; current topics such as grid computing. Prerequisites: CS:2630 and MATH:2700. Same as MATH:4860.

CS:4720 Optimization Techniques 3 s.h.
Basic theory of optimization, use of numerical algorithms in solution of optimization problems; linear and nonlinear programming, sensitivity analysis, convexity, optimal control theory, dynamic programming, calculus of variations. Prerequisites: MATH:2700 and MATH:2850 and MATH:3800. Same as MATH:4820.

CS:4740 Large Data Analysis 3 s.h.
Current areas that deal with problem of Big Data; techniques from computer science, mathematics, statistics; high performance and parallel computing, matrix techniques, cluster analysis, visualization; variety of applications including Google PageRank, seismology, Netflix-type problems, weather forecasting; fusion of data with simulation; projects. Prerequisites: CS:1210 and MATH:2700 and (STAT:2010 or STAT:2020). Same as MATH:4740, STAT:4740.

CS:4980 Topics in Computer Science II 3 s.h.
Complements material in other courses. Prerequisites: CS:2110 or CS:2230 or CS:2820 or CS:3110.

Graduate

Competence and exposure to computer science are not only useful, they often are prerequisite to advanced study and research in many disciplines. For most graduate students from other disciplines, an appropriate first course is CS:3110 Introduction to Informatics.

CS:5350 Design and Analysis of Algorithms 3 s.h.
Review of design and analysis techniques; advanced data structures (binomial and Fibonacci heaps, disjoint sets); graph algorithms (network flows, matching, min-cut); NP-completeness, randomization and approximation algorithms; special topics (string matching, computational geometry, number theoretic algorithms). Prerequisites: CS:3330 or CS:4340.

CS:5520 Advanced Computer Graphics 3 s.h.
Topics such as global illumination and rendering; volume rendering; animation; curves and surfaces, advanced modeling and mapping techniques; graphics hardware; real-time graphics for virtual environments. Prerequisites: CS:4520.

CS:5610 High Performance Computer Architecture 3 s.h.
Problems involved in designing and analyzing current machine architectures using hardware description language (HDL) simulation and analysis, hierarchical memory design, pipeline processing, vector machines, numerical applications, multiprocessor architectures and parallel algorithm design techniques; evaluation methods to determine relationship between computer design and design goals. Prerequisites: CS:3620 or ECE:3350. Same as ECE:5320.
CS:5620 Distributed Systems and Algorithms
3 s.h.
Models of distributed systems, program correctness—safety and liveness properties, causality, logical and vector clocks, mutual exclusion, distributed snapshot, leader election, distributed algorithms for graph-theoretic problems, fault-tolerance—masking versus nonmasking types, checkpointing, stabilization, consensus—byzantine generals problem, fault-tolerant broadcast and multicast, management of replicated data. Prerequisites: CS:3330 and CS:3620. Requirements: some interest in networking.

CS:5710 Numerical Analysis: Nonlinear Equations and Approximation Theory
4 s.h.
Root finding for nonlinear equations; polynomial interpolation; polynomial approximation of functions; numerical integration. Prerequisites: (MATH:2700 and MATH:2850) or MATH:3550. Requirements: knowledge of computer programming. Same as MATH:5800.

CS:5720 Numerical Analysis: Differential Equations and Linear Algebra
4 s.h.
Numerical methods for initial value problems for ordinary differential equations; direct and iterative methods for linear systems of equations; eigenvalue problems for matrices. Prerequisites: ((MATH:2700 and MATH:2850) or (MATH:3550)) and MATH:3600. Requirements: knowledge of computer programming. Same as MATH:5810.

CS:5800 Fundamentals of Software Engineering
3 s.h.
Problem analysis, requirements definition, specification, design, implementation, testing/maintenance, integration, project management; human factors; management, technical communication; design methodologies; software validation, verification; group project experience. Prerequisites: CS:2820 or ECE:3330. Same as ECE:5800.

CS:5810 Formal Methods in Software Engineering
3 s.h.
Models, methods, and their application in all phases of software engineering process; specification methods; verification of consistency, completeness of specifications; verification using tools. Prerequisites: CS:2820 or ECE:3330. Recommendations: CS:4350. Same as ECE:5810.

CS:5820 Software Engineering Languages and Tools
3 s.h.
Modern agile software development practices for cloud and web-based applications, using state-of-the-art software engineering languages, tools, and technologies; agile software development practices, software-as-a-service (SAAS), and the Ruby on Rails Development Framework. Requirements: ECE:5800 or CS:5800; or graduate standing with solid understanding of object-oriented design and programming, and facility with at least one object-oriented programming language. Same as ECE:5820.

CS:5830 Software Engineering Project
3 s.h.
Team software development project using concepts and methodologies learned in earlier software engineering classes; practical aspects of large-scale software development. Prerequisites: ECE:5800 and ECE:5820. Same as ECE:5830.

CS:5850 Programming Language Foundations
3 s.h.
Introduction to formal foundations of programming languages using a variety of models, including attribute grammars, operational, axiomatic, denotational, and algebraic techniques; proofs of program equivalence, correctness, termination. Prerequisites: CS:3330 and CS:3820.

CS:5980 Topics in Computer Science III
arr.
Complements material in other courses.

CS:5990 Individualized Research or Programming Project
arr.
Individualized research and/or programming projects in computer science, guided by a faculty member.

CS:6000 Research Seminar: Colloquium Series
1 s.h.
Graduate colloquium. Requirements: graduate standing in computer science.

CS:6421 Knowledge Discovery
3 s.h.
Knowledge discovery process, including data reduction, cleansing, transformation; advanced modeling techniques from classification, prediction, clustering, association; evaluation and integration. Same as MSCI:6421.

CS:6990 Readings for Research
arr.
Requirements: Ph.D. standing in computer science.

CS:7990 Research for Dissertation
arr.
Requirements: Ph.D. candidacy (postcomprehensive exam) in computer science.
Creative Writing (Iowa Writers' Workshop)

Director
• Lan Samantha Chang

Graduate degree: M.F.A. in English
Faculty: [Provide information on faculty members]
Web site: [Provide web site]

The Creative Writing Program (Iowa Writers' Workshop) is a world-renowned graduate program for fiction writers and poets. It was the first creative writing program in the United States to offer a degree, and it became a model for many contemporary writing programs. In addition to its Master of Fine Arts program, it also offers writing courses for undergraduates.

Creative writing classes at the University of Iowa began in the 1890s, and in 1922 the University became the nation's first institution of higher education to accept creative work as theses for advanced degrees. The Iowa Writers' Workshop began in 1936, drawing distinguished fiction writers and poets who would lecture and stay to discuss students' work; some came for a full year of teaching.

Today the program's faculty and alumni include nationally and internationally prominent poets, novelists, and short story writers; many have won Pulitzer Prizes, National Book Awards, and other major literary honors. In 2003 the Iowa Writers' Workshop received a National Humanities Medal from the National Endowment for the Humanities—the first awarded to a university and only the second given to an institution rather than an individual.

To learn more about the Creative Writing Program's history and faculty, visit the Iowa Writers' Workshop web site.

Graduate Program of Study
• Master of Fine Arts in English

The Program in Creative Writing offers a master's degree program. However, unusually well-qualified Ph.D. students in the Department of English may obtain permission to submit a creative dissertation for the doctoral degree; the Program in Creative Writing assumes responsibility for granting permission for the option of the creative dissertation and for approving the dissertation once it is completed. Contact the director of graduate studies in the Department of English for more information.

Master of Fine Arts
The Master of Fine Arts degree in English (creative writing) requires 48 s.h. of graduate credit taken over four semesters in residence at the University of Iowa. Students specialize in fiction or poetry.

The program is flexible and individualized. Approximately half of the credit required for the degree is earned in writing courses; the rest may be earned in other graduate courses. Up to 18 s.h. of graduate transfer credit may be counted toward the degree, but transfer credit does not change the residency requirement.

Students must enroll in CW:7870 Fiction Workshop or CW:7875 Poetry Workshop during each semester of residence in the program. In each course, groups of 10-15 students read and critique each others' work.

The program's seminars provide students with a thorough knowledge of their chosen literary form and related aspects of craft. Seminars include CW:7810 Form of Fiction, CW:7820 Form of Poetry, CW:7830 Seminar: Problems in Modern Fiction, and CW:7840 Seminar: Problems in Modern Poetry. Each focuses on a single aspect of modern poetry or fiction, such as a single writer's work or a body of work with a common theme or purpose.

In addition to taking Creative Writing Program courses, many M.F.A. students choose courses offered by other University of Iowa departments and programs, such as the interdisciplinary Center for the Book (p. 929) (Graduate College), the Department of Theatre Arts (p. 625), the Comparative Literature (p. 193) Program, and the Department of English (p. 244).

During the second year of the program, each student must take the M.F.A. examination, an essay exam that may be written outside of the classroom. Students submit their graduate thesis during the last semester, CW:7895 M.F.A. Thesis; the thesis is a fiction or poetry manuscript of substantial length.

Admission
Applicants to the Creative Writing Program (Iowa Writers' Workshop) must meet the program's admission requirements as well as those of the Graduate College; see the Manual of Rules and Regulations of the Graduate College.

A creative writing manuscript is the most important element of the application for admission to the workshop. Submissions for poetry should include 10-12 poems. Submissions for fiction should include two or three short stories or a section of a novel, or both, usually 30-80 double-spaced pages (may not exceed 100 double-spaced pages).

Other application materials include a personal statement, official transcripts from all universities and colleges attended, the graduate application form, three letters of recommendation, an application for graduate awards, and an application to the Graduate College. Graduate Record Exam (GRE) General Test scores are optional, but they may make applicants more competitive for a wider range of financial assistance.

For detailed information on application materials and procedures, see How to Apply on the Iowa Writers' Workshop web site.

Financial Support
Financial assistance is available to Creative Writing Program students in the form of teaching assistantships, research assistants, and fellowships. See Financial Aid on the Iowa Writers' Workshop web site.

Creative Writing Courses
The Creative Writing Program offers courses for undergraduates as well as graduate students. Enrollment in some graduate-level courses requires admission to the M.F.A. program. See "Courses" in the Department of English (p. 244) section of the Catalog for course descriptions and prerequisites to enrollment.
### Lower-Level Undergraduate

- CW:1800 Creative Writing Studio Workshop 3 s.h.
- CW:2100 Creative Writing 3 s.h.
- CW:2870 Fiction Writing 3 s.h.
- CW:2875 Poetry Writing 3 s.h.

### Upper-Level Undergraduate and Graduate

- CW:3107 Creative Writing for the Health Professions 3 s.h.
- CW:3215 Creative Writing and Popular Culture 3 s.h.
- CW:3218 Creative Writing for New Media 3 s.h.
- CW:4745 The Sentence: Strategies for Writing 3 s.h.
- CW:4751 Creative Writing for the Musician 3 s.h.
- CW:4760 The Art of Revision: Rewriting Prose for Clarity and Impact 3 s.h.
- CW:4870 Undergraduate Writers' Workshop: Fiction arr.
- CW:4875 Undergraduate Writers' Workshop: Poetry arr.
- CW:4894 Undergraduate Project in Creative Writing arr.

### Graduate

- CW:5870 Graduate Fiction Writing (guided independent study) 3 s.h.
- CW:5875 Graduate Poetry Writing (guided independent study) 3 s.h.
- CW:7810 Form of Fiction 3 s.h.
- CW:7820 Form of Poetry 3 s.h.
- CW:7830 Seminar: Problems in Modern Fiction arr.
- CW:7870 Fiction Workshop arr.
- CW:7875 Poetry Workshop arr.
- CW:7890 Graduate Project in Creative Writing arr.
Critical Cultural Competence

Chair, School of Social Work
• Sara Sanders

Coordinator, Critical Cultural Competence
• Motier Haskins

Undergraduate certificate: critical cultural competence
Web site: http://clas.uiowa.edu/socialwork/undergraduate-program/certificate-critical-cultural-competence

The Certificate in Critical Cultural Competence is administered by the School of Social Work (p. 572).

Undergraduate Program of Study
• Certificate in Critical Cultural Competence

The certificate program helps students develop an appreciation for their own cultural identities. It also helps them become critically self-reflective in their orientation to differences in other people's cultural identities as defined by matters such as race, ethnicity, gender, class, and sexual orientation.

Certificate

The Certificate in Critical Cultural Competence requires 18 s.h. of course work. The certificate program is open to current University of Iowa undergraduate students and to all individuals who hold a bachelor's degree and are not enrolled in a graduate or professional degree program. Students must maintain a g.p.a. of at least 2.00 in work for the certificate. Ideally, students begin the certificate during their second year of undergraduate study.

Certificate students build the knowledge, skills, and attitudes they will need in order to increase their effectiveness in relating to others across cultural differences and in domestic and international environments that are increasingly diverse.

Students who complete the certificate program develop:
• greater appreciation of cultural differences;
• increased ability to interact with individuals of diverse backgrounds;
• a philosophy of treating people fairly, equitably, and thoughtfully;
• critical self-reflection and awareness of their own culture;
• ability to assess and understand culture-related privilege and disprivilege; and
• concern with issues of power and privilege, and social justice.

The Certificate in Critical Cultural Competence requires the following course work.

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CCCC:2220 Foundations of Critical Cultural Competence (taken first)</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>One elective with an immersion-learning or service-learning component</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>Three electives covering at least two diversity categories (two can be taken from the same department and two must be numbered 3000 or above)</td>
<td>9 s.h.</td>
</tr>
<tr>
<td>CCCC:4490 Integrative Seminar in Critical Cultural Competence</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

Students begin the certificate with CCCC:2220 Foundations of Critical Cultural Competence, which is offered spring semesters and is prerequisite to the course work that follows. Students complete the certificate's requirements with the capstone course, CCCC:4490 Integrative Seminar in Critical Cultural Competence, which is offered spring semesters.

In collaboration with the certificate program's coordinator, students establish study plans while completing the foundation course. The coordinator works with the academic advisor in the student's major to ensure that the study plan complements the student's academic program and career interests. The program coordinator approves the final study plan, recommends the sequence in which course work should be taken, schedules required courses, and keeps a record of each student's approved program and progress.

For more information, contact the School of Social Work.

Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CCCC:2220 Foundations of Critical Cultural Competence</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>Experiential and theoretical foundation; cultural competence as a concept and practice; conceptual frameworks and models for understanding cultural differences and similarities within, among, and between groups of people with whom others interact in their professional, personal, public, and private lives; appreciating differences while learning to be self-reflective; adjustment of perceptions, behaviors, styles for effective interaction with people from different ethnic, racial, sexual, gender, class groups. Prerequisites: RHET:1030.</td>
<td></td>
</tr>
<tr>
<td>CCCC:4490 Integrative Seminar in Critical Cultural Competence</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>Capstone course; application of knowledge to one's areas of study; community settings where cultural competence is required; challenges and benefits of behaving in culturally competent ways in varied contexts; review and critique of educational experiences in the certificate program; development of skills in community education related to cultural competence; group project to benefit the University and/or community; development of a plan to integrate critical cultural competence into careers. Requirements: completion of other required certificate courses.</td>
<td></td>
</tr>
</tbody>
</table>
Dance

Director, Division of Performing Arts
• Alan MacVey

Chair, Department of Dance
• George de la Peña

Undergraduate major: dance (B.A., B.F.A.)
Undergraduate minor: dance
Graduate degree: M.F.A. in dance
Faculty: http://dance.uiowa.edu/people
Web site: http://dance.uiowa.edu/

The Department of Dance offers degree programs for undergraduates and graduate students. The undergraduate major in dance provides a liberal arts and sciences education and thorough preparation for careers in professional dance, choreography, and education as well as preparation for graduate studies. The department offers as many as 14 concerts every year, providing dance students with numerous opportunities for performance and choreography. Each year the University of Iowa Dance Company performs Dance Gala on campus, and since 1986, the department's touring company, Dancers in Company, has given students an opportunity to perform in Iowa and surrounding states. Dance faculty members regularly present their choreography in national and international venues, giving University student performers the opportunity to further develop their performance skills. Periodic master classes with noted guest teachers, choreographers, and touring companies add diversity to the dance experience. The department is one of three academic units in the Division of Performing Arts (p. 227). Students have the opportunity to earn a major in dance and a second major in one of the other units within the division—music or theatre arts. It also participates in offering the division's Certificate in Performing Arts Entrepreneurship (p. 498).

Undergraduate Programs of Study

• Major in dance (Bachelor of Arts, Bachelor of Fine Arts)
• Minor in dance

Students must audition on campus in order to be admitted to a degree program or the minor in dance, as well as for placement in advanced dance classes.

Bachelor of Arts

The Bachelor of Arts with a major in dance requires a minimum of 120 s.h., including 56 s.h. of work for the major (50 s.h. in dance and 3 s.h. in a required anatomy course). No more than 61 s.h. in Department of Dance courses may be counted toward the 120 s.h. required for the B.A. At least half of all semester hours in the major must be earned at the University of Iowa. Students must maintain a g.p.a. of at least 2.00 in all courses for the major and in all UI courses for the major. They also must complete the College of Liberal Arts and Sciences General Education Program (p. 313).

The B.A. program is designed for students who want to acquire a strong liberal arts and sciences background while pursuing a comprehensive undergraduate dance education. The dance major for the Bachelor of Arts stresses performance and choreography as well as dance theory courses, including dance history, dance kinesiology, and dance production.

Students must audition on campus, during the semester before they enter the University, in order to be admitted to a degree program in dance. They must audition for placement in dance classes before they register for classes. Nonmajors may register only for beginning and continuing levels of ballet and modern dance, but they may register for all levels of jazz and Afro-Cuban dance. Contact the Department of Dance, its undergraduate program coordinator, or the University's Office of Admissions for additional information.

All B.A. students must complete HHP:1100 Human Anatomy (3 s.h.). The required 50 s.h. in Department of Dance courses must include two semesters of DANC:3530 Major Ballet II or DANC:3540 Major Modern Dance II with a grade of B-minus or higher. Two semesters of DANC:4040 Major Modern Dance III, DANC:4030 Major Ballet III, or DANC:4540 Major Modern Dance IV also satisfy this requirement.

The Bachelor of Arts major in dance requires the following course work.

CORE COURSES

B.A. students should register for cross-listed core courses under the Department of Dance course number (prefix DANC) in order for those courses to count toward the 50 s.h. in Department of Dance courses required for the major.

All of these:

DANC:1060 Introduction to Dance Studies 1 s.h.
DANC:1080 Music Essentials for Dance 2 s.h.
DANC:1090 Dance Production 3 s.h.
DANC:2060/DPA:2060 Dance and Society in Global Contexts 3 s.h.
DANC:2220 Production Run Crew (2 s.h. required) 2 s.h.
DANC:3060 Dance History 3 s.h.
DANC:3070/THTR:3070 Dance Kinesiology 3 s.h.
HHP:1100 Human Anatomy 3 s.h.

STUDIO COURSES

All of these:

DANC:2050 Improvisation I 2 s.h.
DANC:3150 Choreography I 2 s.h.
DANC:3250 Choreography II 2 s.h.

PERFORMANCE COURSES

A total of 2 s.h. from these:

DANC:3885 Repertory Dance Company 0-4 s.h.
DANC:4880 Dance Performance 0-3 s.h.

Consult advisor for other courses that count toward this requirement

DANCE TECHNIQUE COURSES

Students must complete 20 s.h. from the following courses. They must include 6 s.h. of ballet, 6 s.h. of modern dance, and two semesters of one of these:
DANC:3530, DANC:3540, DANC:4030, DANC:4040, or DANC:4540. All courses may be repeated.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>DANC:2020 Intermediate Jazz</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>DANC:2030 Intermediate Ballet</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>DANC:2040 Intermediate Modern</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>DANC:3030 Major Ballet I</td>
<td>1-3 s.h.</td>
</tr>
<tr>
<td>DANC:3040 Major Modern Dance I</td>
<td>1-3 s.h.</td>
</tr>
<tr>
<td>DANC:3085 Introduction to Afro-Cuban Dance</td>
<td>1 s.h.</td>
</tr>
<tr>
<td>DANC:3530 Major Ballet II</td>
<td>1-3 s.h.</td>
</tr>
<tr>
<td>DANC:3540 Major Modern Dance II</td>
<td>1-3 s.h.</td>
</tr>
<tr>
<td>DANC:4030 Major Ballet III</td>
<td>1-3 s.h.</td>
</tr>
<tr>
<td>DANC:4035 Ballet Pointe II</td>
<td>1 s.h.</td>
</tr>
<tr>
<td>DANC:4040 Major Modern Dance III</td>
<td>1-3 s.h.</td>
</tr>
<tr>
<td>DANC:4540 Major Modern Dance IV</td>
<td>1-2 s.h.</td>
</tr>
</tbody>
</table>

**DANCE ELECTIVES**

Credit earned in Department of Dance courses (prefix DANC) that is not used to satisfy core, studio, or dance technique degree requirements is counted toward the dance elective requirement. Dance electives complete the 50 s.h. of dance courses required for the Bachelor of Arts.

The required number of semester hours in dance electives varies depending on whether the student completes the core with dance courses or with cross-listed courses from another department, or has a core requirement waived.

**Bachelor of Fine Arts**

The Bachelor of Fine Arts with a major in dance requires a minimum of 120 s.h., including 78 s.h. of work for the major (75 s.h. in dance and 3 s.h. in a required anatomy course). No more than 82 s.h. in Department of Dance courses may be counted toward the 120 s.h. required for the B.F.A. Students must maintain a g.p.a. of at least 2.00 in all courses for the major and in all UI courses for the major. They also must complete the College of Liberal Arts and Sciences General Education Program (p. 313). B.F.A. students are required to maintain a cumulative g.p.a. of at least 3.50 in dance department courses.

In contrast to the B.A. program, the dance major for the B.F.A. emphasizes choreography and performance. It requires an additional 25 s.h. of choreography, performance, and technique. Students may be admitted to the B.F.A. program after they have completed a minimum of 30 s.h. at the University of Iowa. Students who have achieved the equivalent of major II technique and who show academic and professional promise are selected by department faculty for admission to the program.

All B.F.A. students must complete HHP:1100 Human Anatomy (3 s.h.). The required 75 s.h. in Department of Dance courses must include three semesters of DANC:4030 Major Ballet III or DANC:4540 Major Modern Dance IV with a grade of B-minus or higher. B.F.A. students must earn at least half of the semester hours in the major at the University of Iowa. No more than 82 s.h. in Department of Dance courses may be counted toward the 120 s.h. required for the B.F.A.

The Bachelor of Fine Arts major in dance requires the following course work.

**CORE COURSES**

B.F.A. students should register for cross-listed core courses under the Department of Dance course number (prefix DANC) in order for those courses to count toward the 75 s.h. in Department of Dance courses required for the major.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>DANC:1060 Introduction to Dance Studies</td>
<td>1 s.h.</td>
</tr>
<tr>
<td>DANC:1080 Music Essentials for Dance</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>DANC:1090 Dance Production</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>DANC:2060/DPA:2060 Dance and Society in Global Contexts</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>DANC:2220 Production Run Crew</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>DANC:3060 Dance History</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>DANC:3070/THTR:3070 Dance Kinesiology</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>HHP:1100 Human Anatomy</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

**STUDIO COURSES**

DANC:2050 Improvisation I                  | 2 s.h.  |
DANC:3150 Choreography I                    | 2 s.h.  |
DANC:3250 Choreography II                   | 2 s.h.  |
DANC:4350 Choreography III                  | 2 s.h.  |

**PERFORMANCE COURSES**

A total of 6 s.h. from these (no more than 3 s.h. of DANC:3885) will count toward the performance requirement.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>DANC:3885 Repertory Dance Company</td>
<td>0-4 s.h.</td>
</tr>
<tr>
<td>DANC:4880 Dance Performance</td>
<td>0-3 s.h.</td>
</tr>
</tbody>
</table>

Consult advisor for other courses that count toward this requirement.

**DANCE TECHNIQUE COURSES**

Students must complete 32 s.h. from the following courses. They must include 14 s.h. of ballet, 14 s.h. of modern dance, and three semesters of either DANC:4030 or DANC:4540. All courses may be repeated.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>DANC:1150 Brazilian Culture and Carnival</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>DANC:3030 Major Ballet I</td>
<td>1-3 s.h.</td>
</tr>
<tr>
<td>DANC:3040 Major Modern Dance I</td>
<td>1-3 s.h.</td>
</tr>
<tr>
<td>DANC:3085 Introduction to Afro-Cuban Dance</td>
<td>1 s.h.</td>
</tr>
<tr>
<td>DANC:3530 Major Ballet II</td>
<td>1-3 s.h.</td>
</tr>
<tr>
<td>DANC:3540 Major Modern Dance II</td>
<td>1-3 s.h.</td>
</tr>
<tr>
<td>DANC:4030 Major Ballet III</td>
<td>1-3 s.h.</td>
</tr>
<tr>
<td>DANC:4035 Ballet Pointe II</td>
<td>1 s.h.</td>
</tr>
<tr>
<td>DANC:4040 Major Modern Dance III</td>
<td>1-3 s.h.</td>
</tr>
<tr>
<td>DANC:4540 Major Modern Dance IV</td>
<td>1-2 s.h.</td>
</tr>
</tbody>
</table>

**DANCE ELECTIVES**

B.F.A. students choose advanced-level elective course work by selecting one of the following three options.

Option 1, pedagogy—one of these:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>DANC:4535 Elementary Ballet Pedagogy</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>DANC:4545 Teaching of Modern Dance</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

Option 2, advanced history or theory—one of these:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>DANC:4060 The Contemporary Dance Scene</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>DANC:5060 Theories of Dance and the Body</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

Option 3, choreography—both of these:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>DANC:4450 Choreography IV</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>DANC:4991 Independent Choreography</td>
<td>1 s.h.</td>
</tr>
</tbody>
</table>
Credit earned in Department of Dance courses (prefix DANC) that is not used to satisfy core, studio, or dance technique degree requirements is counted toward the dance elective requirement. Dance electives complete the 75 s.h. of dance courses required for the Bachelor of Fine Arts.

The required number of semester hours in dance electives varies depending on whether the student completes the core with dance courses or with cross-listed courses from another department, or has a core requirement waived.

**SENIOR PROJECT**
B.F.A. students culminate their experience with senior projects in choreography or performance. Students may earn honors credit for this project by enrolling in DANC:4999 Honors Project in Dance (enrollment requires membership in the University of Iowa Honors Program or special permission from the instructor). Other students must complete DANC:4998 BFA Senior Project in Dance.

One of these:
DANC:4998 BFA Senior Project in Dance     arr.
DANC:4999 Honors Project in Dance        arr.

**Four-Year Graduation Plan**
The following checkpoints list the minimum requirements students must complete by certain semesters in order to stay on the University’s Four-Year Graduation Plan. (Courses in the major are those required to complete the major; they may be offered by departments other than the major department.)

Department of Dance course work beyond 50 s.h. for B.A. students and 75 s.h. for B.F.A. students does not apply toward semester hours required for graduation.

**Bachelor of Arts**

Before the third semester begins: 12 s.h. of course work in the major

Before the fifth semester begins: 24-32 s.h. of course work in the major

Before the seventh semester begins: 36-48 s.h. of course work in the major and at least 90 s.h. earned toward the degree

Before the eighth semester begins: 42-50 s.h. of course work in the major

During the eighth semester: enrollment in all remaining course work in the major, all remaining General Education courses, and a sufficient number of semester hours to graduate

**Bachelor of Fine Arts**

Before the third semester begins: 16 s.h. of course work in the major

Before the fifth semester begins: 25-40 s.h. of course work in the major

Before the seventh semester begins: 45-60 s.h. of course work in the major and at least 90 s.h. earned toward the degree

Before the eighth semester begins: 57-75 s.h. of course work in the major

During the eighth semester: enrollment in all remaining course work in the major, all remaining General Education courses, and a sufficient number of semester hours to graduate

**Honors in the Major**

Students majoring in dance have the opportunity to graduate with honors in the major. The honors program in dance serves and recognizes outstanding students in choreography, performance, and special projects. Departmental honors students must have a g.p.a. of at least 3.50 in UI dance department courses. To graduate with honors in the major, students must complete 8-10 s.h. of honors work, taking two courses for honors credit and completing an honors project. All honors projects must be approved by the dance department faculty.

Honors students in dance must be members of the University of Iowa Honors Program, which requires students to maintain a cumulative University of Iowa g.p.a. of at least 3.33 and to fulfill other requirements; visit Honors at Iowa to learn about the University’s honors program.

**Minor**

The minor in dance requires a minimum of 15 s.h. in University of Iowa Department of Dance courses. Students must maintain a g.p.a. of at least 3.00 in all courses for the minor and in all UI courses for the minor. Course work in the minor may not be taken pass/nonpass.

Students must audition on campus in order to be admitted to the minor and for placement in dance classes. Auditions are held four times each year. Contact the Department of Dance for more information.

The minor requires the following course work.

This course:
DANC:2060 Dance and Society in Global Contexts 3 s.h.

At least one of these:
DANC:1150 Brazilian Culture and Carnival 3 s.h.
DANC:2050 Improvisation I 2 s.h.
DANC:3050 Body/Image: Dance Discourse and Practice 2 s.h.

Students may choose their remaining dance courses from these:
DANC:3010 Topics in Global Dance Techniques 2 s.h.
DANC:3030 Major Ballet I 1-3 s.h.
DANC:3039 Partnering Class 1 s.h.
DANC:3040 Major Modern Dance I 1-3 s.h.
DANC:3060 Dance History 3 s.h.
DANC:3070 Dance Kinesiology 3 s.h.
DANC:3085 Introduction to Afro-Cuban Dance 1 s.h.
DANC:3086 Afro-Cuban Drum and Dance Performance 1 s.h.

DANC:3150 Choreography I 2 s.h.
DANC:3521 Acting for Singers and for Dancers 2 s.h.
DANC:3530 Major Ballet II 1-3 s.h.
DANC:3540 Major Modern Dance II 1-3 s.h.
DANC:3850 Introduction to Laban Movement Studies 2-3 s.h.
DANC:4030 Major Ballet III 1-3 s.h.
DANC:4035 Ballet Pointe II 1-2 s.h.
DANC:4040 Major Modern Dance III 1-3 s.h.
DANC:4540 Major Modern Dance IV 1-2 s.h.
DANC:4880 Dance Performance 0-1 s.h.

Graduate Program of Study
- Master of Fine Arts in dance
The Master of Fine Arts is offered with a choice of choreography emphasis or performance emphasis. Students must audition on campus in order to be admitted to the M.F.A. program.

Applicants must meet the admission requirements of the Graduate College; see the Manual of Rules and Regulations of the Graduate College.

Master of Fine Arts
The Master of Fine Arts program in dance requires a minimum of 60 s.h. of graduate credit. The program is designed to be completed in four to six semesters in residence. Students who demonstrate accomplishment in dance performance and/or choreography may apply for admission to the M.F.A. program. Applicants select the choreography or the performance emphasis before they are admitted.

Admission is based on a review of recorded choreographic and performance work; letters of recommendation; application materials; and an on-campus audition, in which applicants perform a solo dance, teach one or more classes, and take advanced classes in ballet and modern technique to determine class placement level.

Advanced technique (ballet and/or modern) and demonstrated accomplishment in performance or choreography are prerequisites for admission to the M.F.A. program.

The M.F.A. requires the following course work.

DANCE CORE
A total of 19 s.h. of core course work is required for both the performance emphasis and the choreography emphasis.

One of these:
DANC:4535 Elementary Ballet Pedagogy 3 s.h.
DANC:4545 Teaching of Modern Dance 3 s.h.

One of these:
DANC:5050 Graduate Improvisation I 1-2 s.h.
DANC:6050 Graduate Improvisation II 2 s.h.

All of these:
DANC:5060 Theories of Dance and the Body 3 s.h.
DANC:6060 Graduate Seminar in Dance 2 s.h.
DANC:6080 Graduate Production Practicum 1 s.h.
DANC:7990 Thesis (8 s.h. required) 8 s.h.

DANCE TECHNIQUE
The performance emphasis requires 18 s.h. from the following, and the choreography emphasis requires 11 s.h. All of these courses may be repeated.

DANC:3030 Major Ballet I 1-3 s.h.
DANC:3040 Major Modern Dance I 1-3 s.h.
DANC:5530 Graduate Majors Ballet II 1-3 s.h.
DANC:5540 Graduate Majors Modern II 1-3 s.h.
DANC:6030 Graduate Majors Ballet III 1-3 s.h.
DANC:6040 Graduate Majors Modern III 1-3 s.h.
DANC:6540 Graduate Major Modern IV 1-2 s.h.
DANC:7550 Graduate Modern Dance Technique Practicum
DANC:7560 Graduate Ballet Technique Practicum

EMPHASIS COURSES
A total of 14 s.h. is required for both the choreography emphasis and the performance emphasis.

Choreography Emphasis
A total of 2 s.h from these:
DANC:3885 Repertory Dance Company (up to 4 s.h. per year) 0-4 s.h.
DANC:6880 Graduate Dance Performance 2 s.h.
Consult advisor for other courses that count toward this requirement

All of these:
DANC:5550 Collaborative Performance 4 s.h.
DANC:6350 Graduate Choreography III 2 s.h.
DANC:6450 Graduate Choreography IV 3 s.h.
DANC:6990 Graduate Independent Choreography (2 s.h. for each project) 6 s.h.

Performance Emphasis
This course:
DANC:6992 Graduate Independent Performance Project (minimum of 2 s.h.; taken twice) arr.
At least 12 s.h. from these:
DANC:3885 Repertory Dance Company (up to 4 s.h. per year) 0-8 s.h.
DANC:6880 Graduate Dance Performance 0-4 s.h.
Consult advisor for other courses that count toward this requirement

One of these:
DANC:6990 Graduate Independent Choreography (1 s.h. each project) 2 s.h.
A course from the choreography sequence 2 s.h.

ELECTIVES
This course:
Elective non-dance department courses numbered 3000 or above 6 s.h.
And one of these:
DANC:3060 Dance History 3 s.h.
DANC:3070 Dance Kinesiology 3 s.h.
DANC:4060 The Contemporary Dance Scene 3 s.h.

Facilities
The Department of Dance houses six technique studios, a movement training lab, a media classroom and library, a
media laboratory, an audio recording laboratory, and its own theater for dance concerts.

Courses

Lower-Level Undergraduate

**DANC:1000 First-Year Seminar** 1 s.h.
Small discussion class taught by a faculty member; topics chosen by instructor; may include outside activities (e.g., films, lectures, performances, readings, visits to research facilities). Requirements: first- or second-semester standing.

**DANC:1010 Beginning Tap** 1-2 s.h.
Elementary techniques, steps, and performance skills for rhythm and show tap styles; enhancement of rhythmic ability through exercises, improvisation, creative activities; may include history of tap. Tap shoes required. GE: Literary, Visual, and Performing Arts.

**DANC:1020 Beginning Jazz** 1-2 s.h.
Basic movement fundamentals, terminology, performance skills of jazz dance; enhancement of flexibility, strength, body alignment, coordination, balance, kinesthetic awareness, personal range of motion, and musicality; warm-up, locomotion, center combinations; may include history of jazz dance. GE: Literary, Visual, and Performing Arts.

**DANC:1030 Beginning Ballet** 1-2 s.h.
Basic movement fundamentals, terminology, performance skills of ballet; enhancement of flexibility, strength, body alignment, coordination, balance, kinesthetic awareness, personal range of motion, and musicality; barre and center combinations; terminology; may include history of ballet. GE: Literary, Visual, and Performing Arts.

**DANC:1040 Beginning Modern Dance** 1-2 s.h.
Basic movement fundamentals, terminology, performance skills of modern dance; enhancement of flexibility, strength, body alignment, coordination, balance, kinesthetic awareness, personal range of motion, and musicality; warm-up, locomotion, center combinations; may include history of modern dance. GE: Literary, Visual, and Performing Arts.

**DANC:1050 Beginning/Contact Improvisation** 1-2 s.h.
Concepts of dance improvisation and contact improvisation; cultivation of creative freedom through the use and invention of movement; range of expression broadened through personal movement capacity, spontaneity and imagination, ability to make and commit to movement choices; new approaches to moving and movement elements such as time, space, motion, qualities, dynamics; shared weight, support, counter-balancing, elementary partnering; studio course.

**DANC:1060 Introduction to Dance Studies** 1-2 s.h.
Introduction to dance studies in the liberal arts; breadth and diversity of contemporary scholarship on dance; dance history, criticism, ethnography, theory, conditioning and injury prevention, improvisation, choreography, technology.

**DANC:1070 Topics in Body Conditioning** 2 s.h.
Somatic training techniques that address conditioning needs of dancers—yoga for dancers, pilates, release techniques; other somatic studies related to injury prevention, concentration, flexibility, efficient movement, strength training.

**DANC:1080 Music Essentials for Dance** 2 s.h.
Evolution of music and dance from prehistoric times to the present; rhythmic analysis and fundamental music theory for dance students.

**DANC:1090 Dance Production** 3 s.h.
Scenic design, costumes, lighting, audio/video, publicity; visits by professional guest lecturers, field trips to creative shops; projects.

**DANC:1110 Continuing Tap** 1-2 s.h.
Continuation of DANC:1010. GE: Literary, Visual, and Performing Arts.

**DANC:1120 Continuing Jazz** 1-2 s.h.
Continuation of DANC:1020; skills for technique and performance of jazz dance; enhancement of flexibility, strength, body alignment, coordination, balance, kinesthetic awareness, personal range of motion, and musicality; warm-up, locomotion, center combinations; may include history of jazz dance. GE: Literary, Visual, and Performing Arts.

**DANC:1130 Continuing Ballet** 1-2 s.h.
Continuation of DANC:1030; skills necessary for technique and performance of ballet; enhancement of flexibility, strength, body alignment, coordination, balance, kinesthetic awareness, personal range of motion, and musicality; barre and center combinations; terminology; may include history of ballet. GE: Literary, Visual, and Performing Arts.

**DANC:1140 Continuing Modern Dance** 1-2 s.h.
Continuation of DANC:1040; skills for the technique and performance of modern dance; enhancement of flexibility, strength, body alignment, coordination, balance, kinesthetic awareness, personal range of motion, and musicality; warm-up, locomotion, center combinations; may include history of modern dance. GE: Literary, Visual, and Performing Arts.

**DANC:1150 Brazilian Culture and Carnival** 3 s.h.
Dance, music, historical, and social contents of Brazilian Carnival production, critical theories of performance, religious backgrounds, and theatre making in carnival parades. GE: Values, Society, and Diversity.

**DANC:1412 The Arts in Performance** 3 s.h.

**DANC:2020 Intermediate Jazz** 1-2 s.h.
Low intermediate technique and performance training in jazz dance; flexibility, strength, body alignment, and coordination as foundation for more advanced dance artistry, including mobility, musicality, style; warm-up, locomotion, center combinations; may include history of jazz dance. GE: Literary, Visual, and Performing Arts.
DANC:2030 Intermediate Ballet 1-2 s.h.
Low intermediate technique and performance training in ballet; flexibility, strength, body alignment, and coordination as foundation for more advanced dance artistry, including more difficult steps, musicality, mobility, balance; basic ballet terminology, including steps, head, body, arm positions; variations in timing, changes of facing. GE: Literary, Visual, and Performing Arts.

DANC:2040 Intermediate Modern 1-2 s.h.
Low intermediate technique and performance training in modern dance; flexibility, strength, body alignment, and breath as foundation for more advanced dance artistry, including musicality, mobility, balance, improvisation; variations in timing, changes of facing. GE: Literary, Visual, and Performing Arts.

DANC:2050 Improvisation I 2 s.h.
Introduction to movement as research; experimental process as vehicle for invention, creative freedom, aesthetic range; development of kinesthetic imagination, awareness, creative problem solving; introduction to issues of artistic originality and authenticity; practical integration of improvisation and composition through spontaneous manipulation of time, space, and energy; knowledge of creative process supported by reading and individual research.

DANC:2060 Dance and Society in Global Contexts 3 s.h.
Dance and other physical endeavors as embodied forms of knowledge and culture; U.S. dance practices; European and African dance cultures; aesthetic and political issues raised by concert dance (i.e., performance, choreography, spectatorship, criticism); ethnographic methods to examine the function of dance in cultural formation (i.e., spiritual, celebratory, social, political contexts); lecture, discussion, viewing, movement workshops, formal and informal writing, field research, and BLOG construction. Same as DPA:2060.

DANC:2070 Ethnic Dance in a Global Society 3 s.h.
Investigation of why humans dance; dance, like language, as an expression of the human condition, joys, sorrows, love, fighting spirit, and joyous celebrations we all experience; diverse ways of expressing life through dance from one society to another due to varying histories; how individual's culture and geographic area affect ways of moving; discovering what we have in common with our dancing neighbors; when we understand the dance, we understand more about the person/country; recognizing a common link through the language of dance.

DANC:2080 Dance and Social Action 3 s.h.
Exploration of dance as a means for civic engagement; readings that support theory and practice of dance as social action; practicum experience of facilitating a workshop to girls at the Iowa Juvenile Home.

DANC:2220 Production Run Crew 1-2 s.h.
Hands-on experience in production work for live dance performance. Prerequisites: DANC:1090.

Upper-Level Undergraduate and Graduate

DANC:3010 Topics in Global Dance Techniques 2 s.h.
Beginning, continuing, or advanced technique of global and non-Western dance practices; topics vary, may include Asia, Latin America, Africa, Pacific Islands, or other regions in historical and cultural context, and classical, folk, traditional, or contemporary forms.

DANC:3030 Major Ballet I 1-3 s.h.
Builds on DANC:2030; intermediate technical and performance training in ballet; flexibility, strength, body alignment, and coordination as foundation for introduction of more advanced aspects of dance artistry, including steps, musicality, mobility, balance; terminology related to barre and center vocabulary, including steps, head, body, and arm positions; practice of steps and combinations, variations in timing, changes of facing.

DANC:3034 Acting for Dancers 3 s.h.
Beginning acting for dancers; spontaneity and expression, sources of action and reaction through theater games; emotional journey in effective drama and comedy; drama, comic structure, and tension through character and script analysis.

DANC:3039 Partnering Class 1 s.h.
The art of partnering in dance, from salsa to Swan Lake; power sharing on the dance floor, including supported poses, balance, musical and physical timing, unity of movement, eloquence of gesture; for advanced dancers with strong coordination skills.

DANC:3040 Major Modern Dance I 1-3 s.h.
Builds on DANC:2040; intermediate technical and performance training in modern dance; physical and mental skills for transition to more advanced dance —physical stamina, strength, flexibility, articulation, coordination, musicality, phrasing; basic physical concepts underlying clear and efficient movement; assimilation of new movement material; center of gravity and its role in body mobilization and control; personal movement choices, and expressive range.

DANC:3050 Body/Image: Dance Discourse and Practice 2 s.h.
Intersection of body, image, and sound in analog and digital media; relationship to critical and practical texts; written and performative assignments that address fundamental concepts of corporeality in related fields including dance for camera, stage and film performance, and artistic, documentary, and publicity filmmaking and photography.

DANC:3060 Dance History 3 s.h.
Dance history in the 19th and 20th centuries; changes in dance training and technique, theory, composition, performance practices in context of broader social, political, and cultural trends; how dance and choreographic practices have changed over time, relationships between social ideas about embodiment and production of dance forms, precedents for contemporary dance practices in past forms. Prerequisites: DANC:2060.
DANC:3070 Dance Kinesiology  
Body science related to demands of dance; structural and muscular analysis for efficient, effective dance training and prevention of injuries; investigation of skeletal and ligamentous structure for working knowledge of how the body produces movement; joint actions and restrictions, common injuries to those sites; attachments of the voluntary muscles, pathways and potential actions; neuromuscular analysis of an action; functional skeletal alignment; how individual differences may affect movement performance. Prerequisites: HHP:1100. Same as THTR:3070.

DANC:3075 Yoga Teacher Training  
Expansion of yoga and/or teaching knowledge; in-depth physical practice of yoga postures; basic yoga philosophy and texts; personal practice of meditation; yoga for various populations; anatomy of yoga postures; practice teaching within class structure. Corequisites: DANC:3070. Requirements: dance major and sophomore or higher standing. Recommendations: previous experience taking yoga classes.

DANC:3085 Introduction to Afro-Cuban Dance  
Introduction to the dance, drumming, and songs of the Afro-Cuban folkloric traditions; emphasis on dance. May participate in UI Afro-Cuban Drum and Dance ensemble. Same as DPA:3085.

DANC:3086 Afro-Cuban Drum and Dance Performance  
Dance repertory for the UI Afro-Cuban Drum and Dance Ensemble. Performance pieces based on dance, drumming, songs of the Afro-Cuban folkloric traditions. May participate in UI Afro-Cuban Drum and Dance Ensemble. Same as DPA:3086.

DANC:3150 Choreography I  
Introduction to theories and practices of creating choreography; locating varied sources for movement; elementary considerations of choreographic form; development of ideas, impulses, and initial inspirations into short works; fundamentals of giving and receiving critical feedback; articulation of thoughts and experience as composers and watchers of choreography; exposure to choreographic concerns supported by video and reading.

DANC:3190 Lighting for Dance and Entertainment  
How to research, conceptualize, and express ideas through light plots; design paperwork; dance lighting design projects.

DANC:3250 Choreography II  
Continuation of DANC:3150: development of intermediate choreographic skills; emphasis on cultivation of individual choreographic voice through expansion of vocabulary, discovery of complex ways to form and arrange, and use of widening range of methods and types of resources.

DANC:3521 Acting for Singers and for Dancers  
Fundamentals of acting technique, with attention to demands on performers in opera, musical theater, and dance. Same as MUS:3521, THTR:3521.

DANC:3530 Major Ballet II  
High intermediate training in ballet technique and performance; physical and mental skills necessary for more advanced work—physical stamina, strength, flexibility, articulation, coordination, musicality, phrasing, basic physical concepts underlying clear and efficient movement, capacity to assimilate new movement material, awareness of the center of gravity and its role in mobilization and control of the body.

DANC:3540 Major Modern Dance II  
High intermediate technical and performance training in modern dance; physical and mental skills necessary for more advanced work—physical stamina, strength, flexibility, articulation, coordination, musicality, phrasing, basic physical concepts underlying clear and efficient movement, capacity to assimilate new movement material, awareness of the center of gravity and its role in mobilization and control of the body.

DANC:3850 Introduction to Laban Movement Studies  
Introduction to Bartenieff Fundamentals (BF) and Laban Movement Analysis (LMA) as methods of organizing and integrating movement to support artistic goals and expanding expressive range; BF teaches body awareness, breath support, developmental patterns, ergonomically-efficient alignment, balancing of muscular strength and stretch, and coordination; LMA teaches vocabulary of expressive movement and nonverbal communication, including effort (use of energy/dynamics for expression, stamina, stress relief) and shape (how posture and gesture communicate); quality of movement that supports individual goals in artistic expression, sound production, and wellness. Same as MUS:3850, THTR:3850, DPA:3850.

DANC:3851 Introduction to the Alexander Technique  
The Alexander Technique and "self-use"—how movement choices affect results achieved; improvement of physical skills and presence; principles in support of performing arts (e.g., speaking, singing, playing an instrument, dancing, acting); application to skills in daily life, addressing underpinnings of movement; physical participation (e.g., lying down, rolling, sitting, standing, locomotion). Same as DPA:3851, MUS:3851, THTR:3851.

DANC:3885 Repertory Dance Company  
Advanced repertory studies; learning and performing multiple works by professional guest artists, faculty, and invited graduate students; collaborative creation and performing in community outreach lecture-demonstration throughout Iowa and the region. Requirements: audition.

DANC:4030 Major Ballet III  
Advanced training in ballet technique and performance; physical and mental skills necessary for professional work—physical stamina, strength, flexibility, articulation, coordination, musicality, phrasing, basic physical concepts underlying clear and efficient movement, capacity to assimilate new movement material, awareness of the center of gravity and its role in mobilization and control of the body.
DANC:4035 Ballet Pointe II 1-2 s.h.
Intermediate/advanced techniques and training for ballet pointe work; repetition and analysis of steps and combinations, assimilation of new material; barre and center exercises, pirouettes and turns commonly performed en pointe, learning and performing variations drawn from repertory.

DANC:4040 Major Modern Dance III 1-3 s.h.
Advanced technical and performance training in modern dance; physical and mental skills necessary for professional work—physical stamina, strength, flexibility, articulation, coordination, musicality, phrasing, basic physical concepts underlying clear and efficient movement, capacity to assimilate new movement material, awareness of the center of gravity and its role in mobilization and control of the body, consciousness of personal movement choices and expressive range; may include partnering exercises for investigation of weight exchange, timing, expressivity.

DANC:4050 Improvisation II 2 s.h.
Advanced concepts in compositional improvisation; in-depth individual exploration, spontaneous ensemble composition; increasing authenticity, depth, and range; integrity in relating to the whole ensemble; connecting creative process to other bodies of knowledge; making contact with emerging premise; reading and discussion as integration of conceptual and experiential; speaking and writing as improvisational process. Prerequisites: DANC:2050.

DANC:4060 The Contemporary Dance Scene 3 s.h.
Historical, theoretical, and practical elements of contemporary dance; the term "postmodern" and its associations with dance, performing arts, contemporary culture; relationships between process and product, identity and subjectivity, artistic intent and authorship, meaning and intertextuality; possibility of art as a form of dissent; theory and practice placed in a dialectic; analysis and synthesis of previous research. Same as DPA:4060.

DANC:4350 Choreography III 2 s.h.
Continuation of DANC:3250; increased emphasis on invention, clarity, sophistication, and development of complete works; creation of sharply defined mature movement worlds; increasingly thorough consideration of sources and methods, responsibility for applying course work to self-defined artistic concerns and emerging individual aesthetic; advanced theories and methods through video, reading, choreographic research.

DANC:4450 Choreography IV 2 s.h.
Continuation of DANC:4350; advanced theories and practices of choreography; complex concepts, methods, applications; analytical and creative connections with bodies of knowledge across the liberal arts and sciences; complete development of multiple works; advanced practice in critical feedback and articulation of ideas about process and product; development through reading, video, extensive creative research.

DANC:4535 Elementary Ballet Pedagogy 3 s.h.
Methods, materials, concepts for teaching ballet techniques.
DANC:5540 Graduate Majors Modern II  1-3 s.h.
High intermediate technical and performance training in modern dance; physical and mental skills necessary for more advanced work—physical stamina, strength, flexibility, articulation, coordination, musicality, phrasing, basic physical concepts underlying clear and efficient movement, capacity to assimilate new movement material, awareness of the center of gravity and its role in mobilization and control of the body, consciousness of personal movement choices and expressive range.

DANC:5550 Collaborative Performance  1-4 s.h.
Collaborative experience with advanced artists from varied disciplines that culminates in a final performance; emphasis on sharing and investigating ideas, artistic intent, personal vision, and creating collaborative projects. Same as THTR:5610, DPA:5550.

DANC:6030 Graduate Majors Ballet III  1-3 s.h.
Advanced ballet technique and performance training for proficient dancers; physical and mental skills necessary for professional work—physical stamina, strength, flexibility, articulation, coordination, musicality, phrasing, understanding of basic physical concepts underlying clear and efficient movement, capacity to assimilate new movement material, awareness of the center of gravity and its role in mobilization and control of the body.

DANC:6040 Graduate Majors Modern III  1-3 s.h.
Advanced technical and performance training in modern dance; physical and mental skills necessary for professional work—physical stamina, strength, flexibility, articulation, coordination, musicality, phrasing, understanding of basic physical concepts underlying clear and efficient movement, capacity to assimilate new movement material, awareness of the center of gravity and its role in mobilization and control of the body, consciousness of personal movement choices and expressive range.

DANC:6050 Graduate Improvisation II  2 s.h.
Advanced improvisation.

DANC:6060 Graduate Seminar in Dance  2 s.h.
Research, careers, administrative, educational, professional, artistic topics.

DANC:6080 Graduate Production Practicum  1 s.h.
Scenery and costume design, lighting, audio/video, publicity.

DANC:6350 Graduate Choreography III  2 s.h.
Advanced choreographic concepts, methods, and applications with focus on the creative mind and choreographic process; concepts and experiences that support development of advanced choreographic skills and innovative dances.

DANC:6450 Graduate Choreography IV  3 s.h.
Advanced choreography concepts, methods, applications.

DANC:6540 Graduate Major Modern IV  1-2 s.h.
Professional technique and performance training in modern dance.

DANC:6880 Graduate Dance Performance  0-3 s.h.
Credit for rehearsal hours and performance of dance works in produced dance concerts. Requirements: audition and/or concert adjudication.

DANC:6990 Graduate Independent Choreography  arr.
Credit for creation of an independent choreographic project, developed under guidance of faculty advisor, that results in production of a dance work.

DANC:6991 Graduate Independent Study  arr.
Credit for individually designed project coordinated with a faculty advisor.

DANC:6992 Graduate Independent Performance Project  arr.
Credit for creative participation as a performer in a choreography project, developed under guidance of a faculty advisor, that results in the performance of a dance work.

DANC:7550 Graduate Modern Dance Technique Practicum  arr.
Advanced, in-depth understanding of teaching dance technique at the college level; emphasis on studio practice of technique through active participation in technique class; individualized research on technical and pedagogical approaches to dance; class taken with a faculty member during student’s teaching rotation to gain understanding of the teacher’s pedagogical approach across three levels of the majors-level technique curriculum. Requirements: completion of one semester of MFA program and good standing.

DANC:7560 Graduate Ballet Technique Practicum  arr.
Advanced, in-depth understanding of teaching dance technique at the college level; emphasis on studio practice of technique through active participation in technique class; individualized research on technical and pedagogical approaches to dance; class taken with a faculty member during student’s teaching rotation to gain understanding of the teacher’s pedagogical approach across three levels of the majors-level technique curriculum. Requirements: completion of one semester of MFA program and good standing.

DANC:7990 Thesis  arr.
Disability Studies

Coordinator

• Kenneth E. Mobily

Undergraduate certificate: disability studies
Web site: http://clas.uiowa.edu/hhp/undergraduate/disability-studies-certificate

Disability studies examines disability as a social, cultural, historical, and political phenomenon rather than focusing on its clinical, medical, or therapeutic aspects. It is an interdisciplinary and multidisciplinary field that draws on scholarship from diverse disciplines, including anthropology, architecture, the arts, communication and media studies, cultural studies, economics, gender studies, geography, global studies, history, law, literature, medicine, nursing, philosophy, policy studies, political science, religious studies, social work, and sociology.

Its multidisciplinary nature makes disability studies a good complement to a broad range of undergraduate majors.

The certificate program in disability studies is administered by the Department of Health and Human Physiology (p. 349).

Undergraduate Program of Study

• Certificate in Disability Studies

Certificate

The Certificate in Disability Studies requires a minimum of 19 s.h. of credit. The certificate program is open to current University of Iowa undergraduate students and to all individuals who hold a bachelor’s degree and are not enrolled in a graduate or professional degree program. Students must maintain a g.p.a. of at least 2.00 in work for the certificate.

The certificate program helps students expand their knowledge and awareness of disability issues and prepare for careers in public life. Students who complete the certificate develop:

• understanding of the history of disabilities in America;
• awareness of how culture and society define disability;
• the ability to interact with individuals from diverse backgrounds;
• a personal philosophy of treating people fairly, equitably, and thoughtfully; and
• greater understanding of and concern with public policy issues and active citizenship.

The Certificate in Disability Studies requires the following course work.

CORE COURSES

Students earn 11 s.h. by taking the following four core courses.

All of these:

DST:3101 Introduction to Disability Studies 3 s.h.
EDTL:4967 Integrated Disability Studies 2 s.h. Practicum
HIST:4203 Disability in American History 3 s.h.

And one of these:

EDTL:4940 Characteristics of Disabilities 3 s.h.
TR:3162 Therapeutic Recreation: Clientele 3 s.h.

FOCUSED ELECTIVES

Students earn a minimum of 8 s.h. in focused electives, which they select from courses in at least two of the following lists (maximum of 6 s.h. from any one list). They may count a maximum of 3 s.h. earned in courses numbered below 3000 toward this requirement.

Aging Studies

ASP:1800/CSD:1800/NURS:1800/SSW:1800/ 3 s.h.
TR:1800 Basic Aspects of Aging
ASP:3135 Global Aging 3 s.h.
ASP:3150 Psychology of Aging 3 s.h.
ASP:4165 Communication Disorders and Aging 2 s.h.

American Sign Language

ASL:3200 Topics in Deaf Studies 3 s.h.
ASL:3300 American Deaf Culture 3 s.h.
ASL:3400 Issues in ASL and Deaf Studies 3 s.h.
ASL:3500 Deafness in the Media 3 s.h.
ASL:3600 American Sign Language Literature 3 s.h.
ASL:4201 History of the American Deaf Community 3-4 s.h.
ASLE:3905 Teaching Deaf and Hard of Hearing Students 3-4 s.h.

American Studies

AMST:2025 Diversity and American Identities 3 s.h.

Anthropology

ANTH:3102 Medical Anthropology 3 s.h.

Communication Sciences and Disorders

CSD:1015 Introduction to Speech and Hearing Processes and Disorders 2 s.h.
CSD:3185 Hearing Loss and Audiometry 3 s.h.
CSD:4145 Developmental Language Disorders 3 s.h.
CSD:4147 Neurogenic Disorders of Speech 2 s.h.
CSD:4165 Communication Disorders and Aging 2 s.h.
CSD:5206 Language Disorders: Birth to Five Years 3 s.h.
CSD:5233 Aphasia 2 s.h.
CSD:5234 Acquired Cognitive-Communication Disorders 1 s.h.
CSD:5303 Evidence Based/Emerging Practices in Communication/Social Interaction for Individuals with Autism 1 s.h.
EDTL:7948 Contemporary Research in Behavioral Disorders 3 s.h.

Disability Studies

DST:3102 Culture and Community in Human Services 3 s.h.

Education

EDTL:3130 Adaptive Physical Education for the Elementary Classroom Teacher 2 s.h.
EDTL:4900 Foundations of Special Education 3 s.h.
EDTL:4921 Transition and Related Issues 3 s.h.
EDTL:4950 Behavioral and Social Interventions 3 s.h.
EDTL:4990 Interdisciplinary Issues in Disabilities 1-3 s.h.
EPLS:4180 Human Relations for the Classroom Teacher 3 s.h.
RCE:4195 Ethics in Human Relations and Counseling 3 s.h.
RCE:4197 Citizenship in a Multicultural Society 3 s.h.

**Geography**

GEOG:3110 Geography of Health 3 s.h.

**Health and Human Physiology**

HHP:2200 Physical Activity and Health 3 s.h.

**History**

HIST:4201 History of the American Deaf Community 3-4 s.h.

**Music**

MUS:1687 Orientation to Music Therapy 2 s.h.
MUS:3680 Music in Special Education 2-3 s.h.

**Nursing**

NURS:1030 Human Development and Behavior 3 s.h.
NURS:3712 Human Sexuality, Diversity, and Society 1-3 s.h.

**Psychological and Brain Sciences**

PSY:2301 Introduction to Clinical Psychology 3 s.h.
PSY:2930 Abnormal Psychology: Health Professions 3 s.h.
PSY:3320 Abnormal Psychology 3 s.h.

**Rehabilitation and Counselor Education**

RCE:5249 Psychiatric Disorders and Interventions 3 s.h.

**Social Work**

SSW:3847 Discrimination, Oppression, and Diversity 3 s.h.

**Therapeutic Recreation**

TR:3160 Introduction to Therapeutic Recreation 3 s.h.

**Courses**

**DST:3101 Introduction to Disability Studies** 3 s.h.
Introduction and overview of important topics and discussions that pertain to the experience of being disabled; contrast between medical and social construction models of disability; focus on how disability has been constructed historically, socially, and politically in an effort to distinguish myth and stigma from reality; perspective that disability is part of human experience and touches everyone; interdisciplinary with many academic areas that offer narratives about experience of disability.

**DST:3102 Culture and Community in Human Services** 2-3 s.h.
Division of Interdisciplinary Programs

**Director**
- Helena R. Dettmer

The Division of Interdisciplinary Programs includes six academic units: Enterprise Leadership, Global Health Studies, Interdepartmental Studies, International Studies, Latin American Studies, and Writing.

Of all the academic units within the division, three offer B.A. degrees, three offer a minor, and three offer a certificate.

Enterprise Leadership (p. 273) provides an option for students who want to focus on entrepreneurial business leadership. The major presents a unique blend of skills, theory, and content, encouraging students to apply their knowledge and skills to entrepreneurial and growing organizations. The program offers a combination of business and liberal arts approaches and allows students to hone their skills in innovation, entrepreneurship, communication, critical thinking, and leadership.

The Global Health Studies (p. 343) Program examines the processes influencing health and disease around the world. It considers not only the manifestations of significant diseases and public health and health care systems, but also the underlying forces and institutions—such as technology, politics, culture, legal structure, history, and economics—that collectively influence patterns of health and disease. This program offers a minor and an undergraduate and graduate certificate.

Interdepartmental Studies (p. 396) provides an alternative to traditional undergraduate majors. It gives students the opportunity to design an individualized plan of study or to choose a preapproved plan in applied human services, business studies, or health science. Each track includes course work from a variety of departments.

Interdepartmental Studies offers a B.A. degree.

International Studies (p. 415) is designed to help students learn to appreciate world cultures, focus on themes of global significance, and master varied disciplinary approaches used to study international issues. The program complements a wide range of academic degree programs and is an appropriate choice for many students who plan to pursue a double major. International Studies offers a B.A. degree and an undergraduate minor.

The Latin American Studies (p. 446) Program focuses on the history, politics, social organization, economy, geography, music, religion, art, and literature of Central and South America, Mexico, and the Caribbean; and draws on faculty expertise in a range of academic areas. This program offers a minor and an undergraduate certificate.

The Writing (p. 638) Program certificate allows students to explore writing and develop their own writing skills in a wide range of genres and for varied purposes, including creative writing (fiction, nonfiction, poetry); writing for the professions, such as the arts, business, journalism, or science; writing for organizations; and writing related to personal interests. The Writing Program offers an undergraduate certificate.
Division of Performing Arts

**Director**
- Alan MacVey

**Undergraduate certificate:** performing arts entrepreneurship

**Web site:** [http://dpa.uiowa.edu/](http://dpa.uiowa.edu/)

The Division of Performing Arts includes the Department of Dance (p. 215), the School of Music (p. 473), and the Department of Theatre Arts (p. 625). The division fosters interdisciplinary collaboration among these units, coordinates artistic and academic activities, and sponsors a full array of performances and symposia. Performances are supported by professional staff in the division’s Performing Arts Production Unit.

Each of the division’s individual academic units offers undergraduate and graduate courses and degree programs in creative, performance, scholarly, and theoretical areas. Together they present an extensive schedule of dance productions, faculty and student recitals, ensemble concerts, and mainstage and gallery theater productions.

The division offers the undergraduate Certificate in Performing Arts Entrepreneurship in partnership with the John Pappajohn Entrepreneurial Center (Tippie College of Business). The certificate program combines courses in accounting, marketing, and financial management with those focused on arts management and leadership practices in commercial as well as nonprofit arts organizations. See Performing Arts Entrepreneurship (p. 498) in the Catalog.

The division also is home to an arts outreach program, Arts Share.

For information about the division and its programs and events, visit the Division of Performing Arts web site.
Division of World Languages, Literatures, and Cultures

Director
• Russell Ganem

Faculty: http://clas.uiowa.edu/dwllc/people
Web site: http://clas.uiowa.edu/dwllc/

The Division of World Languages, Literatures, and Cultures includes several academic units: the Departments of Asian and Slavic Languages and Literatures, French and Italian, German, and Spanish and Portuguese, and the programs in American Sign Language, Comparative Literature, Second Language Acquisition, and Translation. A new minor also is available—translation for global literacy. In addition to providing administrative leadership for all of its units, the division fosters interdisciplinary scholarship in languages, literatures, and cultures. It encourages synergy and collaboration among its faculty members and enhances opportunities for cross-cultural course development and research.

Undergraduate and graduate programs in the division serve students with varied interests and career aspirations, educating them to become global citizens who understand and are understood by diverse populations. Students are trained to be critical thinkers and problem solvers, capable scholars, lucid writers, and proficient speakers.

The division offers instruction in a wide array of languages and in the cultures associated with them:

- American Sign Language (p. 41) Program: American Sign Language and deaf studies
- Department of Asian and Slavic Languages and Literatures (p. 100): Chinese, Czech, Hindi-Urbu, Japanese, Korean, Russian, Sanskrit
- Department of French and Italian (p. 291): Arabic, French, Italian, Swahili
- Department of German (p. 336): German
- Department of Spanish and Portuguese (p. 596): Portuguese, Spanish

In addition to providing language instruction, the division focuses on theoretical and applied linguistics; non-Anglophone literatures and cultures, including those of bilingual, deaf, postcolonial, and heritage communities; and aesthetics, cultural theory, and creative writing in languages other than English.

The division’s Second Language Acquisition (p. 565) Program brings multidisciplinary resources together to examine the processes that underlie non-native-language learning. The Translation (p. 635) Program explores the literary, cultural, and historical contexts of work and their linguistic, aesthetic, and ideological dimensions while it builds skills for translating works from one language to another. The Comparative Literature (p. 193) Program addresses culture across regions and languages in relation to literature, social theory and philosophy, history, and other disciplines. The minor in translation for global literacy (p. 637) introduces undergraduate students to the exploration of translation both as a practical application and as a tool for global literacy.

The division also administers the Language Media Center, which provides facilities for traditional language laboratory work as well as for language video and computer-based activities. The center sponsors a multimedia development studio, where faculty members and graduate students produce and test media-based materials for language instruction.

Courses

World Languages, Literatures, and Cultures, Lower-Level Undergraduate

WLLC:1100 Contraception Across Time and Cultures 3 s.h.
Methods and history of contraception and abortion; issues of unwanted pregnancy and birth control in fiction, film, and media around the world. Same as GHS:1100, CLSA:1100.

WLLC:1355 Approaches to Global Cultural Studies 3 s.h.
Framework for thinking about global perspectives on culture; examination of themes within a transnational context; analysis of cultural expression from national and linguistic contexts.

WLLC:2550 Mardi Gras and More: Cultures of Carnival 3-4 s.h.
Literature and customs associated with carnival from antiquity through present day; readings on theories of carnivalesque (Mikhail Bakhtin, Peter Burke, and others); materials from three distinct carnival cultures—Renaissance Europe (Francois Rabelais, German carnival plays), 19th-century New Orleans, and present day Rio de Janeiro. GE: Values, Society, and Diversity. Same as GRMN:2550.

World Languages, Literatures, and Cultures, Upper-Level Undergraduate and Graduate

WLLC:3185 Global Women’s Cinema 3 s.h.
Introduction to contemporary women’s cinema and feminist filmmaking from around the world; emphasis on post-1968 period and cinema produced outside the United States. Same as GWSS:3185, CINE:3185.

WLLC:3191 International Literature Today 1,3 s.h.
English majors may apply this course to the following area and/or period requirement. AREA: Transnational Literature and Postcolonial Studies. PERIOD: 20th/21st-Century Literature. Same as ENGL:3595, IWP:3191.

WLLC:3700 Topics in Global Cinema 3 s.h.
Identification of new models and methods to investigate cinema’s relationship to current global issues beyond traditional scholarly focus in Western Europe and the United States; exploration of an emerging field, moving away from the paradigm of national cinema and bringing together shared theoretical frameworks while acknowledging different historical and cultural contexts. Same as JPNS:3700, ASIA:3700.
WLLC:3834 Arab Spring in Context: Media, Religion, and Geopolitics  3 s.h.
Protest movements that started in Tunisia in 2011 and swept across North Africa and the Middle East transforming Arab and Islamic societies in radically different ways; function of social media, satellite television, communication technology; influence of religious leaders and groups on some protest outcomes; impact of wealth and geopolitics on social fabric of Islamic societies within and outside Arab countries. Requirements: for COMM:3834 — g.p.a. of at least 2.50, completion of Foundations of Communication requirement, and 6 s.h. of intermediate-level course work. Same as RELS:3834, IS:3834, JMC:3146, COMM:3834.

WLLC:4512 Topics in Global and Transnational Culture  3-4 s.h.
In-depth look at a theme in cultural expression arising from interactions between countries and regions; focus on contemporary or historical issues; use of materials ranging from literature and the visual arts to music, mass media, and more; general processes through which cultures are formed in mutual and uneven relationships; research project. Recommendations: completion of an international and global issues GE course. Same as GRMN:4512, ARAB:4512.

WLLC:4800 Topics in Global and Transnational Culture  arr.
In-depth look at a theme in cultural expression arising from interactions between countries and regions; focus on contemporary or historical issues; material from literature, visual arts, music, mass media, and more; general process through which cultures are formed in mutual and uneven relationships; original research project. Requirements: a general education course in international and global issues.

World Languages, Literatures, and Cultures, Graduate
WLLC:5000 Teaching and Learning Languages  3 s.h.
Readings in pedagogical theory and practice, second language acquisition; experience designing activities for teaching and assessment with critiques based on current theories and approaches; development of reflective practices toward one's language teaching. Same as SLA:5000, FREN:5000, SPAN:5000, GRMN:5001.

WLLC:6320 Topics in Contemporary Critical Theory  3 s.h.
Focused discussion of critical discourses and paradigms that have contributed to development of contemporary literary and cultural theory.

Translation, Lower-Level Undergraduate
TRNS:1017 Workshop in Literary Magazine Publishing  2 s.h.
Hands-on introduction to literary magazine publishing; major differences between print and digital publishing, the processes of design, layout, soliciting work, editing copy, proofing, promotion, and distribution; University of Iowa and Iowa City community resources; editors and writers share their expertise through a series of informal question-and-answer sessions and task-based assignments.

TRNS:1018 Workshop in Literary Review Writing  2 s.h.
Hands-on introduction to literary review; process of selecting books (poetry, fiction, creative nonfiction) for review; writing, revising, and submission of work; University of Iowa and Iowa City community resources; editors and writers share their expertise through a series of informal question-and-answer sessions and task-based assignments.

TRNS:2179 Undergraduate Translation Workshop  3 s.h.
Translation exercises, discussion of translation works in progress; alternative strategies for translation projects. Requirements: working knowledge of a language other than English. Same as ENGL:2810.

TRNS:2499 Undergraduate Translation Seminar  3 s.h.
Translation studies for undergraduates; topics related to practice of literary translation.

Translation, Upper-Level Undergraduate and Graduate
TRNS:3201 Workshop in Japanese Literary Translation  3 s.h.
Workshop in translation from Japanese to English, with emphasis on literary translation; issues in theory and practice of translation; special features of Japanese as a source language for translation. Corequisites: JPNS:3001, if not taken as a prerequisite. Same as JPNS:3201.

TRNS:3202 Workshop in Chinese Literary Translation  3 s.h.
Translation from Chinese to English with emphasis on literary translation; issues in theory and practice of translation; special features of Chinese as a source language for translation. Prerequisites: CHIN:3102. Same as CHIN:3201.

TRNS:3480 Literature and Translation  3 s.h.
Translation in the broadest sense; originality, authority, authorship, accuracy, ownership, audience; issues problematizing differences between medium and message. Same as SLAV:3480.
**TRNS:4100 Approaches to Critical Theory** 3 s.h.
Introduction to major critical approaches in literary and cultural theory from a variety of traditions; studying existing models, students learn to think theoretically about language and society, and to orient themselves among existing theoretical discourses, interrogating the latter critically in terms of their own perspectives and theoretical needs; selections from influential works, shared class discussion, and presentations; no prior knowledge in the area of critical theory is presumed. Same as CL:4100.

**TRNS:4481 Introduction to Computer-Assisted Translation** 1 s.h.
Translation memory, terminology management, multimodal translation, and project management to increase proficiency in a range of technological skills; evolving translation technologies emphasize learning skills required to employ tools of today and effectively learn to use those of tomorrow; use of translation technology in freelance and agency settings from document receipt through delivery. Requirements: completion of General Education Program rhetoric and interpretation of literature requirements.

**TRNS:4497 Techniques of Translation** 3 s.h.
Prerequisites: FREN:3300. Same as FREN:4890.

**Translation, Graduate**

**TRNS:5205 International Translation Workshop** 1-3 s.h.
International writers pair with University of Iowa translators to write new works of poetry and fiction in English; second-language fluency not required for international writers. Same as IWP:5205.

**TRNS:5491 Translation Internship** arr.

**TRNS:5500 Advanced Translation Practice** 1-3 s.h.
Substantial translation project guided by a faculty advisor; readings and assignments designed to help translator with particular tasks and challenges presented by the project; translation and critical/reflective writing. Prerequisites: TRNS:6459 and TRNS:7460. Requirements: advanced-level translator in literary translation M.F.A. program.

**TRNS:6050 Independent Study** arr.

**TRNS:6400 Thesis** arr.
Translation thesis with critical introduction.

**TRNS:6459 Issues in Translation** 3 s.h.
Contemporary and historical theories.

**TRNS:7460 Translation Workshop** 4 s.h.
Requirements: at least one foreign language. Same as IWP:7460.
Earth and Environmental Sciences

Chair
• Charles "Tom" Foster Jr.

Undergraduate major: geoscience (B.A., B.S.)
Undergraduate minor: geoscience
Graduate degrees: M.S. in geoscience; Ph.D. in geoscience
Faculty: http://clas.uiowa.edu/ees/people
Web site: http://clas.uiowa.edu/ees/

Faculty and students in the Department of Earth and Environmental Sciences study the physical, chemical, and biological systems of Earth. Using modern observational, analytical, and computational methods, they examine how the planet's interior, surface, hydrosphere, biosphere, and atmosphere have evolved since Earth was born in the solar system 4.6 billion years ago. Topics commonly studied in the department include how plate movements cause earthquakes, volcanoes, and mountain building; global climate change and how climate change and catastrophic events cause changes in biodiversity; mass extinctions and patterns of evolution through Earth history; how and where economic resources are generated on Earth; and how these resources are located and used in modern society.

The earth and environmental sciences curriculum provides students with hands-on experience analyzing rocks, minerals, fossils, soils, and waters, generally in a small classroom setting. Much of this experience is obtained in laboratory and field courses. Field courses include travel to other states or countries to view Earth's materials and fossils in the context of their natural surroundings.

The master's degree in geoscience is regarded by most hiring agencies as the working degree, but an undergraduate degree is fully satisfactory in certain teaching, government, and industry situations. The doctoral degree is required for college and university faculty positions and for some research positions in industry.

Many of the University of Iowa's geoscience graduates find employment with resource companies, environmental corporations, and educational institutions. Others continue in graduate school or take jobs with government or conservation agencies. Some intend to enter law, business, or fields such as urban planning, environmental studies, engineering, archaeology, science education, or oceanography as advanced areas. Geoscience provides skills useful for all of these fields.

The department offers a variety of courses appropriate for nonmajors, including several approved for the Natural Sciences requirement of the General Education Program (p. 313); see "Courses for Nonmajors" below.

Many of the department's faculty members are involved in the interdisciplinary Environmental Sciences (p. 278) Program, and a number of the department's courses satisfy requirements of the Certificate in Sustainability (p. 1248).

Undergraduate Programs of Study

• Major in geoscience (Bachelor of Arts, Bachelor of Science)
• Minor in geoscience

Students majoring in geoscience take at least an academic year's work in three allied scientific areas—physics, chemistry, and mathematics—and a semester of biology in addition to a course in each major area of geology.

Geoscience students may elect to pursue an additional major or a minor in a related discipline, usually chemistry, physics, biology, engineering, environmental sciences, or anthropology. See Majors, Minors, and Certificates under Current Students on the College of Liberal Arts and Sciences web site.

Bachelor of Science

The Bachelor of Science with a major in geoscience requires a minimum of 120 s.h., including at least 70 s.h. (19 courses) of work for the major (39 s.h. in earth and environmental sciences courses and at least 31 s.h. in supporting disciplines). Students must maintain a g.p.a. of at least 2.00 in all courses for the major and in all UI courses for the major. They also must complete the College of Liberal Arts and Sciences General Education Program (p. 313). Transfer students must complete a minimum of 15 s.h. of course work in the Department of Earth and Environmental Sciences.

The geoscience major for the B.S. is designed to prepare students for immediate employment after graduation or to enter a graduate program in geology.

The department recommends that students fulfill the General Education Program's World Languages requirement with French, German, Russian, or Spanish and the Social Sciences requirement with approved course work in economics, geography, or anthropology.

The geoscience major for the Bachelor of Science requires the following course work:

EARTH AND ENVIRONMENTAL SCIENCES

One of these:

EES:1030 Introduction to Earth Science 4 s.h.
EES:1050 Introduction to Geology (preferred) 4 s.h.

All of these:

EES:1040 Evolution and the History of Life 4 s.h.
EES:2410 Mineralogy 4 s.h.
EES:2831 Geologic Field Methods 3 s.h.
EES:3300 Sedimentary Geology 4 s.h.
EES:3500 Igneous and Metamorphic Petrology 4 s.h.
EES:3840 Structural Geology 4 s.h.
EES:4832 Geologic Field Analysis 3 s.h.

At least two geoscience electives (see “Recommended Electives” below) 6-7 s.h.

One of these:

EES:3210 Principles of Paleontology 3 s.h.
EES:4490 Elements of Geochemistry 3 s.h.
EES:4630 Hydrogeology 3 s.h.
232  Earth and Environmental Sciences

EES:4790 Engineering Geology  3 s.h.
EES:4800 Solid Earth Geophysics  3 s.h.

**MATHEMATICS**
At least 8 s.h. of calculus, including one of these:

- MATH:1560 Engineering Mathematics II: Multivariable Calculus  4 s.h.
- MATH:1860 Calculus II  4 s.h.

And:

An additional course in mathematics, computer science, or statistics numbered MATH:2000 or above, or CS:1110 or above, or STAT:2010 or above

**CHEMISTRY**
B.S. students must complete at least 8 s.h. of college-level chemistry, including the following sequence or equivalent courses or more advanced courses. Chemistry courses numbered below CHEM:1110 Principles of Chemistry I do not count toward this requirement.

CHEM:1110 & CHEM:1120 Principles of Chemistry I-II  8 s.h.

**PHYSICS**
B.S. students must complete at least 8 s.h. of college-level physics, as follows. Physics courses numbered below PHYS:1511 College Physics I do not count toward this requirement.

One of these sequences:

- PHYS:1511-PHYS:1512 College Physics I-II  8 s.h.
- PHYS:1611-PHYS:1612 Introductory Physics I-II  8 s.h.

**BIOLOGY**
B.S. students must complete at least one biology course that includes a laboratory (4 s.h.). Students with an interest in paleontology are encouraged to take BIOL:1411 Foundations of Biology and BIOL:1412 Diversity of Form and Function.

**RECOMMENDED ELECTIVES**
All B.S. students should take elective courses from the following groups in order to broaden their undergraduate experience and prepare themselves for graduate study or professional employment. Students who have clear career goals are advised to take three or more elective courses from the group that fits their needs most closely. Students also may seek a broad education in geoscience by choosing elective courses from a number of groups.

**Quaternary Geology**
- EES:3020 Earth Surface Processes  3 s.h.
- EES:3100 Introduction to Applied Remote Sensing  4 s.h.
- EES:3360 Soil Genesis and Geomorphology  3 s.h.
- EES:3380 Fluvial Geomorphology  3 s.h.
- EES:4490 Elements of Geochemistry  3 s.h.
- EES:4520 Isotope Geochemistry  3 s.h.
- EES:4620 Approaches to Geoarchaeology  3 s.h.
- EES:4630 Hydrogeology  3 s.h.
- EES:4720 Glacial and Pleistocene Geology  3 s.h.

**Environmental Geology**
- EES:1400 Natural Disasters  3 s.h.
- EES:3070 Marine Ecosystems and Conservation  3 s.h.
- EES:3080 Introduction to Oceanography  2 s.h.
- EES:3100 Introduction to Applied Remote Sensing  4 s.h.
- EES:3380 Fluvial Geomorphology  3 s.h.
- EES:3390 Integrated Watershed Analysis  3 s.h.
- EES:4490 Elements of Geochemistry  3 s.h.
- EES:4520 Isotope Geochemistry  3 s.h.
- EES:4630 Hydrogeology  3 s.h.
- EES:4680 Field Methods in Hydrologic Science  3 s.h.
- EES:4790 Engineering Geology  3 s.h.
- EES:4800 Solid Earth Geophysics  3 s.h.
- EES:4870 Applied Geostatistics  3 s.h.

**Geochemistry**
- EES:3410 Analytical Methods  2 s.h.
- EES:4490 Elements of Geochemistry  3 s.h.
- EES:4520 Isotope Geochemistry  3 s.h.
- EES:4630 Hydrogeology  3 s.h.
- EES:4870 Applied Geostatistics  3 s.h.
- EES:5820 Tectonics  3 s.h.

**Tectonics/Petrology**
- EES:1400 Natural Disasters  3 s.h.
- EES:3410 Analytical Methods  2 s.h.
- EES:4490 Elements of Geochemistry  3 s.h.
- EES:4520 Isotope Geochemistry  3 s.h.
- EES:4750 Mineral and Petroleum Exploration Geology  3 s.h.
- EES:4800 Solid Earth Geophysics  3 s.h.
- EES:5820 Tectonics  3 s.h.

**Sedimentary Geology**
- EES:3080 Introduction to Oceanography  2 s.h.
- EES:3300 Sedimentary Geology  4 s.h.
- EES:3380 Fluvial Geomorphology  3 s.h.
- EES:3770 Global Stratigraphy  3 s.h.
- EES:4490 Elements of Geochemistry  3 s.h.
- EES:4520 Isotope Geochemistry  3 s.h.
- EES:4750 Mineral and Petroleum Exploration Geology  3 s.h.
- EES:5820 Tectonics  3 s.h.

**Paleobiology**
- EES:3070 Marine Ecosystems and Conservation  3 s.h.
- EES:3080 Introduction to Oceanography  2 s.h.
- EES:3210 Principles of Paleontology  3 s.h.
- EES:3220 Evolution of the Vertebrates  3 s.h.
- EES:3300 Sedimentary Geology  4 s.h.
- EES:3770 Global Stratigraphy  3 s.h.
- EES:4420 Vertebrate Osteology and Phylogeny  3 s.h.
- EES:4440 Phylogenetics and Biodiversity  3 s.h.
EES:4450 Morphometrics 1-3 s.h.
EES:4490 Elements of Geochemistry 3 s.h.
EES:4520 Isotope Geochemistry 3 s.h.
EES:4700 Evolution of Ecosystems 3 s.h.
EES:4710 Evolution of Plants 3 s.h.
EES:5820 Tectonics 3 s.h.

**INDEPENDENT RESEARCH OPTION FOR GEOSCIENCE MAJORS**

A junior or senior who is ready to pursue independent research for credit in geoscience may assist a faculty member or graduate student with a current research project in EES:2190 Directed Study or may initiate a small-scale project involving a combination of field, laboratory, and library investigation in EES:3190 Directed Study. Independent study is encouraged and may lead to an honors thesis in EES:4999 Honors Thesis in Geoscience or a senior thesis in EES:4990 Senior Thesis in Geoscience that may be published subsequently.

**Bachelor of Arts**

The Bachelor of Arts with a major in geoscience requires a minimum of 120 s.h., including at least 51 s.h. of work for the major (at least 35 s.h. in earth and environmental sciences courses and at least 16 s.h. in supporting disciplines). Students must maintain a g.p.a. of at least 2.00 in all courses for the major and in all UI courses for the major. They also must complete the College of Liberal Arts and Sciences General Education Program (p. 313).

Transfer students must complete a minimum of 15 s.h. of course work in the Department of Earth and Environmental Sciences.

The geoscience major for the B.A. is designed to provide students with a varied background in geology and a broader choice of electives than is practical in the Bachelor of Science program. The major for the Bachelor of Arts is intended for students who are interested in the fundamentals of geology or earth science teaching (see "B.A. or B.S. with Teacher Licensure" below). Completing the minimum requirements for this degree may not adequately prepare a student for an entry-level professional job in geology.

The department recommends that students fulfill the General Education Program's World Languages requirement with French, German, Russian, or Spanish and the Social Sciences requirement with approved course work in economics, geography, or anthropology.

The geoscience major for the Bachelor of Arts requires the following course work.

**EARTH AND ENVIRONMENTAL SCIENCES**

This course:

EES:2410 Mineralogy 4 s.h.

One of these:

EES:1030 Introduction to Earth Science 4 s.h.
EES:1050 Introduction to Geology 4 s.h.

One or both of these:

EES:1040 Evolution and the History of Life 4 s.h.
EES:3210 Principles of Paleontology 3 s.h.

At least three of these:

EES:3300 Sedimentary Geology 4 s.h.
EES:3360 Soil Genesis and Geomorphology 3 s.h.
EES:3380 Fluvial Geomorphology 3 s.h.
EES:3500 Igneous and Metamorphic Petrology 4 s.h.
EES:3840 Structural Geology 4 s.h.
EES:4630 Hydrogeology 3 s.h.

And:

Geoscience electives 12 s.h.

**MATHEMATICS**

B.A. students must complete the following course work in mathematics.

College-level mathematics (may include computer science and statistics) 10 s.h.

**CHEMISTRY**

B.A. students must complete at least two college-level chemistry courses, as follows. Chemistry courses numbered below CHEM:1070 General Chemistry I do not count toward this requirement.

One of these sequences:

CHEM:1070 & CHEM:1080 General Chemistry I-II 6 s.h.
CHEM:1110 & CHEM:1120 Principles of Chemistry I-II 8 s.h.

**FIELD REQUIREMENT**

To complete the major, B.A. students must have field experience. They may take two semesters of EES:1180 Geology Field Trip: Selected National Parks, or two semesters of EES:3160 Field Trip, or one semester of each of the two courses. Or they may take one semester of EES:2831 Geologic Field Methods or the Iowa Lakeside Laboratory (p. 1212) session.

EES:1180 Geology Field Trip: Selected National Parks 2 s.h.
EES:2831 Geologic Field Methods 3 s.h.
EES:3160 Field Trip 2 s.h.

One natural science session at Iowa Lakeside Laboratory for a minimum of 3 s.h.

**INDEPENDENT RESEARCH OPTION FOR GEOSCIENCE MAJORS**

A junior or senior who is ready to pursue independent research for credit in geoscience may assist a faculty member or graduate student with a current research project in EES:2190 Directed Study or may initiate a small-scale project involving a combination of field, laboratory, and library investigation in EES:3190 Directed Study. Independent study is encouraged and may lead to an honors thesis in EES:4999 Honors Thesis in Geoscience or a senior thesis in EES:4990 Senior Thesis in Geoscience that may be published subsequently.

**B.A. or B.S. with Teacher Licensure**

Geoscience majors interested in earning licensure to teach in elementary and/or secondary schools must complete the College of Education’s Teacher Education Program (TEP) in addition to the requirements for the major and all requirements for graduation. The TEP requires several
College of Education courses and student teaching. Contact the Office of Education Services for details.

Students must satisfy all degree requirements and complete Teacher Education Program licensure before degree conferral.

Students with a strong interest in science teaching may complete a major offered by the Science Education Program. Students choose one of five emphases—biology, chemistry, earth science, physics, or all-science—and earn a Bachelor of Science degree. They may apply for admission to the Teacher Education Program. See Science Education (p. 788) in the Catalog.

Four-Year Graduation Plan

The following checkpoints list the minimum requirements students must complete by certain semesters in order to stay on the University’s Four-Year Graduation Plan. (Courses in the major are those required to complete the major; they may be offered by departments other than the major department.)

Note: These checkpoints show the range of required course work; the major for the Bachelor of Arts requires a minimum of 17 courses; the major for the Bachelor of Science requires 19.

The geoscience major requires field trip experiences, many of which take place during breaks in or between semesters or during the summer session. These checkpoints do not include the field trip requirements.

Before the third semester begins: competence in math through trigonometry and the first required chemistry course

Before the fifth semester begins: three to five courses in the major, including the remainder of the chemistry requirement and continuation of the mathematics requirement

Before the seventh semester begins: 7-11 courses in the major and at least 90 s.h. earned toward the degree

Before the eighth semester begins: 10-14 courses in the major

During the eighth semester: enrollment in all remaining course work in the major, all remaining General Education courses, and a sufficient number of semester hours to graduate

Honors in the Major

Students majoring in geoscience have the opportunity to graduate with honors in the major. Departmental honors students must maintain a cumulative g.p.a. of at least 3.33 in all University of Iowa course work and in all geoscience courses. To graduate with honors in geoscience, students must complete a senior thesis, registering in EES:4999 Honors Thesis in Geoscience. They must obtain approval of their honors thesis contract from their advisor and the department’s undergraduate committee, and they must earn a grade of B or higher in EES:4999.

In addition to honors in their majors, undergraduate students have a variety of opportunities for honors study and activities through membership in the University of Iowa Honors Program; visit Honors at Iowa to learn about the University’s honors program.

Minor

The minor in geoscience requires a minimum of 15 s.h. in geoscience courses, including 12 s.h. in courses considered advanced for the minor offered by the Department of Earth and Environmental Sciences at the University of Iowa. Mineralogy [EES:2410], Geologic Field Methods [EES:2831], and all earth and environmental sciences courses numbered 3000 or above are considered advanced for the minor. Students must maintain a g.p.a. of at least 2.00 in all courses for the minor and in all UI courses for the minor. Course work in the minor may not be taken pass/nonpass.

College-level courses in mathematics, physics, chemistry, and biology usually are required as collateral work for geoscience students. Those seeking a minor in geoscience should be sufficiently prepared in the areas of supporting sciences before they take advanced courses in geoscience.

Recommended advanced courses in geoscience that deal with important areas of earth materials and earth processes are as follows.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EES:2410</td>
<td>Mineralogy</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>EES:2831</td>
<td>Geologic Field Methods</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>EES:3020</td>
<td>Earth Surface Processes</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>EES:3070</td>
<td>Marine Ecosystems and Conservation</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>EES:3080</td>
<td>Introduction to Oceanography</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>EES:3210</td>
<td>Principles of Paleontology</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>EES:3300</td>
<td>Sedimentary Geology</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>EES:3360</td>
<td>Soil Genesis and Geomorphology</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>EES:3380</td>
<td>Fluvial Geomorphology</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>EES:3390</td>
<td>Integrated Watershed Analysis</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>EES:3500</td>
<td>Igneous and Metamorphic Petrology</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>EES:3840</td>
<td>Structural Geology</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>EES:4490</td>
<td>Elements of Geochemistry</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>EES:4790</td>
<td>Engineering Geology</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>EES:4800</td>
<td>Solid Earth Geophysics</td>
<td>3 s.h.</td>
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<tr>
<td>EES:5820</td>
<td>Tectonics</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

Courses for Nonmajors

Each year more than 1,800 students enroll in Department of Earth and Environmental Sciences introductory courses that are approved for General Education; look for courses with the prefix EES under “Natural Sciences” in the General Education Program (p. 313) section of the Catalog.

The department also offers the following upper-level courses with few or no prerequisites.

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
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<td>Earth Surface Processes</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>EES:3070</td>
<td>Marine Ecosystems and Conservation</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>EES:3080</td>
<td>Introduction to Oceanography</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>EES:3100</td>
<td>Introduction to Applied Remote Sensing</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>EES:3210</td>
<td>Principles of Paleontology</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

National Honor Society

The department sponsors a chapter of Sigma Gamma Epsilon National Honor Society for the Earth Sciences. Students with an overall g.p.a. of at least 2.80 and at least...
3.20 in geoscience courses are considered for membership after they have completed a minimum of 16 s.h. of course work in geoscience. Consult the departmental honors advisor for more information.

**Graduate Programs of Study**

- Master of Science in geoscience
- Doctor of Philosophy in geoscience

The Master of Science program in geoscience prepares students for employment in industry or for doctoral study. The Doctor of Philosophy program is designed to prepare students for future employment in higher education or research and to bring them to the forefront of a specialized area of geoscience.

All geoscience graduate students must meet the admission and degree requirements of the Graduate College; see the Manual of Rules and Regulations of the Graduate College (particularly sections IX, X, and XII). They also should acquaint themselves with the University calendar, for deadline dates and so forth.

All entering graduate students are required to enroll in EES:5070 Geologic Orientation during the fall semester of their first year in the graduate program.

The department provides detailed information about current graduate degree requirements and timelines for making satisfactory progress toward a degree in the document "The University of Iowa Guidelines for Graduate Study in Earth and Environmental Sciences"; see Graduate Student Guidelines under Graduate Program on the Department of Earth and Environmental Sciences web site.

Throughout their graduate study, all M.S. and Ph.D. students must maintain a g.p.a. of at least 3.00 in all course work required for their degree and in all graduate-level geoscience course work. Students whose grade-point average drops below 3.00 are placed on academic probation.

Geoscience graduate students are encouraged to present their research at local, regional, national, or international meetings. The department provides partial funding for travel to such meetings.

**Master of Science**

The Master of Science degree in geoscience requires a minimum of 30 s.h. of graduate credit. The program is designed primarily to prepare students for employment in industry or for study toward a Ph.D. degree. M.S. students may count up to 8 s.h. of research credit toward the 30 s.h. required for the degree. They must earn at least 24 s.h. toward the degree in University of Iowa courses taken after they enroll in the program. M.S. students also must complete EES:5010 Geoscience Seminar Series each semester until they defend their thesis.

During the second semester of study, each M.S. student should propose an advisory committee of at least three faculty members to the department chair for approval. M.S. thesis students are responsible for obtaining their advisory committee’s approval of a suitable program of course work and for satisfactory development of research plans as outlined in a thesis proposal, which should be completed and approved by the department chair before the end of the second semester of full-time study. The thesis typically has depth and breadth similar to those of a published research paper. Thesis students must deliver a half-hour public presentation of their thesis, followed by an oral defense. They also are required to present their research at a local, regional, national, or international meeting approved by the department chair before they may graduate.

**Doctor of Philosophy**

The Doctor of Philosophy degree in geoscience requires a minimum of 72 s.h. of graduate credit. The program is designed to prepare students for future employment in higher education or research and to bring them to the forefront of a specialized area of geoscience.

The Ph.D. requires a dissertation, which has the approximate research content of three published papers.

Ph.D. students usually enter the program with established fields of interest and a research advisor already selected. Under exceptional circumstances, a student may be admitted to the Ph.D. program without an established field of interest.

Entering Ph.D. students must consult with a research advisor or the department’s director of graduate study before they enroll in courses. By the first month of their second semester of doctoral study, all Ph.D. students must select an advisor. Each student also must select a thesis topic and forward it to the department chair for approval by the end of the first month of the second semester of doctoral study.

Within broad limits, Ph.D. students should select courses that reflect their individual needs, interests, and talents; their advisor and advisory committee must approve their course selections.

During the second semester of doctoral study, each Ph.D. student should propose an advisory committee of at least five faculty members to the department chair for approval. Before the end of the second semester of doctoral study, each student must obtain his or her committee’s approval of a suitable plan of study to be submitted to the department chair for approval. In consultation with the advisor and other faculty members, each doctoral candidate prepares a formal dissertation proposal approved by their committee and submitted to the department chair for approval by the end of the candidate’s third semester of doctoral study.

Students are required to include in their plan of study at least 18 s.h. of regular course work taught by tenured or tenure-track faculty members of the Department of Earth and Environmental Sciences. Students must earn the 18 s.h. after being admitted to and enrolling in the Ph.D. program. Directed study and research credit do not count toward the required 18 s.h.

Ph.D. students must enroll in EES:5010 Geoscience Seminar Series each semester they are registered until they successfully defend their dissertation, or for two consecutive semesters after the semester in which they pass their comprehensive examination, whichever comes first.

After earning their first 24 s.h. of graduate credit, Ph.D. students must be enrolled at least two consecutive semesters in full-time study (at least 9 s.h. per semester) at the University of Iowa; or they must be enrolled three consecutive semesters for at least 6 s.h. per semester at the University, during which time they hold at least
Resources and equipment available for research in the Department of Earth and Environmental Sciences include the following.

**Computer facilities:** three teaching classrooms with 10-12 networked PC workstations; a computing classroom with 20 PCs and 10 Mac workstations with GIS, GMS, remote sensing, image analysis, and specialized computational software packages; a student computer room with six PCs and two Macs; and a number of multiprocessor workstations in research laboratories.

**Electron microprobe:** JOEL JXA-8230 electron probe microanalyzer with five wavelength-dispersive spectrometers capable of quantitatively analyzing a full spectrum of elements in solid materials to a spot size as small as one micron.

**Environmental and Hydrogeology Laboratory:** permeameters and tensionometers; pumping and slug/bail test units with transducers and data-loggers; water-quality analysis facility; advanced groundwater modeling and geostatistics software; advanced data logging systems for field research; 3-D sensor arrays (wind and water systems); and facilities for field instrumentation design and construction.

**Environmental Instrumentation Laboratories:** storage, testing, and teaching facility focusing on field instrumentation; assembly, housing, and testing of climatic, meteorological, fluvial, water quality and associated environmental instrumentation data recording systems and sampling systems.

**Geomorphic Computing Laboratory:** high-end visualization, digitizing, remote sensing and GIS systems; and high-end multiprocessor workstations.

**Morphometric laboratories:** reflex microscope and microscribe for capturing 3-D data; high-resolution digital cameras and microscopes for 2-D image analysis; and laboratories for micro- and macro-fossil preparation.

**Paleontological Repository:** more than a million specimens, including some 25,000 type and referred specimens, with 6,000-7,000 primary types; invertebrate, vertebrate, and plant fossils of all geologic ages, and more than 90 percent Paleozoic invertebrates; the fifth-largest university collection in North America (CONARIP 1977).

**Petrology and geochemistry laboratories:** laser-ablation inductively coupled plasma mass spectrometer (LA-ICPMS); clean laboratory for preparation of samples for elemental and isotopic analysis; alpha- and gamma-spectrometry laboratories; image analysis; petrographic microscopes; photo microscopy; wet-chemistry facilities; rock preparation and mineral separation; UNIX, Windows, and Mac workstations for data analysis and modeling; and one atm gas-mixing furnace for melt inclusion homogenization.

**Quaternary Materials Laboratory:** pipette grain-size analysis apparatus; chittick apparatus; Sedigraph 5100 X-ray particle-size analyzer; Horiba Camsizer L digital image particle analyzer; wet-chemistry facilities; C-H-N element analyzer; a Flotech flotation system; and a Giddings drill rig.

**Scanning Electron Microscope:** Hitachi S-3400N, a variable-pressure scanning electron microscope (SEM) equipped with a motorized stage, large chamber, and digital image capture; capable of imaging specimens with no metal coating, or specimens that are slightly hydrated or porous, as well as conventionally processed specimens; equipped with a Bruker AXS Quantax 400 X-ray microanalysis system; XFlash silicon drift detector with excellent energy resolution and light element detection, providing ultra-fast acquisition of line scans and elemental maps.

**Sedimentary geology laboratories:** water ion chromatograph; image analysis; Sedigraph X-ray particle-size analyzer; Horiba Camsizer L digital image particle analyzer; and a soil/sediment characterization laboratory.

**Thin-section and rock preparation laboratory:** diamond saws and specialized grinding equipment used to prepare ultrathin slices (30 microns thick) of rocks and fossils for microscopic and electron microprobe analysis.

**Cooperative Activities**

The department does collaborative work with the Iowa Geological Survey and the Office of the State Archaeologist of Iowa. Earth and environmental sciences students sometimes work on projects for the survey.

The Departments of Anthropology, Biology, Chemistry, Civil and Environmental Engineering, Earth and Environmental Sciences, and Geographical and Sustainability Sciences share services, expertise, joint instruction, and equipment. The Department of Earth and Environmental Sciences is an important participant in the Iowa Quaternary Studies group, an interdisciplinary program that promotes projects combining work in anthropology, biology, geography, geology, and statistics. Course work, degree programs, and facilities are shared among departments. The Department of Earth and Environmental Sciences and its faculty also support and actively participate in the Interdisciplinary Environmental Sciences (p. 278) Program, which offers an undergraduate major and minor, and a number of the department’s courses satisfy requirements of the undergraduate Certificate in Sustainability (p. 1248).
Field Trips

Field trips are integral parts of several courses in earth and environmental sciences. The geology of the Iowa City region is characterized by Quaternary glacial sediments on a largely Paleozoic sedimentary section a few hundred meters thick, overlying a Precambrian crystalline basement. Marine and terrestrial fossil assemblages, extensive reefs, and unique geode sites are located within a few hours' drive. Numerous Pleistocene glaciations are represented in Iowa, and field studies of landforms, exposures, and cores continue to yield information on sedimentology, stratigraphy, soil formation, paleopedology, and fossil biotas from both glacial and interglacial deposits.

Spring break and summer provide time for longer trips, which are open to all earth and environmental sciences students. In recent years, students have traveled to the southern Appalachians, Arizona, China, Death Valley, Dominican Republic, the Florida Keys, Hawaii, New Mexico, the Ozarks, Puerto Rico, and Texas. Advanced classes have visited California, Colorado, Kansas, Montana, Oklahoma, Wisconsin, and Ontario, Canada.

Courses

Not all courses are offered every year.

Lower-Level Undergraduate

**EES:1000 First-Year Seminar** 1-2 s.h.
Small discussion class taught by a faculty member; topics chosen by instructor; may include outside activities (e.g., films, lectures, performances, readings, visits to research facilities). Requirements: first- or second-semester standing.

**EES:1020 Loess Hills Service Learning Trip** 1 s.h.
Special topics, directed research.

**EES:1021 Spring Break Service Learning Trip** 1 s.h.
Special topics, directed research.

**EES:1030 Introduction to Earth Science** 3-4 s.h.
Relationships between plate tectonics, geologic time, and the rock cycle with volcanoes and igneous, sedimentary, metamorphic rocks; fossils; radioactive isotopes; landscape evolution; mountain building; natural resources; their impacts on civilization. GE: Natural Sciences without Lab; Natural Sciences with Lab. Same as CEE:1030.

**EES:1040 Evolution and the History of Life** 3-4 s.h.
Fossils over the past 3.5 billion years, origin and evolution of life, evolutionary radiations and mass extinctions, the invasion of land, dinosaurs, the age of mammals, relationship between biological systems and environmental change in earth history. Offered spring semesters. GE: Natural Sciences without Lab; Natural Sciences with Lab.

**EES:1050 Introduction to Geology** 4 s.h.
Minerals, rocks, and rock-forming processes (including volcanoes and sedimentary environments); surface processes (rivers, groundwater, glaciers, deserts, ocean shorelines), major earth processes (continental drift, plate tectonics, earthquakes, mountain building); impact on civilization. Offered fall semesters. GE: Natural Sciences with Lab.

**EES:1060 Origins of Life in the Universe** 3 s.h. (Part 1)
Fundamental questions (How old is the universe? What is the nature of life? How has life evolved on Earth? What are our human origins? Are there other habitable planets in the universe?) that revolve around understanding origins from different perspectives (i.e., astronomy, physics, geoscience, biology, chemistry, anthropology); work with faculty from several departments to investigate these questions; inquiry-based activities to build success in critical thinking, teamwork, effective written and oral communication; origin of the universe, biochemistry of life, and origin of life on Earth; first of a two-part sequence. Recommendations: first-year or sophomore standing. GE: Natural Sciences without Lab. Same as ASTR:1060, BIOL:1060.

**EES:1061 Origins of Life in the Universe** 4 s.h. (Part 2)
Fundamental questions (What is the nature of life? What is the evolution and how has life evolved on Earth? What are our human origins? Are there other habitable planets in the universe?) that revolve around understanding origins from different perspectives (astronomy, physics, geoscience, biology, chemistry, anthropology); students work with faculty from several departments to investigate these questions; inquiry-based activities to build success in critical thinking, teamwork, and effective written and oral communication; second of a two-part sequence. GE: Natural Sciences with Lab. Same as ASTR:1061, BIOL:1061, ANTH:1061.

**EES:1070 Age of Dinosaurs** 4 s.h.
Origin and evolutionary history of dinosaurs; diversity of dinosaurian groups, their geographic distributions and paleoecology; origins of flight among dinosaurs; environmental context, including other animals and plants that lived alongside dinosaurs; the so-called extinction of dinosaurs and radiation of modern forms; the role dinosaurs play in the interaction between science and the popular media. Offered fall semesters. GE: Natural Sciences with Lab.

**EES:1080 Introduction to Environmental Science** 3-4 s.h.
Biological and physical character of the Earth; interaction of humans with the environment, including impacts on ecosystems, climate, natural processes, resources; alternative options, including sustainability, waste management, energy, land reform. GE: Natural Sciences without Lab; Natural Sciences with Lab. Same as ENVS:1080.

**EES:1090 Introduction to Environmental Sciences Laboratory** 1 s.h.
Laboratory component of EES:1080. Requirements: completion of 3 s.h. in EES:1080 or ENVS:1080; or 3 s.h. of transfer equivalent. GE: Natural Sciences Lab only. Same as ENVS:1090.

**EES:1115 Energy and Society: History and Science of Oil**
3 s.h.
History, politics, and science of oil and oil industry. GE: Historical Perspectives. Same as ENVS:1115, GEOG:1115, HIST:1115.

**EES:1170 Geology of the U.S. National Parks**
2 s.h.
Geologic features, geologic history, important biological and archaeological characteristics, with emphasis on features that caused certain areas to be included in national park system. Offered spring semesters.

**EES:1180 Geology Field Trip: Selected National Parks**
2 s.h.
Observation, interpretation of prominent geologic, geomorphic, biological features; semester-break or semester-end visits to different parks or groups of parks each year. Offered spring semesters.

**EES:1290 Energy and the Environment**
3 s.h.
Scientific concepts related to potentially significant energy sources of the 21st century; environmental impacts, positive and negative, of each energy source as well as geologic and geographical distributions and applications. GE: Natural Sciences without Lab.

**EES:1400 Natural Disasters**
3 s.h.
How earth-atmosphere-hydrosphere-space systems produce events catastrophic to humans on the scale of individual lives to civilizations; root causes of earthquakes, landslides, volcanic eruptions, floods, hurricanes, tsunami, tornadoes, and asteroid impact, and their local, national, and global impact; spatial and temporal occurrences of these hazards; methods and processes for hazard preparedness, response, and recovery; social, economic, and policy aspects that affect and compound the magnitude of disasters associated with natural phenomena; case studies drawn from contemporary and ancient societies. GE: Natural Sciences without Lab.

**EES:2190 Directed Study**
arr.
Special topics, independent research.

**EES:2310 Introduction to Climatology**
3 s.h.
Introduction to fundamental physical science principles that govern climatic processes and patterns; emphasis on scientific thinking and practice through lecture, discussion, exercises; opportunities to explore real-world climatology applications and questions (What is climate change? How fast is the climate actually warming? What are the contributions from us and how much is natural variability? How is climate change going to affect our weather?). Recommendations: GEOG:1020 or similar earth systems science course. Same as GEOG:2310.

**EES:2410 Mineralogy**
4 s.h.
Physical, chemical, and optical properties of minerals; phase relations; structures; associations; diagnostic features for identification. Offered fall semesters. Prerequisites: (EES:1030 or EES:1050) and (CHEM:1070 or CHEM:1110) and (MATH:0100 or MATH:0300 or MATH:1010).

**EES:2831 Geologic Field Methods**
3 s.h.
Introduction to basic methods of geologic field work in southwest Montana using topographic maps and GPS to locate oneself, identifying geologic map units (including superficial deposits), recognizing geologic contacts, constructing stratigraphic sections, measuring planar structures, and making geologic maps complete with a legend and cross-section. Offered summer session. Prerequisites: EES:1030 or EES:1050 or EES:1080 or EES:1400.

### Upper-Level Undergraduate and Graduate

**EES:3000 Geologic Training Assignment**
1-3 s.h.
Practical experience. Requirements: grade of C or higher in EES:3500 and geology g.p.a. of at least 3.00.

**EES:3020 Earth Surface Processes**
3 s.h.
Basic geomorphic and environmental processes that shape the earth's surface; emphasis on erosion, transport, deposition by land mass movement (creep, landslides, earth flow), fluid agents (wind, water, ice); methods used to study these processes. Prerequisites: EES:1030 or EES:1050 or EES:1080 or ENVS:1080 or GEOG:1020. Same as ENVS:3020, GEOG:3020.

**EES:3040 Writing for the Earth and Environmental Sciences**
1-3 s.h.
Practical methods of content creation across curriculum; effective communication to lay and academic audiences; methods of planning, drafting, revising, and editing everything from general articles of interest to scientific papers. Same as WRIT:3200.

**EES:3050 Geology of Iowa**
3 s.h.
Investigation of geologic history responsible for landscape, soil, rocks, fossils, and geologic resources of Iowa. Recommendations: previous geology course.

**EES:3070 Marine Ecosystems and Conservation**
3 s.h.
Introduction to ocean ecosystems, including coral reefs, mangroves, estuaries and salt marshes, sandy and rocky shores, seagrass and kelp beds, the deep sea, plankton; biodiversity of each ecosystem; interrelationship of biota and physical/chemical environment; interactions among organisms, including food webs and symbiosis; local and global threats such as overfishing, pollution, ocean acidification, global warming, sea level change; ongoing biodiversity crisis, solutions for conservation problems.

**EES:3080 Introduction to Oceanography**
2 s.h.
Descriptive, chemical, physical, biological, geological aspects of oceans; impact on weather, climate, shorelines, food supply, other aspects of civilization. Offered spring semesters. Recommendations: knowledge of basic chemistry, biology, physics, earth science.
EES:3090 Topics in Museum Studies 1 s.h.
Systematic and analytic methods used for research in physical collections; tutorials in collection building, curation, and preservation; designed by members of the University of Iowa Collections Coalition. Same as MUSM:3090.

EES:3100 Introduction to Applied Remote Sensing 4 s.h.
Remote sensing of the earth's surface from aircraft, satellites; aerial photograph interpretation; remote sensing systems, methods, data analysis using electromagnetic spectrum and digital processing techniques, including visible, infrared, microwave radiation; remote sensing applied to geologic and environmental problems. Prerequisites: EES:1030 or EES:1050 or EES:1080. Same as ENVS:3100.

EES:3110 Chemical Evolution of the Oceans 3 s.h.
Investigation of various physico-chemical states oceans have assumed over the past four billion years of Earth history; use of isotope geochemistry as a proxy for ancient ocean conditions; focus on integrated Earth system science, paleoceanographic and paleoclimate modeling, role of chemical stratigraphy in deciphering past climate states of ocean-atmosphere system; relationship between chemical changes in ocean/atmosphere and biological systems of the Earth. Same as ENVS:3110.

EES:3150 Sustainability Project arr.
Individual or collective project related to sustainability under the direction and supervision of a faculty member; involves regularly scheduled meetings, data collection and interpretation, and a final project report.

EES:3160 Field Trip 2 s.h.
Field trip to an area of geologic interest, such as carbonate area of Florida, Grand Canyon (Arizona), Rio Grande Rift (New Mexico), Death Valley (California, Nevada), Appalachian Mountains (Virginia); preceded by weekly discussions of destination's geology. Offered spring semester.

EES:3190 Directed Study arr.
Special topics, independent research.

EES:3200 Collection Care and Management 3 s.h.
How a museum's management policy relates to its administrative, legal, and ethical obligations to its collections; acquisitions, deaccessions, collection use, data standards, storage environment, health, safety, documentation. Same as MUSM:3200.

EES:3206 Seminar: Taphonomy 3 s.h.
Taphonomy (study of fossil record in paleontology and archaeology); processes for accumulation, modification, and deposition of remains in prehistory; instruction by archaeologist and paleontologist. Requirements: graduate standing. Same as ANTH:3206.

EES:3210 Principles of Paleontology 3 s.h.
Patterns of evolution in fossil record; species and analysis of their evolutionary relationships; paleoecology, paleocommunity evolution; evolutionary radiation and mass extinctions; large-scale relationships between biodiversity and climatic change. Offered fall semesters.

EES:3220 Evolution of the Vertebrates 3 s.h.
Evolutionary history of vertebrates revealed by fossils and information from living animals; biogeographic, stratigraphic, paleoecological aspects of selected groups, especially mammals and dinosaurs; transitions from aquatic to terrestrial life, origins of flight, major events in vertebrate history (including mass extinctions and explosive radiations). Requirements: introductory course in geoscience or bioscience.

EES:3260 Wetlands: Function, Geography, and Management 3 s.h.
Hydrological, geomorphological, and ecological processes and their interaction in wetlands; geographic differences in wetlands based on climate and hydrology; wetlands, lakes, and rivers; role of wetlands in drainage basin hydrology and flooding; values and valuation of wetlands; wetland law and wetland delineation; wetlands and water resources. Prerequisites: GEOG:2374 or EES:2310. Same as GEOG:3320.

EES:3300 Sedimentary Geology 4 s.h.
Basic concepts of sedimentology, stratigraphy, depositional environments, sedimentary petrology; hands-on analyses of sediments and sedimentary rocks, including thin-section petrography; lecture/laboratory. Offered fall semesters. Prerequisites: EES:1030 or EES:1050.

EES:3360 Soil Genesis and Geomorphology 3 s.h.
Introduction to soil genesis, soil geomorphology, and classification including the basics of soil profile description and soil-landscape, soil-vegetation, and soil-climate relationships; emphasis on study of soils as the interface between living and non-living Earth systems and the role of soils in sustaining ecosystems and human societies; short field excursions and a weekend field trip. Requirements: college earth science and chemistry. Same as GEOG:3360.

EES:3380 Fluvial Geomorphology 3 s.h.
Hydrologic principles, stream channel processes, and fluvial geomorphology within drainage basin systems; spatial and temporal variations in water distribution, analysis of hydrological data, flow mechanisms, sediment transport, forecasting procedures, hydrograph construction, modeling. Requirements: EES:3020 or another 3000-level geology or hydraulics course. Same as CEE:3328.

EES:3390 Integrated Watershed Analysis 3 s.h.
Integration of existing knowledge of physical, hydrological, and environmental processes with management issues and challenges in water resources and environmental management; aspects of water quantity and quality, water use and treatment; basin management issues related to forestry, agriculture, urbanization, floods, droughts.
EES:3410 Analytical Methods 2 s.h.
Theory and practice of analyzing the chemical, isotopic, and mineralogical compositions of rocks, organic materials, and waters; use of modern analytical instruments. Offered spring semesters. Prerequisites: EES:3500 and CHEM:1070 and (PHYS:1512 or PHYS:1702).

EES:3500 Igneous and Metamorphic Petrology 4 s.h.
Nature, origin, and petrography of igneous and metamorphic rocks in hand specimen and thin-section. Offered spring semesters. Prerequisites: (EES:1030 or EES:1050) and EES:2410 and (CHEM:1070 or CHEM:1110) and (MATH:0100 or MATH:0300 or MATH:1010).

EES:3770 Global Stratigraphy 3 s.h.
Types of stratigraphy (e.g., biostratigraphy, lithostratigraphy, sequence stratigraphy, chemostratigraphy, magnetostratigraphy, cyclostratigraphy, chronostatigraphy) that share a number of procedures and practices and how differences cloud understanding of Earth history; central role of stratigraphy in modern geoscience pursuits; issue of time in stratigraphic record as an organizing theme for investigation of comparative stratigraphy.

EES:3840 Structural Geology 4 s.h.
Rock deformation; description, classification of geologic structures such as faults and folds; processes that generate geologic structures; solution of structural problems; interpretation of geologic maps. Prerequisites: EES:1030 or EES:1050.

Microscopy methods for research; all aspects of research, from sample preparation to imaging to data analysis; when to use a particular microscopy procedure; theory, operation, and application of scanning electron microscopy, scanning probe microscopy, laser scanning microscopy, X-ray microanalysis. Requirements: a physical science course. Same as CBE:4156, ACB:4156.

EES:4200 Advanced Collection Care and Management 3 s.h.
Builds on MUSM:3200; types and materials of museum objects and their care; storage and preservation of paper, books, photographs, works of art, electronic media, textiles, furniture, archaeological artifacts, and natural history specimens; collections project and hands-on practice in preservation techniques, enclosures, and supports; for students planning museum careers or professions that require care of collections. Prerequisites: MUSM:3200 or EES:3200. Same as MUSM:4200.

EES:4230 Special Topics 1-3 s.h.
Contemporary issues in earth sciences.

EES:4420 Vertebrate Osteology and Phylogeny 3 s.h.
Anatomy of the vertebrate skeleton from developmental, functional, and phylogenetic perspectives; relationship between skeletal, muscular, and nervous systems; history of the skeleton through modern forms; lecture and laboratory. Prerequisites: EES:3220 or ANTH:3305.

EES:4440 Phylogenetics and Biodiversity 3 s.h.
Methods available for reconstructing evolutionary history and measuring biodiversity, including distance, parsimony, likelihood, and taxic approaches; applications to molecular and morphological systematics, historical biogeography, study of diversity through time. Prerequisites: (EES:1040 or EES:3210) or (BIOL:1411 and BIOL:1412).

EES:4450 Morphometrics 1-3 s.h.
Quantitative methods for collection and analysis of morphologic data, including 2-D and 3-D geometric morphometrics and use of multivariate statistical methods to study of size and shape; applications of morphometric techniques to study development, adaptation, variation within and among species, related topics in paleontology and evolutionary biology. Offered alternate years. Prerequisites: EES:1040 or EES:3210.

EES:4490 Elements of Geochemistry 3 s.h.
Introduction to application of chemical principles to solution of geologic problems concerning earth and environmental processes; origin of elements, chemical differentiation of Earth and the solar system, geochronology, application of radiogenic and stable isotopes, chemical equilibrium, elementary thermodynamics and kinetics, carbonate and silicate stability relationships, chemical weathering, adsorption, trace element behavior, oxidation-reduction reactions, characterization of surface and ground waters, and ocean chemistry. Prerequisites: EES:1050 and CHEM:1080.

EES:4520 Isotope Geochemistry 3 s.h.
Radiogenic and stable isotope systematics, applications to geological, cosmological, and environmental problems.

EES:4620 Approaches to Geoarchaeology 3 s.h.
Geoarchaeology as multidisciplinary contextual framework for human paleoecology; natural processes that create the archaeological record, approaches to reconstructing landscapes of the past as a context for archaeological deposits; weekend field trip. Prerequisites: EES:3360 or EES:4720 or ANTH:3205 or ANTH:4205. Same as ANTH:4620.

EES:4630 Hydrogeology 3 s.h.
Role of groundwater in water cycle, subsurface water profile, aquifers and aquitards, basic principles and laws of physical and chemical processes of groundwater flow and contaminant transport in geological formations for sustainable development and protection of groundwater resources; groundwater geology and hydrology, regional aquifer systems, well hydraulics, slug/bail and pumping test and their analyses, groundwater contamination and remediation, management and sustainability of groundwater resources.

EES:4660 Groundwater Modeling 3 s.h.
Groundwater flow and contaminant transport modeling; numerical methods, applications of groundwater modeling to water supply, groundwater resources evaluation, remediation design using software: GMS (MODFLOW, MODPATH, and MT3D). Prerequisites: (EES:4630 or CEE:4103) and MATH:1860. Same as CEE:4104.

EES:4680 Field Methods in Hydrologic Science 3 s.h.
Collection and interpretation of physical hydrology and hydraulics field measurements; basic data quality assurance and quality control; hands-on experience with field equipment and data collection. Prerequisites: EES:2831 or EES:3020 or EES:3300 or EES:3360 or EES:3380 or EES:3390 or EES:4630 or EES:4720 or EES:4790 or EES:4800 or CEE:3371 or ENGR:2510 or ENVS:3020.

**EES:4700 Evolution of Ecosystems** 3 s.h.
Evolutionary history of terrestrial and marine ecosystems; ecological processes from population to ecosystem levels; community assembly, trophic levels, networks, biodiversity dynamics; practical aspects of paleoecological data collection, statistical analysis, modeling.
Requirements: two courses in geoscience, biology, environmental sciences, anthropology, or geography. Same as ENVS:4700.

**EES:4710 Evolution of Plants** 3 s.h.
Evolutionary history of plants over geologic time: relationships, morphology, and fossil record of major plant lineages; patterns and processes in evolution of plant morphology and diversity; ecological innovations and evolution of terrestrial ecosystems; relationships between biotic and environmental change; paleobotanical tools in stratigraphy, paleoclimatology, sedimentology; practical aspects of paleobotanical data collection, statistical analysis, modeling; field trip. Requirements: two courses in geoscience, anthropology, biology, environmental science, or geography.

**EES:4720 Glacial and Pleistocene Geology** 3 s.h.
Introduction to glaciers and glacial and interglacial Earth systems; linkages among glacial, oceanic, and atmospheric systems and their effects on landscapes and biota over the past two million years; how oceans, atmosphere, and glaciers interact and landscape effects of past glacial and interglacial cycles. Requirements: physical geology or physical geography or anthropology.

**EES:4750 Mineral and Petroleum Exploration Geology** 3 s.h.
Fundamentals of resource exploration philosophy and methods, with project-based presentation of techniques and strategies for mineral exploration and petroleum exploration; integration and evaluation of geological, geochemical, and geophysical techniques for mineral exploration; hydrocarbon systems and seismic interpretation for petroleum exploration. Corequisites: EES:3500 and EES:3840.

**EES:4790 Engineering Geology** 3 s.h.
Application of geology, water, and earth processes to civil and environmental engineering practice; physical properties of rock and soil, geologic mapping and surveying, groundwater supplies and wells, stream engineering, watershed management, site investigations for environmental assessment, and geologic hazards. Prerequisites: EES:1030 or EES:1050 or EES:1080.

**EES:4800 Solid Earth Geophysics** 3 s.h.
Geophysical methods used to address geological and engineering problems (e.g., finding petroleum and mineral deposits, studying groundwater resources, tracing contaminant plumes, evaluating archaeological sites); methods including gravity, magnetics, radiometrics, refraction and reflection seismography, geophysical well logging, and geoelectrical methods (direct current, frequency- and time-domain electromagnetics, induced polarization, magnetic resonance surveying, ground-penetrating radar); capabilities, drawbacks, costs; planning and budgeting surveys, processing the resulting digital data. Requirements: introductory geology or physics.

**EES:4832 Geologic Field Analysis** 3 s.h.
Structural, stratigraphic, and regional analysis of geology in the Rocky Mountains of Montana; emphasis on making reasonable geologic interpretations from field relationships; mapping projects in vicinity of Dillon, Montana that build on experience gained in EES:2831; capstone experience dedicated to synthesizing the geology of a fold-and-thrust belt near Glacier National Park. Offered summer session. Prerequisites: EES:2831 and EES:3840.

**EES:4870 Applied Geostatistics** 3 s.h.
Applications of geostatistical methods to geology, geography, hydrology, environmental sciences, and engineering; variogram, Kriging, analysis of spatial-varied data with varied computer software in participants' specialties. Same as GEOG:4870.

**EES:4990 Senior Thesis in Geoscience** arr.
Independent research resulting in a senior thesis. Requirements: senior standing.

**EES:4999 Honors Thesis in Geoscience** arr.
Independent research resulting in an honors thesis. Requirements: honors standing.

**Graduate**

**EES:5010 Geoscience Seminar Series** 1 s.h.
Scholarly work and research in geoscience.

**EES:5015 American Association of Petroleum Geologists Fall Field Trip** 1 s.h.
Resource-related topics in mineral and hydrocarbon exploration; joint field trip with Iowa State University. Requirements: AAPG student chapter member or graduate standing, and basic understanding of mineralogy, petrology, and structural geology.

**EES:5070 Geologic Orientation** 1 s.h.
Department degree requirements, programs; field survey of local geology; tips for TAs; introduction to specialized facilities; for new graduate students.

**EES:5120 Global Change Seminar** 1-2 s.h.
Current global change issues, including climate change, ecosystem changes and conservation, energy; seminar format with student presentations.

**EES:5250 Environmental Seminar** 1 s.h.
Environmental topics selected by student and instructor.
EES:5330 Carbonate Petrology 2 s.h.
Identification of constituents and interpretation of genesis, structures, environments of formation, and patterns and processes of diagenesis in limestones; laboratory-based. Requirements: familiarity with optical microscope and sedimentation principles.

EES:5350 Depositional Environments 3-4 s.h.
Modern patterns of sedimentation; emphasis on interpreting depositional environments of ancient sedimentary rocks and deciphering resulting stratigraphic patterns. Requirements: knowledge of basic sedimentary geology and paleontology.

EES:5380 Process Geomorphology Seminar 1-3 s.h.
Topics in process geomorphology ranging from fluvial dynamics to mass movement to sediment transport and related environmental processes.

EES:5530 Geochronology 3 s.h.
How to evaluate published ages, and assumptions/errors involved; how to select and sample suitable materials for dating, and choose a suitable dating method and analytical technique; opportunity to develop skills for research and professional careers. Prerequisites: EES:4940 or EES:4520.

EES:5550 Metamorphic Petrology 3 s.h.
Interpretation of metamorphic rocks using hand specimens, thin sections, field relationships, mineralogical composition, texture, geochronology, isotope geochemistry, thermodynamics, kinetics, and tectonic setting; phase equilibria in pelitic, mafic, and carbonate rocks; thermobarometry, petrogenetic grids, P-T-X relationships, and pseudosections; kinetic models of metamorphic textures, heat-flow modeling, P-T-t paths, and tectonic evolution of metamorphic rocks. Prerequisites: EES:3500.

EES:5820 Tectonics 3 s.h.
Dynamic processes responsible for crustal genesis, plate movements, mountain building; plate boundary zones; sedimentologic, structural, petrologic, geophysical characteristics of major tectonic settings; multidisciplinary approach; week-long field trip. Prerequisites: EES:3840.

EES:6250 Paleontology Seminar 1-3 s.h.

EES:6390 Advanced Watershed Analysis Seminar 1-3 s.h.
Integration of existing knowledge of physical, hydrological, and environmental processes with management issues and challenges in water resources and environmental management; aspects of water quantity and quality, water use and treatment, and basin management issues related to forestry, agriculture, urbanization, floods, droughts.

EES:6570 Tectonics and Petrology Seminar 1-2 s.h.
Topics in tectonics, structural geology, petrology.

EES:6920 Advanced Structural Geology 3 s.h.
Kinematic and dynamic analysis of deformed rocks; microstructural analysis; strain analysis, field investigations of highly deformed rocks. Prerequisites: EES:3840.

EES:7990 Research: Geoscience arr.
Independent research related to theses or dissertations in geoscience.
Elementary Education

Undergraduate major: elementary education (B.A., B.S.)
Web site: http://www.education.uiowa.edu/teach

Undergraduate Program of Study

- Major in elementary education (Bachelor of Arts, Bachelor of Science)

Bachelor of Arts, Bachelor of Science

The College of Education offers the major in elementary education. The major is available with a Bachelor of Arts or a Bachelor of Science; both degrees are awarded by the College of Liberal Arts and Sciences. The College of Education also offers endorsement for instruction of middle school students (secondary education).

Students interested in pursuing a degree in elementary education must first be admitted to the College of Liberal Arts and Sciences and then must apply to the College of Education. Admission to the College of Education’s elementary education program is not guaranteed. In order to be considered for admission to the elementary education program, undergraduates must complete a minimum of 30 s.h. of course work and must have a University of Iowa and a cumulative g.p.a. of at least 3.00. All students must submit PRAXIS I or PRAXIS Core test scores with their application to the Teacher Education Program (TEP). Students should visit with an advisor or speak with Teacher Education Program staff about complete admission requirements.

The elementary education major prepares students to teach kindergarten through sixth grade. Students complete course work in the foundations and methods of teaching. They also may complete requirements for an endorsement, choosing from reading, English/language arts, science, social science, and other areas. Contact the College of Education’s Office of Education Services for information about endorsement requirements.

Students must maintain a g.p.a. of at least 2.70 in all courses for the major and in all UI courses for the major. They also must complete the College of Liberal Arts and Sciences General Education Program (p. 313) and must satisfy all other requirements for graduation with a bachelor’s degree from the College of Liberal Arts and Sciences.

For information about elementary and secondary education curriculum requirements, student teaching, and teacher licensure, see “TEP: Elementary Education (Undergraduate)” and “TEP: Secondary Education (Undergraduate and Graduate)” in the Teaching and Learning (p. 793) (College of Education) section of the Catalog and contact the Office of Education Services.
English

Chair
  • Jonathan Wilcox

Undergraduate major: English (B.A.)
Undergraduate minor: English
Graduate degrees: M.A. in English; M.F.A. in English (creative writing, nonfiction writing); Ph.D. in English
Faculty: http://english.uiowa.edu/people
Web site: http://english.uiowa.edu/

The Department of English offers courses in literature, cultural studies, language, and writing. In these courses, students read poetry, fiction, essays, criticism, and theory to acquire methods for understanding literature and culture. In addition to providing these essential elements of a liberal arts and sciences education, the department's courses can augment students' specialized interests in other fields.

Many undergraduate and graduate students enroll in the department's degree programs. Most Ph.D. students in English are preparing for careers as teachers and scholars, and many M.F.A. students in the creative writing program and the nonfiction writing program are preparing for lives as storytellers, essayists, and poets. The B.A. and M.A. programs provide valuable training for careers in a variety of fields. Students who have earned English degrees from the University of Iowa write for advertising firms, newspapers, the entertainment industry and book publishers; teach in primary and secondary schools; practice law and medicine; work in business, industry, and nonprofits; and participate in state and federal government. As far as possible, a student's course of study is arranged to meet his or her individual needs and objectives.

The Department of English participates in several of the University's interdisciplinary units: the Departments of American Studies, Cinematic Arts, and Gender, Women's, and Sexuality Studies; the African American Studies Program; the American Indian and Native Studies Program; the Comparative Literature Program; and the Center for the Book.

WRITING PROGRAMS
For the past 75 years, the University of Iowa has been a national leader in all areas of creative writing. The University offers graduate degrees in creative writing, with specializations in fiction, nonfiction, and poetry. Undergraduate students majoring in English have the opportunity to enter the major's creative writing track, and all qualified undergraduates in other majors may enroll in creative writing courses offered by the Department of English.

Find creative writing courses (prefixes CW and CNW) under "Courses" toward the end of this Catalog section. See which ones are offered in certain semesters by searching for course subjects CW and CNW on the ISIS Courses page.

Undergraduate Programs of Study
  • Major in English (Bachelor of Arts)
  • Minor in English

The Department of English offers undergraduate courses in literature, film, digital media, critical theory, cultural studies, language, and writing. In these courses, students acquire methods for understanding the history and significance of texts in the cultures from which they emerge.

The department challenges students to strive for excellence as writers. It provides instruction in and opportunities for writing in all of its classes and offers students the option of building individual concentrations in creative or nonfiction writing. It also offers an honors program and a creative writing track, both of which have selective admission.

The Department of English is home to Alpha Tau Iota, the University of Iowa chapter of Sigma Tau Delta International English Honor Society. Membership is by invitation to high achieving students.

Students who plan to teach English in secondary schools should consult with an advisor in the College of Education as early as possible; contact the Office of Education Services. The education endorsement requires that students choose particular courses in the English major in order to meet state requirements. See "B.A. with Teacher Licensure" below.

Students interested in an English major should consult the academic advisor in the English undergraduate advising office. Visit the Department of English web site to learn about the faculty, courses, and upcoming events.

Bachelor of Arts
The Bachelor of Arts with a major in English requires a minimum of 120 s.h., including at least 36 s.h. (12 courses) of work for the major. Students must maintain a g.p.a. of at least 2.00 in all courses for the major and in all UI courses for the major. They also must complete the College of Liberal Arts and Sciences General Education Program (p. 313).

Students must earn at least 21 s.h. of credit for the major at the University of Iowa. Transfer students may count a maximum of 15 s.h. of approved transfer credit toward the major.

Students majoring in English should not use ENGL:1200 The Interpretation of Literature to fulfill the General Education Program's Interpretation of Literature requirement. They may substitute a course from the Literary, Visual, and Performing Arts area of General Education, excluding these:
  • DANC:1010 through DANC:2040;
  • DANC:4880 Dance Performance; and
  • MUS:1020 Performance Instruction for Nonmajors.

The following courses do not count toward the English major:
  • ENGL:1410 Sex and Popular Culture in the Postwar U.S.;
  • ENGL:1420 Technologies and Literatures of the Future;
  • CNW:1620 Introduction to Creative Nonfiction;
  • CW:1800 Creative Writing Studio Workshop;

Students may count up to 6 s.h. earned in courses with prefix CW toward the English major.
All English majors must complete ENGL:2010 Foundation of the English Major: Histories, Literatures, Pleasures.

Other course work for the major is divided into six areas and three historical periods. Students must complete a total of eight area courses (see “Areas” below) and six historical period courses (see “Historical Periods” below). Most courses (except those in the creative writing and nonfiction writing list) satisfy both an area and a historical period requirement, so many students complete the historical period requirements as they complete the area requirements. This allows them to choose additional elective course work to complete the major.

Each course's area and period designations are included in its course description, which is provided in the comprehensive list of Department of English courses; see “Courses” at the end of this Catalog section. A course's area and/or period designation may vary by semester; consult ISIS for semester-specific course information. Additional information about courses is available on the Department of English web site and from the academic advisor.

The major in English requires the following course work.

**INTRODUCTORY COURSE**

All English majors must complete this course and are encouraged to enroll in it as soon as they declare the major.

ENGL:2010 Foundation of the English Major: Histories, Literatures, Pleasures 3 s.h.

**AREAS**

Students must complete at least one course (3 s.h.) from each of the following six areas. Each student also must choose one of the six areas as a concentration area and take an additional two courses in that area, for a total of three courses (9 s.h.) in one area, and eight area courses in all.

**Literary Theory and Interdisciplinary Studies**

ENGL:2100 Introduction to Criticism and Theory 3 s.h.
ENGL:2105 Disability in Literature and Cultural Theory 3 s.h.
ENGL:2120 Introduction to Cultural Studies 3 s.h.
ENGL:2130 Introduction to the Novel 3 s.h.
ENGL:2140 Introduction to Poetry 3 s.h.
ENGL:2150 Introduction to the Short Story 3 s.h.
ENGL:2160 Introduction to Drama 3 s.h.
ENGL:2170 Introduction to the Essay 3 s.h.
ENGL:2191 Modern Fiction 3 s.h.
ENGL:2192 Postmodern Fiction 3 s.h.
ENGL:2193 Literature, Culture, and Women 3 s.h.
ENGL:2194 Lyric Structures 3 s.h.
ENGL:3100 Topics in Criticism and Theory 3 s.h.
ENGL:3102 Topics in Poetry and Poetics 3 s.h.
ENGL:3105 Topics in Popular Culture 3 s.h.
ENGL:3120 Prose by Women Writers 3 s.h.
ENGL:3130 Topics in Film and Literature 3 s.h.
ENGL:3135 Narrative and the Cinema 3 s.h.
ENGL:3140 Literature and the Book 3 s.h.
ENGL:3142 Topics in Book History 3 s.h.
ENGL:3150 Literature and Philosophic Thought 3 s.h.
ENGL:3152 Literature and Society 3 s.h.
ENGL:3155 Literature and Art 3 s.h.
ENGL:3160 Literary Genres and Modes 3 s.h.
ENGL:3173 Gender, Sexuality, and Literature 3 s.h.
ENGL:3180 Topics in Digital Media 3 s.h.
ENGL:3181 Digital Media and Poetics 3 s.h.
ENGL:3182 Digital Cultures and Literacies 3 s.h.
ENGL:3186 Science Fiction 3 s.h.
ENGL:3190 Language and Learning 2-3 s.h.
ENGL:3191 Reading and Teaching Adolescent Literature 3 s.h.
ENGL:4150 Introduction to Book Studies 3 s.h.
ENGL:4172 London Performance Study 3 s.h.
ENGL:4195 Interdisciplinary Studies 3 s.h.

**Medieval and Early Modern Literature and Culture**

ENGL:2206 Classical and Biblical Literature 3 s.h.
ENGL:2216 Selected Works of the Middle Ages 3 s.h.
ENGL:2236 Selected Early Authors 3 s.h.
ENGL:3216 Topics in Medieval and Renaissance Literature 3 s.h.
ENGL:3226 Literature and Culture of the Middle Ages 3 s.h.
ENGL:3228 Literature and Culture of the Restoration 3 s.h.
ENGL:3236 Literature and the Culture of the Renaissance 3 s.h.
ENGL:3237 Literature and Culture of Seventeenth-Century England 3 s.h.
ENGL:3246 16th- and 17th-Century Poetry 3 s.h.
ENGL:3256 Elementary Old English 3 s.h.
ENGL:3257 Old English Beowulf 3 s.h.
ENGL:3266 Medieval Celtic Literature 3 s.h.
ENGL:3267 Medieval Norse Literature 3 s.h.
ENGL:3276 Medieval Drama 3 s.h.
ENGL:3277 English Renaissance Drama 3 s.h.
ENGL:3286 Chaucer 3 s.h.
ENGL:3287 Shakespeare 3 s.h.
ENGL:3296 Milton 3 s.h.

**Modern British Literature and Culture**

ENGL:2309 Selected British Authors Before 1900 3 s.h.
ENGL:2310 Selected British Authors After 1900 3 s.h.
ENGL:2329 Topics in Modern British Literature Before 1900 3 s.h.
ENGL:2330 Topics in Modern British Literature After 1900 3 s.h.
ENGL:2338 Eighteenth-Century British Literature 3 s.h.
ENGL:2348 British Romanticism 3 s.h.
ENGL:2359 Victorian Literature 3 s.h.
ENGL:2360 Twentieth-Century British Literature 3 s.h.
ENGL:2361 Twenty-first-Century British Literature 3 s.h.
ENGL:2369 Topics in British Culture and Identity 3 s.h.
ENGL:3320 Modern British Drama 3 s.h.
ENGL:3329 Literature and Culture of Eighteenth-Century Britain 3 s.h.
ENGL:3338 Literature and Culture of the Romantic Period 3 s.h.
ENGL:3339 Literature and Culture of Nineteenth-Century Britain 3 s.h.
ENGL:3348 Literature and Culture of Nineteenth-Century Scotland 3 s.h.
ENGL:3350 Literature and Culture of 20th- and 21st-Century Britain 3 s.h.
ENGL:3355 British Poetry 3 s.h.
ENGL:3360 British Fiction 3 s.h.

American Literature and Culture
ENGL:2409 Selected American Authors Before 1900 3 s.h.
ENGL:2410 Selected American Authors After 1900 3 s.h.
ENGL:2420 American Literary Classics 3 s.h.
ENGL:2425 American Poetry 3 s.h.
ENGL:2438 American Novel Before 1900 3 s.h.
ENGL:2440 American Novel After 1900 3 s.h.
ENGL:2450 American Short Story 3 s.h.
ENGL:2460 Black Literature and Politics: Controversies of National Allegiance 3 s.h.
ENGL:2463 Topics in African American Literature 3 s.h.
ENGL:2465 Selected African American Authors 3 s.h.
ENGL:2475 Topics in Asian American Literature 3 s.h.
ENGL:3418 Literature and Culture of America Before 1800 3 s.h.
ENGL:3419 Literature and Culture of Nineteenth-Century America 3 s.h.
ENGL:3420 Literature and the Culture of Twentieth-Century America 3 s.h.
ENGL:3429 Topics in American Literature Before 1900 3 s.h.
ENGL:3430 Topics in American Literature After 1900 3 s.h.
ENGL:3431 American Novel Since 1945 3 s.h.
ENGL:3439 American Drama Before 1900 3 s.h.
ENGL:3440 American Drama Since 1900 3 s.h.
ENGL:3441 Native American Literature 3 s.h.
ENGL:3444 Literatures of the American Peoples 3 s.h.
ENGL:3450 American Regional Literatures 3 s.h.
ENGL:3455 Jewish American Literature 3 s.h.
ENGL:3459 African American Literature Before 1900 3 s.h.
ENGL:3460 African American Literature After 1900 3 s.h.
ENGL:3462 African American Drama 3 s.h.
ENGL:3465 African American Autobiography 3 s.h.
ENGL:3480 American Literature and History 3 s.h.
ENGL:3489 Contemporary American Women Writers 3 s.h.
ENGL:4410 Midwest African American Literature and Culture 3 s.h.

Transnational Literature and Postcolonial Studies
ENGL:2505 Introduction to Postcolonial Studies 3 s.h.
ENGL:2510 Selected Transnational Authors 3 s.h.
ENGL:2560 Topics in Culture and Identity 3 s.h.
ENGL:3510 Topics in Transnational Literature 3 s.h.
ENGL:3515 Topics in Postcolonial Studies 3 s.h.
ENGL:3519 Literature and Culture of Empire 3 s.h.
ENGL:3520 Literature and Culture of the 20th and 21st Century 3 s.h.
ENGL:3525 Literature and Culture of the Americas 3 s.h.
ENGL:3530 Caribbean Literature and Culture 3 s.h.
ENGL:3532 Modernist Women Writers 3 s.h.
ENGL:3535 Inter-American Studies 3 s.h.
ENGL:3540 Literature of the Indian Subcontinent 3 s.h.
ENGL:3550 African Literature 3 s.h.
ENGL:3555 Topics in African Cinema 3 s.h.
ENGL:3570 Transnational and Postcolonial Writing by Women 3 s.h.
ENGL:3580 Identity and Social Issues 3 s.h.
ENGL:3590 People on the Move 3 s.h.
ENGL:3595 International Literature Today 3 s.h.

Nonfiction and Creative Writing
ENGL:3720 Creative Writing Track Colloquium 3 s.h.
ENGL:3721 Writers' Seminar: Fiction 2 s.h.
ENGL:3722 Writers' Seminar: Poetry 2 s.h.
ENGL:3723 Writers' Seminar: Nonfiction 2 s.h.
ENGL:3724 Writers' Seminar: Literary Translation 2 s.h.
ENGL:3725 Writers' Seminar: Playwriting 2 s.h.
ENGL:4720 Creative Writing Track: Special Topics 3 s.h.
CNW:2680 The Art and Craft of Creative Nonfiction 3 s.h.
CNW:2690 The Art and Craft of Writing About Business 3 s.h.
CNW:2700 The Art and Craft of Personal Writing 3 s.h.
CNW:2710 The Art and Craft of Food Writing 3 s.h.
CNW:2720 The Art and Craft of Writing About Culture 3 s.h.
CNW:2730 The Art and Craft of Science Writing 3 s.h.
CNW:2740 The Art and Craft of Writing about the Environment 3 s.h.
CNW:2760 The Art and Craft of Writing for Social Change 3 s.h.
CNW:2770 The Art and Craft of Writing for New Media 3 s.h.
CNW:2780 The Art and Craft of Writing About Sports 3 s.h.
CNW:2790 The Art and Craft of Humor Writing 3 s.h.
CNW:2800 The Art and Craft of Writing Across Genres 3 s.h.
CNW:2810 The Art and Craft of Writing with Emotion 3 s.h.
CNW:2820 The Art and Craft of the Literary Essay 3 s.h.
CNW:2830 The Art and Craft of Immersion Journalism 3 s.h.
CNW:2840 The Art and Craft of Travel Writing 3 s.h.
CNW:2850 The Art and Craft of Writing About Politics 3 s.h.
CNW:2900 The Essay Prize 3 s.h.
CNW:2910 Writing for Applications and Awards 3 s.h.
CNW:3450 Freelance Reporting and Writing 4 s.h.
CNW:3600 Issues in Creative Nonfiction 3 s.h.
CNW:3630 Advanced Nonfiction Writing 3 s.h.
CNW:3632 Prose Style 3 s.h.
CNW:3640 Writing for Business and Industry 3 s.h.
CNW:3644 Dublin Writing Workshop 3 s.h.
CNW:3660 Multimedia Writing 3 s.h.
CNW:3661 Film and Writing 3 s.h.
CNW:3662 Graphic Writing 3 s.h.
CNW:3663 Radio and Writing 3 s.h.
CNW:3664 Writing About Science 3 s.h.
CNW:4355 Approaches to Teaching Writing 3 s.h.
CNW:4631 Undergraduate Essay Workshop 3 s.h.
CNW:4642 Team Writing for Business 3 s.h.
CNW:4690 Undergraduate Project in Nonfiction Writing 1-2 s.h.

CW:2100 Creative Writing 3 s.h.
CW:2870 Fiction Writing 3 s.h.
CW:2875 Poetry Writing 3 s.h.
CW:3107 Creative Writing for the Health Professions 3 s.h.
CW:3210 Creative Writing and the Natural World 3 s.h.
CW:3215 Creative Writing and Popular Culture 3 s.h.
CW:3217 Writing and Reading Young Adult Fiction 3 s.h.
CW:3218 Creative Writing for New Media 3 s.h.
CW:3870 Advanced Fiction Writing 3 s.h.
CW:3875 Advanced Poetry Writing 3 s.h.
CW:4870 Undergraduate Writers' Workshop: Fiction arr.
CW:4875 Undergraduate Writers' Workshop: Poetry arr.
CW:4880 Undergraduate Writers' Seminar 3 s.h.
CW:4894 Undergraduate Project in Creative Writing arr.

Area Determined by Course Content

The following course's area is designated either as literary theory and interdisciplinary studies or as modern British literature and culture, depending on course context, which varies by semester. Consult ISIS for the semester-specific area designation.

ENGL:3010 Children's Literature 3 s.h.

HISTORICAL PERIODS

Students must take at least two courses from each of the following three historical periods.

Early Literatures Through the 17th Century

ENGL:2206 Classical and Biblical Literature 3 s.h.
ENGL:2216 Selected Works of the Middle Ages 3 s.h.
ENGL:2236 Selected Early Authors 3 s.h.
ENGL:3216 Topics in Medieval and Renaissance Literature 3 s.h.
ENGL:3226 Literature and Culture of the Middle Ages 3 s.h.
ENGL:3228 Literature and Culture of the Restoration 3 s.h.
ENGL:3236 Literature and the Culture of the Renaissance 3 s.h.
ENGL:3237 Literature and Culture of Seventeenth-Century England 3 s.h.
ENGL:3246 16th- and 17th-Century Poetry 3 s.h.
ENGL:3256 Elementary Old English 3 s.h.
ENGL:3257 Old English Beowulf 3 s.h.
ENGL:3266 Medieval Celtic Literature 3 s.h.
ENGL:3267 Medieval Norse Literature 3 s.h.
ENGL:3276 Medieval Drama 3 s.h.
ENGL:3277 English Renaissance Drama 3 s.h.
ENGL:3286 Chaucer 3 s.h.
ENGL:3287 Shakespeare 3 s.h.
ENGL:3296 Milton 3 s.h.

Literature of the 18th/19th Century

ENGL:2309 Selected British Authors Before 1900 3 s.h.
ENGL:2329 Topics in Modern British Literature Before 1900 3 s.h.
ENGL:2338 Eighteenth-Century British Literature 3 s.h.
ENGL:2348 British Romanticism 3 s.h.
ENGL:2359 Victorian Literature 3 s.h.
ENGL:2409 Selected American Authors Before 1900 3 s.h.
ENGL:2438 American Novel Before 1900 3 s.h.
ENGL:3329 Literature and Culture of Eighteenth-Century Britain 3 s.h.
ENGL:3338 Literature and Culture of the Romantic Period 3 s.h.
ENGL:3339 Literature and Culture of Nineteenth-Century Britain 3 s.h.
ENGL:3348 Literature and Culture of Nineteenth-Century Scotland 3 s.h.
ENGL:3418 Literature and Culture of America Before 1800 3 s.h.
ENGL:3419 Literature and Culture of Nineteenth-Century America 3 s.h.
ENGL:3429 Topics in American Literature Before 1900 3 s.h.
ENGL:3439 American Drama Before 1900 3 s.h.
ENGL:3459 African American Literature Before 1900 3 s.h.

Literature of the 20th/21st Century

ENGL:2100 Introduction to Criticism and Theory 3 s.h.
ENGL:2105 Disability in Literature and Cultural Theory 3 s.h.
ENGL:2120 Introduction to Cultural Studies 3 s.h.
ENGL:2150 Introduction to the Short Story 3 s.h.
ENGL:2160 Introduction to Drama 3 s.h.
ENGL:2170 Introduction to the Essay 3 s.h.
ENGL:2191 Modern Fiction 3 s.h.
ENGL:2192 Postmodern Fiction 3 s.h.
ENGL:2194 Lyric Structures 3 s.h.
ENGL:2310 Selected British Authors After 1900 3 s.h.
ENGL:2330 Topics in Modern British Literature After 1900 3 s.h.
ENGL:2360 Twentieth-Century British Literature 3 s.h.
ENGL:2361 Twenty-first-Century British Literature 3 s.h.
ENGL:2410 Selected American Authors After 1900 3 s.h.
ENGL:2440 American Novel After 1900 3 s.h.
ENGL:2463 Topics in African American Literature 3 s.h.
ENGL:2465 Selected African American Authors 3 s.h.
ENGL:2475 Topics in Asian American Literature 3 s.h.
ENGL:2505 Introduction to Postcolonial Studies 3 s.h.
ENGL:2510 Selected Transnational Authors 3 s.h.
ENGL:3100 Topics in Criticism and Theory 3 s.h.
ENGL:3105 Topics in Popular Culture 3 s.h.
ENGL:3130 Topics in Film and Literature 3 s.h.
ENGL:3135 Narrative and the Cinema 3 s.h.
ENGL:3150 Literature and Philosophic Thought 3 s.h.
ENGL:3152 Literature and Society 3 s.h.
ENGL:3173 Gender, Sexuality, and Literature 3 s.h.
ENGL:3180 Topics in Digital Media 3 s.h.
ENGL:3181 Digital Media and Poetics 3 s.h.
ENGL:3182 Digital Cultures and Literacies 3 s.h.
ENGL:3186 Science Fiction 3 s.h.
ENGL:3350 Literature and Culture of 20th- and 21st-Century Britain 3 s.h.
ENGL:3420 Literature and the Culture of Twentieth-Century America 3 s.h.
ENGL:3430 Topics in American Literature After 1900 3 s.h.
ENGL:3431 American Novel Since 1945 3 s.h.
ENGL:3440 American Drama Since 1900 3 s.h.
ENGL:3441 Native American Literature 3 s.h.
ENGL:3455 Jewish American Literature 3 s.h.
ENGL:3460 African American Literature After 1900 3 s.h.
ENGL:3465 African American Autobiography 3 s.h.
ENGL:3489 Contemporary American Women Writers 3 s.h.
ENGL:3510 Topics in Transnational Literature 3 s.h.
ENGL:3515 Topics in Postcolonial Studies 3 s.h.
ENGL:3520 Literature and Culture of the 20th and 21st Century 3 s.h.
ENGL:3525 Literature and Culture of the Americas 3 s.h.
ENGL:3530 Caribbean Literature and Culture 3 s.h.
ENGL:3532 Modernist Women Writers 3 s.h.
ENGL:3535 Inter-American Studies 3 s.h.
ENGL:3540 Literature of the Indian Subcontinent 3 s.h.
ENGL:3550 African Literature 3 s.h.
ENGL:3555 Topics in African Cinema 3 s.h.
ENGL:3570 Transnational and Postcolonial Writing by Women 3 s.h.
ENGL:3590 People on the Move 3 s.h.
ENGL:3595 International Literature Today 1, 3 s.h.
ENGL:4172 London Performance Study 3 s.h.
ENGL:4195 Interdisciplinary Studies 3 s.h.
ENGL:4410 Midwest African American Literature and Culture 3 s.h.

Historical Period Determined by Course Content

The historical period of each of the following courses is designated as 18th/19th-century literature or 20th/21st-century literature, depending on course content, which varies by semester. Consult ISIS for semester-specific period designations.

ENGL:2130 Introduction to the Novel 3 s.h.
ENGL:2140 Introduction to Poetry 3 s.h.
ENGL:2193 Literature, Culture, and Women 3 s.h.
ENGL:2369 Topics in British Culture and Identity 3 s.h.
ENGL:2420 American Literary Classics 3 s.h.
ENGL:2425 American Poetry 3 s.h.
ENGL:2450 American Short Story 3 s.h.
ENGL:2460 Black Literature and Politics: Controversies of National Allegiance 3 s.h.
ENGL:2560 Topics in Culture and Identity 3 s.h.
ENGL:3010 Children's Literature 3 s.h.
ENGL:3102 Topics in Poetry and Poetics 3 s.h.
ENGL:3120 Prose by Women Writers 3 s.h.
ENGL:3155 Literature and Art 3 s.h.
ENGL:3160 Literary Genres and Modes 3 s.h.
ENGL:3320 Modern British Drama 3 s.h.
ENGL:3355 British Poetry 3 s.h.
ENGL:3360 British Fiction 3 s.h.
ENGL:3444 Literatures of the American Peoples 3 s.h.
ENGL:3450 American Regional Literatures 3 s.h.
ENGL:3462 African American Drama 3 s.h.
ENGL:3480 American Literature and History 3 s.h.
ENGL:3519 Literature and Culture of Empire 3 s.h.
ENGL:3580 Identity and Social Issues 3 s.h.

The historical period of each of the following courses is designated as early literatures through the 17th century, or 18th/19th-century literature, or 20th/21st-century literature, depending on course content, which varies by semester. Consult ISIS for semester-specific period designations.

ENGL:3140 Literature and the Book 3 s.h.
ENGL:3142 Topics in Book History 3 s.h.
ENGL:4000 English Honors Seminar 3 s.h.
ENGL:4150 Introduction to Book Studies 3 s.h.
Creative Writing Track

Students majoring in English may be eligible to enter the creative writing track. The track maintains the English major’s emphasis on training artful and intelligent readers while providing a focus on creativity and excellence in writing.

ADMISSION TO THE TRACK

Admission to the creative writing track is selective; students must apply and be admitted. Students who apply must have junior or senior standing (at least 60 s.h. earned) at the beginning of the semester in which they intend to start the track; a g.p.a. of at least 3.33 in English (based on all English courses taken, including creative writing courses); at least 9 s.h. earned in University of Iowa English literature courses, excluding those with prefixes CNW and CW; and two completed prerequisites for admission to the track (see list below).

For more information and online application forms, visit the creative writing track web page.

PREREQUISITES FOR ADMISSION TO THE TRACK

Applicants must have completed two prerequisites for admission to the creative writing track (6 s.h.), chosen from the following list of introductory writing courses.

- CNW:2680 The Art and Craft of Creative Nonfiction 3 s.h.
- CNW:2690 The Art and Craft of Writing About Business 3 s.h.
- CNW:2700 The Art and Craft of Personal Writing 3 s.h.
- CNW:2710 The Art and Craft of Food Writing 3 s.h.
- CNW:2720 The Art and Craft of Writing About Culture 3 s.h.
- CNW:2730 The Art and Craft of Science Writing 3 s.h.
- CNW:2740 The Art and Craft of Writing about the Environment 3 s.h.
- CNW:2760 The Art and Craft of Writing for Social Change 3 s.h.
- CNW:2770 The Art and Craft of Writing for New Media 3 s.h.
- CNW:2780 The Art and Craft of Writing About Sports 3 s.h.
- CNW:2790 The Art and Craft of Humor Writing 3 s.h.
- CNW:2800 The Art and Craft of Writing Across Genres 3 s.h.
- CNW:2810 The Art and Craft of Writing with Emotion 3 s.h.
- CNW:2820 The Art and Craft of the Literary Essay 3 s.h.
- CNW:2830 The Art and Craft of Immersion Journalism 3 s.h.
- CNW:2840 The Art and Craft of Travel Writing 3 s.h.
- CNW:2850 The Art and Craft of Writing About Politics 3 s.h.
- CNW:2900 The Essay Prize 3 s.h.
- CW:2100 Creative Writing 3 s.h.
- CW:2870 Fiction Writing 3 s.h.
- CW:2875 Poetry Writing 3 s.h.
- THTR:2301 Playwriting I 3 s.h.
- THTR:3301 Playwriting II 3 s.h.

CREATIVE WRITING TRACK REQUIREMENTS

The creative writing track requires 13 s.h. of credit. Students earn 4 s.h. in genre-based writing seminars, 3 s.h. in a special topics course, and 6 s.h. in approved upper-level creative writing courses.

The creative writing track requires the following course work.

Genre-based writing seminars—two of these (4 s.h.):
- ENGL:3721 Writers’ Seminar: Fiction 2 s.h.
- ENGL:3722 Writers’ Seminar: Poetry 2 s.h.
- ENGL:3723 Writers’ Seminar: Nonfiction 2 s.h.
- ENGL:3724 Writers’ Seminar: Literary Translation 2 s.h.
- ENGL:3725 Writers’ Seminar: Playwriting 2 s.h.

Special topics course (3 s.h.):
- ENGL:4720 Creative Writing Track: Special Topics 3 s.h.

Upper-level creative writing—two of these (6 s.h.):
- ENGL:4020 Honors Thesis Workshop 3 s.h.
- ENGL:4720 Creative Writing Track: Special Topics 3 s.h.
- CW:4870 Undergraduate Writers’ Workshop: Fiction 3 s.h.
- CW:4875 Undergraduate Writers’ Workshop: Poetry 3 s.h.
- CNW:3630 Advanced Nonfiction Writing 3 s.h.
- CNW:3632 Prose Style 3 s.h.
- CNW:3633 Personal Writing 3 s.h.
- CNW:3660 Multimedia Writing 3 s.h.
- CNW:3663 Radio and Writing 3 s.h.
- CNW:3664 Writing About Science 3 s.h.
- CNW:4631 Undergraduate Essay Workshop 3 s.h.
- THTR:3300 Advanced Playwriting 3 s.h.
- THTR:3310 Undergraduate Playwriting Workshop 1-3 s.h.
- THTR:3320 Writing for Film 3 s.h.

In order to take ENGL:4020 Honors Thesis Workshop (an honors thesis in creative writing), students must be in the creative writing track and must be members of the English Honors Program. They must fulfill all requirements for registration in the course; see "Honors in the Major" below.

B.A. with Teacher Licensure

English majors interested in earning licensure to teach in elementary and/or secondary schools must complete the College of Education’s Teacher Education Program (TEP) in addition to the requirements for the major and all requirements for graduation. The TEP requires several College of Education courses and student teaching. Contact the College of Education’s Office of Education Services for details.

Students must satisfy all degree requirements and complete Teacher Education Program licensure before degree conferral.
Students interested in earning elementary school licensure should contact the Office of Education Services for information about requirements.

The following courses are required for students earning secondary school licensure.

**ENGLISH COURSES**

Students complete these courses as part of the English major.

- ENGL:3190/EDTL:3382 Language and Learning (area: literary theory and interdisciplinary studies) 2-3 s.h.
- ENGL:3191/EDTL:3393 Reading and Teaching Adolescent Literature (area: literary theory and interdisciplinary studies) 3 s.h.
- CNW:4355/EDTL:4355 Approaches to Teaching Writing (area: nonfiction and creative writing) 3 s.h.
- A Shakespeare course
- Three American literature courses
- A British literature course
- One nonfiction or creative writing course in addition to CNW:4355

**EDUCATION COURSES**

These College of Education courses are required for teacher education.

- EDTL:3002 Technology in the Classroom 2 s.h.
- EDTL:3090 Orientation to Secondary Education 1 s.h.
- EDTL:4087 Seminar: Curriculum and Student Teaching 1-3 s.h.
- EDTL:4091 Observation and Laboratory Practice in the Secondary School (student teaching) 6 s.h.
- EDTL:4092 Observation and Laboratory Practice in the Secondary School (student teaching) 6 s.h.
- EDTL:4314 Introduction and Practicum: Secondary English 3 s.h.
- EDTL:4315 Methods: Secondary English 3 s.h.
- EDTL:4394 Methods: Secondary Reading 2-3 s.h.
- EPLS:3000 Foundations of Education 3 s.h.
- EPLS:4180 Human Relations for the Classroom Teacher 3 s.h.
- PSQF:1075 Educational Psychology and Measurement 3 s.h.

**ADMISSION**

Applicants to the Teacher Education Program in English must complete a minimum of 30 s.h., including ENGL:2010 Foundation of the English Major: Histories, Literatures, Pleasures and an additional 12 s.h. in English courses, before they are admitted to the program. The following courses do not count toward the additional 12 s.h.:

- ENGL:1200 through ENGL:1355;
- ENGL:3190 Language and Learning;
- ENGL:3191 Reading and Teaching Adolescent Literature; and
- CNW:4355 Approaches to Teaching Writing.

Admission to the Teacher Education Program is selective; contact the College of Education's Office of Education Services for information.

**Minor Licensure in English**

Students who seek licensure for secondary teaching in fields other than English may seek minor licensure in English. First-year courses in rhetoric, speech, or writing do not count toward this requirement.

The English minor licensure program includes the following course work.

- ENGL:3190/EDTL:3382 Language and Learning 2-3 s.h.
- ENGL:3191/EDTL:3393 Reading and Teaching Adolescent Literature 3 s.h.
- CNW:4355/EDTL:4355 Approaches to Teaching Writing 3 s.h.
- EDTL:4315 Methods: Secondary English 3 s.h.
- EDTL:4394 Methods: Secondary Reading 2-3 s.h.
- An American literature course
- A British literature course
- A course in creative or nonfiction writing
- An additional English course

While this program meets minimum requirements for licensure, the department recommends that students who want to teach English have considerably more training in the field.

**Four-Year Graduation Plan**

The following checkpoints list the minimum requirements students must complete by certain semesters in order to stay on the University's Four-Year Graduation Plan.

**Before the fifth semester begins:** at least two courses in the major

**Before the seventh semester begins:** at least four more courses (total of six) in the major and at least 90 s.h. earned toward the degree

**Before the eighth semester begins:** at least two more courses (total of eight) in the major

**During the eighth semester:** enrollment in all remaining course work in the major, all remaining General Education courses, and a sufficient number of semester hours to graduate

**Iowa Degree in Three**

University of Iowa majors who are strongly motivated can graduate with a degree in three years under the Iowa Degree in Three. The program is available to students who can complete more semester hours each term than they would on the Four-Year Graduation Plan.

Students sign an agreement during their first semester of enrollment; meet with an advisor at least once a semester to review their plans and progress; take courses during summer sessions, if necessary; meet specific course checkpoints; and maintain the grade-point average required for the major.

Students are allowed to bring Advanced Placement (AP), College Level Examination Program (CLEP), or transfer credit upon admission to reduce the number of semester
hours required for their degree. They should consult their advisor about the program.

**Honors in the Major**

Students majoring in English have the opportunity to graduate with honors in the major and to enhance their course of study through honors seminars and thesis writing. All students interested in taking honors course work are encouraged to join the English Honors Program as soon as they qualify. Students may join online; visit English Honors Program.

Students who wish to graduate with honors in the English major must take two honors seminars, complete a two-semester thesis project, and maintain a University of Iowa g.p.a. of at least 3.33 and a g.p.a. of at least 3.50 in English.

Each year the department offers four honors seminars covering a wide range of subject areas and historical periods. Honors seminars are limited to 18 students, carry 3 s.h. of credit, and meet three hours each week. These courses require substantial reading and research and culminate in a 15-20 page essay. Students register for ENGL:4000 English Honors Seminar.

To register for a seminar, students are encouraged to have a University of Iowa g.p.a. of at least 3.33 and must have completed three English courses (not including introductory courses in nonfiction or creative writing) with a g.p.a. of at least 3.33 in English. The department also recommends that students complete ENGL:2010 Foundation of the English Major: Histories, Literatures, Pleasures before taking an honors seminar.

The two-semester thesis project requires ENGL:4020 Honors Thesis Workshop (fall) and ENGL:4040 Undergraduate Honors Project (independent study), for a total of 6 s.h. To enroll in ENGL:4020, students must have completed one honors seminar with a grade of A-minus or higher and must have a University of Iowa g.p.a. of at least 3.33 and a g.p.a. of at least 3.50 in English.

The English Honors Program has established careful guidelines for each of the six types of honors theses accepted by the department: literary and cultural studies, nonfiction writing, electronic writing and multimedia production, English education, creative writing, and the interdisciplinary thesis for double honors, which allows a student to earn honors in two majors with one longer project. Information on thesis guidelines is available on the English Honors Program web site.

In addition to honors in their majors, undergraduate students have a variety of opportunities for honors study and activities through membership in the University of Iowa Honors Program; visit Honors at Iowa to learn about the University’s honors program.

**Minor**

The minor in English requires a minimum of 15 s.h. in English courses, including 12 s.h. in courses taken at the University of Iowa. Students must maintain a g.p.a. of at least 2.00 in all courses for the minor and in all UI courses for the minor. Course work in the minor may not be taken pass/nonpass. Students may count a maximum of 3 s.h. of approved transfer credit toward the minor. Before taking courses for the minor, students must complete the General Education Program requirement ENGL:1200 The Interpretation of Literature.

The minor must include at least 6 s.h. in literature courses numbered ENGL:2100 through ENGL:4810; the remaining 9 s.h. may be selected from additional courses in literature and from most courses in writing (prefixes CNW and CW), with a maximum of 6 s.h. earned in courses with the prefix CW. The following courses do not count toward the minor:

- ENGL:1410 Sex and Popular Culture in the Postwar U.S.
- ENGL:1420 Technologies and Literatures of the Future
- CNW:1620 Introduction to Creative Nonfiction
- CW:1800 Creative Writing Studio Workshop
- courses with the prefix ENNM; and
- courses numbered ENGL:1200 through ENGL:1355.

Students may declare the English minor on ISIS. In order for the minor to be recorded, students must indicate completion of the minor on their Application for Degree.

Students who would like help declaring the minor or in planning how to meet its requirements may stop by the Department of English advising office or schedule an appointment with an advisor by contacting the undergraduate English secretary.

**Graduate Programs of Study**

- Master of Arts in English
- Master of Fine Arts in English (creative writing or nonfiction writing)
- Doctor of Philosophy in English

The Master of Arts program in English introduces students to the professional study of literature; the Doctor of Philosophy program prepares them to serve as faculty members at colleges and universities.

The Master of Fine Arts program in creative writing features advanced courses in writing fiction and poetry. Students in creative writing study at the Iowa Writers’ Workshop, renowned as a pioneer in teaching writers since its founding in 1936. The Master of Fine Arts program in nonfiction writing is one of the few programs in the nation that offer a full range of graduate courses in literary nonfiction.

The M.A. is appropriate for students who would like graduate training in English and who may have an undergraduate major in a different field or who may intend to earn a Ph.D. at another institution. Students interested in careers in any area of book studies (professional writing, editing, web design, or publishing) may wish to earn the M.A. as a terminal degree, as may teachers seeking to enhance their credentials or students pursuing intellectual growth unrelated to a specific career.

M.A. and Ph.D. students in English mix freely in graduate courses, share the same access to faculty, and meet the same standards of quality in their work.

**EXAM FOR THE MASTER OF ARTS IN TEACHING**

The department administers the English component of the exam for the Master of Arts in Teaching (M.A.T.) in coordination with the College of Education. M.A.T. students should contact the Department of Teaching and Learning for information.
Master of Arts

The Master of Arts program in English requires a minimum of 30 s.h. of graduate credit. The program's focus is literary studies. The required 30 s.h. includes 24 s.h. earned in residence at the University of Iowa with a g.p.a. of at least 3.25. Students who wish to transfer to Iowa's Ph.D. program must complete two semesters or 15 s.h. of course work in literature (whichever they complete first) before applying for admission to the doctoral program.

COURSE WORK

Each student must take the following five courses numbered 5000 or above. Applicable transfer courses must be approved by the director of graduate study in English.

One course in criticism and theory numbered 5000 or above
Four courses numbered 5000 or above, chosen from the following five eras of British or American literature and culture: pre-1500; 1500-1660; 1660-1800; 1800-1900; 20th and 21st centuries

Elective courses constitute half of the total credit for the degree and may be chosen from graduate courses both in and outside the English department. Students may wish to explore opportunities for interdisciplinary study, language study, experience in theory and practice of writing, or specialization in a field of literary scholarship.

Department of English graduate courses are repeatable with the written approval of the department's director of graduate studies.

Completion of the M.A. requires either a thesis or a portfolio. Students submit a written description of their choice to the director of the program before the semester in which they plan to graduate.

M.A. THESIS

Students who choose to write an M.A. thesis must submit a brief prospectus approved by a thesis director before they register for thesis credit and at least one semester before they submit the thesis. The thesis committee consists of the thesis director, the director of the M.A. program, and one other faculty member. The thesis is evaluated by the committee as either satisfactory or unsatisfactory.

A copy of the thesis must be presented to the Graduate College for approval. For detailed information about Graduate College deadlines and policies, see the Manual of Rules and Regulations of the Graduate College.

PORTFOLIO

Near the end of their course work, students who do not choose the thesis option must submit a portfolio of work to the M.A. examination committee, which consists of the director of the M.A. program and two other English faculty members. All three read the full portfolio. To pass, the candidate must win a majority vote of the committee members.

Students take the first step toward preparing to submit a portfolio by meeting with the director of the M.A. program to discuss the portfolio, early during the semester in which they plan to graduate. After fulfilling all distribution and eligibility requirements and clearing all incomplete grades, students present the director with a draft of the portfolio's introductory statement. Students planning to graduate at the end of fall semester should present the statement by the first week of October; those who plan to graduate at the end of spring semester should present the statement by the first week of March. Once the director approves the statement, the student must submit three copies of the full portfolio; the submission deadline is November 1 for students planning to graduate at the end of fall semester and April 1 for those who will graduate at the end of spring semester.

The work in the portfolio should demonstrate the student's knowledge of literature as a broad historical and theoretical inquiry. Students submit approximately 50 pages (12,500 words) of their best work, along with a self-reflective introductory statement of five to seven pages. The body of the portfolio should contain papers originally produced for classes, revised for a broader audience unfamiliar with the original classes. The introduction should detail the student's trajectory in the program and the literary-critical or methodological skills he or she has gained. It also should explain the contents of the portfolio; contextualize each paper; and give a brief overview of the writing. Students are expected to describe the research methods used in assembling their portfolios and the critical practices that ground their work.

Master of Fine Arts: Creative Writing

The Master of Fine Arts program in creative writing requires a minimum of 48 s.h. of graduate credit. The degree is offered through the Creative Writing Program (Iowa Writers' Workshop), a two-year residency program that culminates in a creative thesis, such as a novel, a collection of stories, or a book of poetry.

Throughout the program, workshop students craft their manuscripts and engage in an exchange of ideas about writing and reading with each other and with the renowned teacher-authors who make up the workshop's faculty.

Admission to the program is competitive.

For details about the M.F.A. in creative writing and about the Iowa Writers' Workshop, see Creative Writing (Iowa Writers' Workshop) (p. 212) in the Catalog.

Master of Fine Arts: Nonfiction Writing

The Master of Fine Arts program in nonfiction writing requires 48 s.h. of graduate credit. It is designed for accomplished students and writers of literary nonfiction; most complete it in three years. The program culminates in a thesis of at least 75 pages.

M.F.A. students must complete 32 s.h. in residence at the University of Iowa, in courses specified by the program. They may choose electives widely, from courses offered by the English department and by all other University of Iowa departments.

Department of English graduate courses are repeatable with the written approval of the department's director of graduate studies.

In addition to completing course work, students are required to enroll for at least 2 s.h. and no more than 8 s.h. of thesis credit. The thesis may be a single extended piece of nonfiction, a collection of shorter nonfiction
pieces, or a collection of essays. Whatever the project, the thesis is expected to be of publishable quality.

For more information, consult the director of the Nonfiction Writing Program.

**Doctor of Philosophy**

The Doctor of Philosophy program in English requires a minimum of 72 s.h. of graduate credit. The program is designed as preparation for the teaching, publishing, and administrative service required of college and university faculty members. Concentrations are offered in areas such as literary history and critical theory, as well as interdisciplinary areas such as cultural studies and transnational studies.

Of the minimum 72 s.h. required for the degree, at least 30 s.h. must be earned in residence at the University of Iowa with a g.p.a. of at least 3.50.

Students must gain formal admission to Ph.D. candidacy by a vote of the Graduate Steering Committee, usually during the third semester of doctoral study.

Students complete course work in literature and culture of any four of these historical periods, as expressed in texts of the English-speaking and -writing world (usually but not always British or American): pre-1500; 1500-1660; 1660-1800; 1800-1900; 20th and 21st centuries. They also complete three seminars in the University of Iowa Department of English.

Students also must fulfill the program’s language requirement, usually by completing an advanced undergraduate course numbered 3000 or above in a language other than English.

The comprehensive examination consists of the following: a portfolio of five scholarly questions based on a period of literary history (usually British or American); a review essay and annotated bibliography in a special area of interest; two course syllabi; an article to be submitted for publication; and an introduction to the portfolio that synthesizes its parts in preparation for a two-hour oral exam.

A dissertation is required. Students present their prospectus formally to a faculty committee and must undergo a final exam defending the dissertation.

All doctoral candidates are required to gain some teaching experience, preferably in the College of Liberal Arts and Sciences Department of Rhetoric and in General Education Program (p. 313) literature courses.

For application forms and a complete description of the Ph.D. program, contact the department’s graduate program academic coordinator.

**Admission**

Applications for admission must be postmarked by the following deadlines.
- M.A. and Ph.D.: postmark by January 3
- M.F.A. (creative writing): postmark by January 3
- M.F.A. (nonfiction writing): postmark by December 15

Applicants must meet the admission requirements of the Graduate College; see the Manual of Rules and Regulations of the Graduate College.

**Financial Support**

Graduate scholarships, fellowships, and teaching and research assistantship are awarded on a competitive basis. The department strives to provide five years of support for students who enter with an M.A. and six years of support for students who enter with a B.A. Students must be in good standing, which requires a University of Iowa g.p.a. of at least 3.50 and full-time enrollment.

Financial aid applications are considered only from students who have applied or been admitted to a degree program in the Graduate College. Applications and all necessary supporting material must be submitted by the end of January for the following academic year. Forms are available from the Department of English and the University’s Office of Admissions.

**Facilities and Resources**

The University of Iowa Libraries collection is strong in all areas of English and American literature. Partly because of the influence of the Iowa Writers’ Workshop, University Libraries has particular strengths in 20th-century fiction and poetry, including manuscript collections of 20th-century authors.

Several periodicals are published under the department’s aegis. The Iowa Review, Walt Whitman Quarterly Review, and Philological Quarterly offer opportunities for especially qualified graduate students to work as research assistants or editorial associates. The Iowa Journal of Cultural Studies, edited by English department graduate students, features creative and scholarly work by students in English and related areas.

The Department of English and the Iowa Writers’ Workshop sponsor a rich and extensive series of readings and lectures by poets, fiction writers, and scholars, all open to students in the department.

The Association of Graduate Students in English sponsors social and intellectual events during the year and provides a forum for student opinion. All graduate students in the department are members.

**Courses**

Individual descriptions for most English courses are not included because content and emphasis may vary considerably from one semester to the next. For detailed descriptions of each semester’s courses, visit the University’s ISIS web site.

**Courses for Non-English Majors**

### Lower-Level Undergraduate

**ENNM:2100 Nonfiction Writing for Non-English Majors** 3 s.h.

**ENNM:2455 American Short Story for Non-English Majors** 3 s.h.

### Upper-Level Undergraduate and Graduate

**ENNM:3105 Popular Literature for Non-English Majors** 3 s.h.
ENNM:3120 Prose by Women Writers for Non-English Majors  3 s.h.
ENNM:3170 Forms of the Essay for Non-English Majors  3 s.h.
ENNM:3230 British Novel: Scott to Conrad for Non-English Majors  3 s.h.
ENNM:3420 Literature and Culture of 20th-Century America for Non-English Majors  3 s.h.
ENNM:3633 Personal Writing for Non-English Majors  3 s.h.
ENNM:3640 Writing for Business and Industry for Non-English Majors  3 s.h.

General Education, Lower-Level Undergraduate

Note: CW:1800 Creative Writing Studio Workshop and CNW:1620 Introduction to Creative Nonfiction do not count toward the English major or minor.

CNW:1620 Introduction to Creative Nonfiction  3 s.h.
Exploration of creative nonfiction genres through readings, discussion, and writing exercises; introduction to workshop environment. Requirements: English nonmajor. GE: Literary, Visual, and Performing Arts.

CW:1800 Creative Writing Studio Workshop  3 s.h.
Experience reading and writing fiction, poetry, and personal narrative in a workshop setting; study of published work and critical discussion from a writer's standpoint; critique of class members' work. GE: Literary, Visual, and Performing Arts.

Literature, General Education

All students earning a degree from the College of Liberal Arts and Sciences, except English majors, must take ENGL:1200 The Interpretation of Literature as part of the General Education Program (p. 313). English majors should substitute a course from the Literary, Visual, and Performing Arts area of General Education, excluding MUS:1020 Performance Instruction for Nonmajors, DANC:1010 Beginning Tap through DANC:2040 Intermediate Modern, and DANC:4880 Dance Performance.

Course ENGL:1200 The Interpretation of Literature (or its equivalent by examination or transfer) is a prerequisite for courses ENGL:1320 Heroes and Villains through ENGL:1355 Literatures of Native American Peoples. The pass/nonpass option is available only for students in the Colleges of Nursing and Engineering with consent of the student's advisor and the instructor.

Lower-Level Undergraduate

ENGL:1200 The Interpretation of Literature  3 s.h.
Ways of reading; focus on reader, text, contexts; poetry, short fiction, drama, novels. Prerequisites: RHET:1030. Requirements: successful completion of the rhetoric requirement. GE: Interpretation of Literature.
ENGL:1320 Heroes and Villains  3 s.h.
Heroes, heroines, and villains as products of the imagination; literary representations of heroes, heroines, and villains in varied social and historical situations; how their representation shapes our understanding of heroism and of villainy. Prerequisites: ENGL:1200 and RHET:1030. Requirements: successful completion of the rhetoric requirement and then ENGL:1200. Recommendations: closed to students who have taken ENGL:1325. GE: Literary, Visual, and Performing Arts.
ENGL:1325 Comic and Tragic Literature  3 s.h.
Interrelations of comic and tragic literature, including film and other popular media, and their connection with human experience; comic and tragic forms and their uses in different social and historical situations. Prerequisites: ENGL:1200 and RHET:1030. Requirements: successful completion of the rhetoric requirement and then ENGL:1200. Recommendations: closed to students who have taken ENGL:1320. GE: Literary, Visual, and Performing Arts.
ENGL:1330 The Art of Storytelling  3 s.h.
Selected masterpieces and recent developments in the art of storytelling in poetry and prose. Prerequisites: ENGL:1200 and RHET:1030. Requirements: successful completion of the rhetoric requirement and then ENGL:1200. GE: Literary, Visual, and Performing Arts.
ENGL:1345 American Lives  3 s.h.
ENGL:1350 Literature and Sexualities  3 s.h.
Works from various genres, time periods, cultures that reflect and construct a wide range of sexual identities. Prerequisites: ENGL:1200 and RHET:1030. Requirements: successful completion of the rhetoric requirement and then ENGL:1200. GE: Literary, Visual, and Performing Arts.
ENGL:1355 Literatures of Native American Peoples  3 s.h.
Genres of Native American literature, including oral literature; focus on written literature (fiction, essays, poetry, drama). Prerequisites: ENGL:1200 and RHET:1030. Requirements: successful completion of the rhetoric requirement and then ENGL:1200. GE: Literary, Visual, and Performing Arts; Values, Society, and Diversity. Same as AINS:1355.

Literature

English department courses are open to all undergraduates who have satisfied the rhetoric requirement. Undergraduates are encouraged to complete the required course ENGL:2010 Foundation of the English Major: Histories, Literatures, and Pleasures as soon as they declare the English major. Students also are encouraged to take one or more introductory departmental courses, ENGL:2120 Introduction to Cultural Studies through ENGL:2170 Introduction to the Essay, before attempting courses numbered 3000 or above.

Courses ENGL:4000 English Honors Seminar, ENGL:4040 Undergraduate Honors Project, and ENGL:4010 Special Project for Undergraduates may be repeated. Most courses
with the prefix ENGL may not be repeated. Occasionally, with written consent from the department's Undergraduate Advising Office, a student may repeat a course if the course's subject matter is different from that of a course the student already has taken.

**Lower-Level Undergraduate**

**ENGL:1100 City of Literature**

Literary history of Iowa City from the founding of Writers' Workshop to its designation as a UNESCO City of Literature. 3 s.h.

**ENGL:1410 Sex and Popular Culture in the Postwar U.S.**

Critical and historical introduction to representation of human sexuality in American popular culture from World War II to the present. GE: Values, Society, and Diversity. Same as AMST:1060, GWSS:1060. 3 s.h.

**ENGL:1420 Technologies and Literatures of the Future**

Introduction to discourses of futurology; dramatic advances in machine intelligence, promise of nanotechnology, and future of biological research that have blurred long-held distinctions between science and science fiction; issues and controversies prominent in this futurological discourse. GE: Values, Society, and Diversity. 3 s.h.

**ENGL:2010 Foundation of the English Major: Histories, Literatures, Pleasures**

History and practice of English as a discipline; four central aspects of literary study. 3 s.h.

**ENGL:2030 Literary Readings Attendance**

Attendance at diverse literary readings and scholarly presentations on the University of Iowa campus and in Iowa City, featuring visiting, local, and University of Iowa writers and scholars. 1 s.h.

**ENGL:2040 English at Work**

What can be done with an English degree; knowledge and skills gained as an English major that are in high demand among a wide variety of employers; important steps taken as a student that translate unique career dreams into reality; work with Pomerantz Career Center staff. 1 s.h.

**ENGL:2080 English Winter Practicum**

2 s.h.

**ENGL:2100 Introduction to Criticism and Theory**

English majors may apply this course to the following area and/or period requirement. AREA: Literary Theory and Interdisciplinary Studies. PERIOD: 20th/21st-Century Literature. 3 s.h.

**ENGL:2105 Disability in Literature and Cultural Theory**

Introduction to disability studies; examination of disability in cultural and literary contexts; core course for the Certificate in Disability Studies. English majors may apply this course to the following area and/or period requirement. AREA: Literary Theory and Interdisciplinary Studies. PERIOD: 20th/21st-Century Literature. 3 s.h.

**ENGL:2120 Introduction to Cultural Studies**

English majors may apply this course to the following area and/or period requirement. AREA: Literary Theory and Interdisciplinary Studies. PERIOD: 20th/21st-Century Literature. 3 s.h.

**ENGL:2130 Introduction to the Novel**

English majors may apply this course to the following area and/or period requirement. AREA: Literary Theory and Interdisciplinary Studies. PERIOD: 18th/19th-Century Literature, or 20th/21st-Century Literature. 3 s.h.

**ENGL:2140 Introduction to Poetry**

English majors may apply this course to the following area and/or period requirement. AREA: Literary Theory and Interdisciplinary Studies. PERIOD: 18th/19th-Century Literature, or 20th/21st-Century Literature. 3 s.h.

**ENGL:2150 Introduction to the Short Story**

English majors may apply this course to the following area and/or period requirement. AREA: Literary Theory and Interdisciplinary Studies. PERIOD: 20th/21st-Century Literature. 3 s.h.

**ENGL:2160 Introduction to Drama**

English majors may apply this course to the following area and/or period requirement. AREA: Literary Theory and Interdisciplinary Studies. PERIOD: 20th/21st-Century Literature. 3 s.h.

**ENGL:2170 Introduction to the Essay**

English majors may apply this course to the following area and/or period requirement. AREA: Literary Theory and Interdisciplinary Studies. PERIOD: 20th/21st-Century Literature. 3 s.h.

**ENGL:2180 Techniques and Literatures of the Future**

English majors may apply this course to the following area and/or period requirement. AREA: Literary Theory and Interdisciplinary Studies. PERIOD: 20th/21st-Century Literature. 3 s.h.

**ENGL:2191 Modern Fiction**

English majors may apply this course to the following area and/or period requirement. AREA: Literary Theory and Interdisciplinary Studies. PERIOD: 20th/21st-Century Literature. 3 s.h.

**ENGL:2192 Postmodern Fiction**

English majors may apply this course to the following area and/or period requirement. AREA: Literary Theory and Interdisciplinary Studies. PERIOD: 20th/21st-Century Literature. 3 s.h.

**ENGL:2193 Literature, Culture, and Women**

English majors may apply this course to the following area and/or period requirement. AREA: Literary Theory and Interdisciplinary Studies. PERIOD: 18th/19th-Century Literature, or 20th/21st-Century Literature. Same as GWSS:2193. 3 s.h.

**ENGL:2194 Lyric Structures**

English majors may apply this course to the following area and/or period requirement. AREA: Literary Theory and Interdisciplinary Studies. PERIOD: 20th/21st-Century Literature. 3 s.h.

**ENGL:2206 Classical and Biblical Literature**

English majors may apply this course to the following area and/or period requirement. AREA: Medieval and Early Modern Literature and Culture. PERIOD: Early Literatures Through 17th Century. 3 s.h.

**ENGL:2216 Selected Works of the Middle Ages**

3 s.h.
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<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ENGL:2236</td>
<td>Selected Early Authors</td>
<td>3 s.h.</td>
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<tr>
<td>ENGL:2309</td>
<td>Selected British Authors Before 1900</td>
<td>3 s.h.</td>
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<td>ENGL:2310</td>
<td>Selected British Authors After 1900</td>
<td>3 s.h.</td>
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<tr>
<td>ENGL:2329</td>
<td>Topics in Modern British Literature Before 1900</td>
<td>3 s.h.</td>
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<td>ENGL:2330</td>
<td>Topics in Modern British Literature After 1900</td>
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<td>ENGL:2338</td>
<td>Eighteenth-Century British Literature</td>
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<td>ENGL:2348</td>
<td>British Romanticism</td>
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<td>ENGL:2359</td>
<td>Victorian Literature</td>
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<td>ENGL:2360</td>
<td>Twentieth-Century British Literature</td>
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<tr>
<td>ENGL:2361</td>
<td>Twenty-first-Century British Literature</td>
<td>3 s.h.</td>
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</tbody>
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Black literature born amid political controversy, from slave narratives to award-winning texts of late 20th century; evolving politics of African American writers; changing political landscape of this expansive period and representative literature; how African American writers shape U.S. political debate; surprising politics of many canonical African American writers. English majors may apply this course to the following area and/or period requirement. AREA: American Literature and Culture. PERIOD: 18th/19th-Century Literature, or 20th/21st-Century Literature. Same as AFAM:2781, POLI:2107.

ENGL:2462 The Look of Blackness: African American Literature and Visual Art
3 s.h.
Examination of African American literature over a 200-year span; how preoccupation with blackness as a visual marker of difference impacts formation of written works; how black writers wield, emphasize, and manipulate visuality; blackness foregrounded as if literary texts operate in league with, or in defiance of, visual images circulating throughout American culture, from late 18th-century poetry to mid 20th-century novels; primary texts placed alongside high art and popular visual forms of distinct historical moments to explore how black American writers deploy visual art forms in narrative conceptions of black identity. Same as AFAM:2055.

ENGL:2463 Topics in African American Literature
3 s.h.
English majors may apply this course to the following area and/or period requirement. AREA: American Literature and Culture. PERIOD: 20th/21st-Century Literature.

ENGL:2465 Selected African American Authors
3 s.h.
English majors may apply this course to the following area and/or period requirement. AREA: American Literature and Culture. PERIOD: 20th/21st-Century Literature. Same as AFAM:2465.

ENGL:2475 Topics in Asian American Literature
3 s.h.
English majors may apply this course to the following area and/or period requirement. AREA: American Literature and Culture. PERIOD: 20th/21st-Century Literature.

ENGL:2505 Introduction to Postcolonial Studies
3 s.h.
English majors may apply this course to the following area and/or period requirement. AREA: Transnational Literature and Postcolonial Studies. PERIOD: 20th/21st-Century Literature.

ENGL:2510 Selected Transnational Authors
3 s.h.
English majors may apply this course to the following area and/or period requirement. AREA: Transnational Literature and Postcolonial Studies. PERIOD: 20th/21st-Century Literature.

ENGL:2560 Topics in Culture and Identity
3 s.h.
English majors may apply this course to the following area and/or period requirement. AREA: Transnational Literature and Postcolonial Studies. PERIOD: 18th/19th-Century Literature, or 20th/21st-Century Literature.

Upper-Level Undergraduate and Graduate

ENGL:3100 Topics in Criticism and Theory
3 s.h.
English majors may apply this course to the following area and/or period requirement. AREA: Literary Theory and Interdisciplinary Studies. PERIOD: 20th/21st-Century Literature.

ENGL:3102 Topics in Poetry and Poetics
3 s.h.
English majors may apply this course to the following area and/or period requirement. AREA: Literary Theory and Interdisciplinary Studies. PERIOD: 18th/19th-Century Literature, or 20th/21st-Century Literature.

ENGL:3105 Topics in Popular Culture
3 s.h.
English majors may apply this course to the following area and/or period requirement. AREA: Literary Theory and Interdisciplinary Studies. PERIOD: 20th/21st-Century Literature.

ENGL:3107 Literature and Anthropology
3 s.h.
Topics vary. Same as ANTH:3107, CL:3107.

ENGL:3108 Children’s Literature
3 s.h.
Classic children’s literature and contemporary critical approaches to the genre. English majors may apply this course to the following area and/or period requirement. AREA: Literary Theory and Interdisciplinary Studies, or Modern British Literature. PERIOD: 18th/19th-Century Literature, or 20th/21st-Century Literature. Same as GWSS:3120.

ENGL:3130 Topics in Film and Literature
3 s.h.
English majors may apply this course to the following area and/or period requirement. AREA: Literary Theory and Interdisciplinary Studies. PERIOD: 20th/21st-Century Literature.

ENGL:3133 Narrative and the Cinema
3 s.h.
English majors may apply this course to the following area and/or period requirement. AREA: Literary Theory and Interdisciplinary Studies. PERIOD: 20th/21st-Century Literature. Same as CINE:3135.

ENGL:3140 Literature and the Book
3 s.h.
English majors may apply this course to the following area and/or period requirement. AREA: Literary Theory and Interdisciplinary Studies. PERIOD: Early Literatures through 17th-Century, 18th/19th-Century Literature, or 20th/21st-Century Literature. Same as UICB:3140.

ENGL:3142 Topics in Book History
3 s.h.
Authorship, publishing, and so forth within specific historical and cultural contexts. English majors may apply this course to the following area and/or period requirement. AREA: Literary Theory and Interdisciplinary Studies. PERIOD: Early Literatures Through 17th Century, 18th/19th-Century Literature, or 20th/21st-Century Literature. Same as UICB:3142.
ENGL:3150 Literature and Philosophic Thought

English majors may apply this course to the following area and/or period requirement. AREA: Literary Theory and Interdisciplinary Studies. PERIOD: 20th/21st-Century Literature.

ENGL:3152 Literature and Society

English majors may apply this course to the following area and/or period requirement. AREA: Literary Theory and Interdisciplinary Studies. PERIOD: 20th/21st-Century Literature. Same as CL:3379.

ENGL:3155 Literature and Art

English majors may apply this course to the following area and/or period requirement. AREA: Literary Theory and Interdisciplinary Studies. PERIOD: 18th/19th-Century Literature, or 20th/21st-Century Literature. Same as CL:3377.

ENGL:3160 Literary Genres and Modes

English majors may apply this course to the following area and/or period requirement. AREA: Literary Theory and Interdisciplinary Studies. PERIOD: 20th/21st-Century Literature.

ENGL:3173 Gender, Sexuality, and Literature

Representations of gender, class, and sexuality in British, American, or postcolonial literature. English majors may apply this course to the following area and/or period requirement. AREA: Literary Theory and Interdisciplinary Studies. PERIOD: 20th/21st-Century Literature. Same as GWSS:3173.

ENGL:3180 Topics in Digital Media

English majors may apply this course to the following area and/or period requirement. AREA: Literary Theory and Interdisciplinary Studies. PERIOD: 20th/21st-Century Literature. Same as THTR:3180.

ENGL:3181 Digital Media and Poetics

Theory and practice of one or more varieties of digital composition; digital art analyzed and created in specific forms—radio drama, interactive fiction, procedural and constructivist poetics. English majors may apply this course to the following area and/or period requirement. AREA: Literary Theory and Interdisciplinary Studies. PERIOD: 20th/21st-Century Literature.

ENGL:3182 Digital Cultures and Literacies

English majors may apply this course to the following area and/or period requirement. AREA: Literary Theory and Interdisciplinary Studies. PERIOD: 20th/21st-Century Literature.

ENGL:3186 Science Fiction

English majors may apply this course to the following area and/or period requirement. AREA: Literary Theory and Interdisciplinary Studies. PERIOD: 20th/21st-Century Literature.

ENGL:3216 Topics in Medieval and Renaissance Literature

English majors may apply this course to the following area and/or period requirement. AREA: Medieval and Early Modern Literature and Culture. PERIOD: Early Literatures Through 17th Century.

ENGL:3226 Literature and Culture of the Middle Ages

English majors may apply this course to the following area and/or period requirement. AREA: Medieval and Early Modern Literature and Culture. PERIOD: Early Literatures Through 17th Century. Same as MDVL:3226.

ENGL:3228 Literature and Culture of the Restoration

English majors may apply this course to the following area and/or period requirement. AREA: Medieval and Early Modern Literature and Culture. PERIOD: Early Literatures Through 17th Century.

ENGL:3236 Literature and the Culture of the Renaissance

English majors may apply this course to the following area and/or period requirement. AREA: Medieval and Early Modern Literature and Culture. PERIOD: Early Literatures Through 17th Century.

ENGL:3237 Literature and Culture of Seventeenth-Century England

English majors may apply this course to the following area and/or period requirement. AREA: Medieval and Early Modern Literature and Culture. PERIOD: Early Literatures Through 17th Century.

ENGL:3246 16th- and 17th-Century Poetry

English majors may apply this course to the following area and/or period requirement. AREA: Medieval and Early Modern Literature and Culture. PERIOD: Early Literatures Through 17th Century.

ENGL:3256 Elementary Old English

Reading knowledge of Old English; introduction to Anglo-Saxon literature and culture. English majors may apply this course to the following area and/or period requirement. AREA: Medieval and Early Modern Literature and Culture. PERIOD: Early Literatures Through 17th Century.

ENGL:3257 Old English Beowulf

English majors may apply this course to the following area and/or period requirement. AREA: Medieval and Early Modern Literature and Culture. PERIOD: Early Literatures Through 17th Century.

ENGL:3266 Medieval Celtic Literature

English majors may apply this course to the following area and/or period requirement. AREA: Medieval and Early Modern Literature and Culture. PERIOD: Early Literatures Through 17th Century.

ENGL:3267 Medieval Norse Literature

English majors may apply this course to the following area and/or period requirement. AREA: Medieval and Early Modern Literature and Culture. PERIOD: Early Literatures Through 17th Century.
ENGL:3276 Medieval Drama 3 s.h.
English majors may apply this course to the following area and/or period requirement. AREA: Medieval and Early Modern Literature and Culture. PERIOD: Early Literatures Through 17th Century. Same as THTR:3276.

ENGL:3277 English Renaissance Drama 3 s.h.
English majors may apply this course to the following area and/or period requirement. AREA: Medieval and Early Modern Literature and Culture. PERIOD: Early Literatures Through 17th Century. Same as THTR:3277.

ENGL:3286 Chaucer 3 s.h.
English majors may apply this course to the following area and/or period requirement. AREA: Medieval and Early Modern Literature and Culture. PERIOD: Early Literatures Through 17th Century.

ENGL:3287 Shakespeare 3 s.h.
English majors may apply this course to the following area and/or period requirement. AREA: Medieval and Early Modern Literature and Culture. PERIOD: Early Literatures Through 17th Century. Same as THTR:3287.

ENGL:3296 Milton 3 s.h.
English majors may apply this course to the following area and/or period requirement. AREA: Medieval and Early Modern Literature and Culture. PERIOD: Early Literatures Through 17th Century.

ENGL:3320 Modern British Drama 3 s.h.
English majors may apply this course to the following area and/or period requirement. AREA: Modern British Literature and Culture. PERIOD: Early Literatures Through 17th Century, or 20th/21st-Century Literature.

ENGL:3329 Literature and Culture of Eighteenth-Century Britain 3 s.h.
English majors may apply this course to the following area and/or period requirement. AREA: Modern British Literature and Culture. PERIOD: 18th/19th-Century Literature, or 20th/21st-Century Literature.

ENGL:3338 Literature and Culture of the Romantic Period 3 s.h.
English majors may apply this course to the following area and/or period requirement. AREA: Modern British Literature and Culture. PERIOD: 18th/19th-Century Literature.

ENGL:3339 Literature and Culture of Nineteenth-Century Britain 3 s.h.
English majors may apply this course to the following area and/or period requirement. AREA: Modern British Literature and Culture. PERIOD: 18th/19th-Century Literature.

ENGL:3339 Literature and Culture of Nineteenth-Century Scotland 3 s.h.
English majors may apply this course to the following area and/or period requirement. AREA: Modern British Literature and Culture. PERIOD: 18th/19th-Century Literature.

ENGL:3340 American Drama Since 1900 3 s.h.
American playwrights and plays after 1900. English majors may apply this course to the following area and/or period requirement. AREA: American Literature and Culture. PERIOD: 20th/21st-Century Literature. Same as THTR:3440.

ENGL:3350 Literature and Culture of 20th- and 21st-Century Britain 3 s.h.
English majors may apply this course to the following area and/or period requirement. AREA: Modern British Literature and Culture. PERIOD: 20th/21st-Century Literature.

ENGL:3355 British Poetry 3 s.h.
English majors may apply this course to the following area and/or period requirement. AREA: Modern British Literature and Culture. PERIOD: 18th/19th-Century Literature, or 20th/21st-Century Literature.

ENGL:3360 British Fiction 3 s.h.
British fiction written since 1700. English majors may apply this course to the following area and/or period requirement. AREA: Modern British Literature and Culture. PERIOD: 18th/19th-Century Literature, or 20th/21st-Century Literature.

ENGL:3365 British History 3 s.h.
British history. English majors may apply this course to the following area and/or period requirement. AREA: Modern British Literature and Culture. PERIOD: 18th/19th-Century Literature, or 20th/21st-Century Literature.

ENGL:3370 British History Through 17th Century 3 s.h.
British history. English majors may apply this course to the following area and/or period requirement. AREA: Modern British Literature and Culture. PERIOD: 18th/19th-Century Literature, or 20th/21st-Century Literature.

ENGL:3375 British Film 3 s.h.
British films. English majors may apply this course to the following area and/or period requirement. AREA: Modern British Literature and Culture. PERIOD: 18th/19th-Century Literature, or 20th/21st-Century Literature.
ENGL:3441 Native American Literature 3 s.h.  
English majors may apply this course to the following area and/or period requirement. AREA: American Literature and Culture. PERIOD: 20th/21st-Century Literature. Same as AINS:3441.

ENGL:3444 Literatures of the American Peoples 3 s.h.  
English majors may apply this course to the following area and/or period requirement. AREA: American Literature and Culture. PERIOD: 18th/19th-Century Literature, or 20th/21st-Century Literature.

ENGL:3450 American Regional Literatures 3 s.h.  
English majors may apply this course to the following area and/or period requirement. AREA: American Literature and Culture. PERIOD: 18th/19th-Century Literature, or 20th/21st-Century Literature.

ENGL:3455 Jewish American Literature 3 s.h.  
English majors may apply this course to the following area and/or period requirement. AREA: American Literature and Culture. PERIOD: 20th/21st-Century Literature.

ENGL:3459 African American Literature Before 1900 3 s.h.  
English majors may apply this course to the following area and/or period requirement. AREA: American Literature and Culture. PERIOD: 18th/19th-Century Literature. Same as AFAM:3459.

ENGL:3460 African American Literature After 1900 3 s.h.  
English majors may apply this course to the following area and/or period requirement. AREA: American Literature and Culture. PERIOD: 20th/21st-Century Literature. Same as AFAM:3460.

ENGL:3462 African American Drama 3 s.h.  
English majors may apply this course to the following area and/or period requirement. AREA: American Literature and Culture. PERIOD: 18th/19th-Century Literature, or 20th/21st-Century Literature. Same as THTR:3462, AFAM:3462.

ENGL:3465 African American Autobiography 3 s.h.  
English majors may apply this course to the following area and/or period requirement. AREA: American Literature and Culture. PERIOD: 20th/21st-Century Literature. Same as AFAM:3465.

ENGL:3480 American Literature and History 3 s.h.  
Examination of fictional histories (novels about history), their relationship to historical interpretation. English majors may apply this course to the following area and/or period requirement. AREA: American Literature and Culture. PERIOD: 18th/19th-Century Literature, or 20th/21st-Century Literature. Same as AMST:3480.

ENGL:3489 Contemporary American Women Writers 3 s.h.  
Interdisciplinary study of contemporary American women writers whose works depict the shaping force of race, class, gender, and sexuality on individuals, families, and communities.

ENGL:3510 Topics in Transnational Literature 3 s.h.  
English majors may apply this course to the following area and/or period requirement. AREA: Transnational Literature and Postcolonial Studies. PERIOD: 20th/21st-Century Literature.

ENGL:3515 Topics in Postcolonial Studies 3 s.h.  
English majors may apply this course to the following area and/or period requirement. AREA: Transnational Literature and Postcolonial Studies. PERIOD: 20th/21st-Century Literature.

ENGL:3519 Literature and Culture of Empire 3 s.h.  
English majors may apply this course to the following area and/or period requirement. AREA: Transnational Literature and Postcolonial Studies. PERIOD: 18th/19th-Century Literature or 20th/21st-Century Literature.

ENGL:3520 Literature and Culture of the 20th and 21st Century 3 s.h.  
English majors may apply this course to the following area and/or period requirement. AREA: Transnational Literature and Postcolonial Studies. PERIOD: 20th/21st-Century Literature.

ENGL:3525 Literature and Culture of the Americas 3 s.h.  
English majors may apply this course to the following area and/or period requirement. AREA: Transnational Literature and Culture. PERIOD: 20th/21st-Century Literature.

ENGL:3530 Caribbean Literature and Culture 3 s.h.  
English majors may apply this course to the following area and/or period requirement. AREA: Transnational Literature and Culture. PERIOD: 20th/21st-Century Literature.

ENGL:3532 Modernist Women Writers 3 s.h.  
English majors may apply this course to the following area and/or period requirement. AREA: Transnational Literature and Postcolonial Studies. PERIOD: 20th/21st-Century Literature.

ENGL:3535 Inter-American Studies 3 s.h.  
English majors may apply this course to the following area and/or period requirement. AREA: Transnational Literature and Postcolonial Studies. PERIOD: 20th/21st-Century Literature.

ENGL:3540 Literature of the Indian Subcontinent 3 s.h.  
English majors may apply this course to the following area and/or period requirement. AREA: Transnational Literature and Postcolonial Studies. PERIOD: 20th/21st-Century Literature.
ENGL:3550 African Literature 3 s.h.
English majors may apply this course to the following area and/or period requirement. AREA: Transnational Literature and Postcolonial Studies. PERIOD: 20th/21st-Century Literature. Same as AFAM:3550.

ENGL:3555 Topics in African Cinema 3 s.h.
English majors may apply this course to the following area and/or period requirement. AREA: Transnational Literature and Postcolonial Studies. PERIOD: 20th/21st-Century Literature. Same as AFAM:3555.

ENGL:3570 Transnational and Postcolonial Writing by Women 3 s.h.
English majors may apply this course to the following area and/or period requirement. AREA: Transnational Literature and Postcolonial Studies. PERIOD: 20th/21st-Century Literature. Same as CL:3570.

ENGL:3580 Identity and Social Issues 3 s.h.
English majors may apply this course to the following area and/or period requirement. AREA: Transnational Literature and Postcolonial Studies. PERIOD: 18th/19th-Century Literature or 20th/21st-Century Literature.

ENGL:3590 People on the Move 3 s.h.
English majors may apply this course to the following area and/or period requirement. AREA: Transnational Literature and Postcolonial Studies. PERIOD: 20th/21st-Century Literature.

ENGL:3595 International Literature Today 1,3 s.h.
English majors may apply this course to the following area and/or period requirement. AREA: Transnational Literature and Postcolonial Studies. PERIOD: 20th/21st-Century Literature. Same as IWP:3191, WLLC:3191.

ENGL:4150 Introduction to Book Studies 3 s.h.
Theory and practice of book studies; meanings of word and image in the book format; comparative study of other media, applied study of the codex as physical artifact. English majors may apply this course to the following area and/or period requirement. AREA: Literary Theory and Interdisciplinary Studies. PERIOD: Early Literatures Through 17th Century, or 18th/19th-Century Literature, or 20th/21st-Century Literature. Same as UICB:4150, SLIS:4150.

ENGL:4172 London Performance Study 3 s.h.
English majors may apply this course to the following area and/or period requirement. AREA: Literary Theory and Interdisciplinary Studies. PERIOD: 20th/21st-Century Literature. Same as THTR:4630.

ENGL:4195 Interdisciplinary Studies 3 s.h.
Exploration of how readings of theory can be evaluated through discussions and readings in literature. English majors may apply this course to the following area and/or period requirement. AREA: Literary Theory and Interdisciplinary Studies. PERIOD: 20th/21st-Century Literature.

ENGL:4410 Midwest African American Literature and Culture 3 s.h.
English majors may apply this course to the following area and/or period requirement. AREA: American Literature and Culture. PERIOD: 20th/21st-Century Literature. Same as AFAM:4710.

Nonfiction and Creative Writing

Many courses may be repeated.

Other courses listed below may be repeated with consent of the instructor.

Courses CW:1800 Creative Writing Studio Workshop and CNW:1620 Introduction to Creative Nonfiction do not count toward the English major or minor.

Course CNW:3630 Advanced Nonfiction Writing has a prerequisite.

Course CNW:4631 Undergraduate Essay Workshop requires consent of instructor (see course description on ISIS).

Creative Nonfiction Writing, Lower-Level Undergraduate

CNW:2680 The Art and Craft of Creative Nonfiction 3 s.h.
How we tell stories—every time people talk about themselves, someone they know, places visited or events experienced; creation of a story with intention to entertain and inform a particular audience; how to create compelling, thought-provoking, and resonant texts from raw material of daily life; exploration of three fundamentals of great storytelling—taking emotional and intellectual risks, being imaginatively rigorous, and revising, revising, revising. English majors may apply this course to the following area and/or period requirement. AREA: Nonfiction and Creative Writing.

CNW:2690 The Art and Craft of Writing About Business 3 s.h.
Preparation for real world writing situations; techniques for revision; creation of texts that are clear, persuasive, and coherent; practice techniques by revising many kinds of transactional documents, from letters and memos to procedures and reports; examples from actual business transactions; enhancement of writing, editing, job search, and managerial skills. English majors may apply this course to the following area and/or period requirement. AREA: Nonfiction and Creative Writing.

CNW:2700 The Art and Craft of Personal Writing 3 s.h.
Moments of wonder, confusion, and blips in memory that can reveal deep and complicated truths in life; different kinds of personal writing with focus on strategies that writers employ to create rich and compelling stories; character, scene, voice, point of view, suspense, and timing. English majors may apply this course to the following area and/or period requirement. AREA: Nonfiction and Creative Writing.

CNW:2710 The Art and Craft of Food Writing 3 s.h.
Vivid prose that evokes memories, moods, places, and events; creating a visceral bond with readers as powerful as in any other art form; basics of food writing; how to heighten awareness of physical world through exercises that focus on sensory details. English majors may apply this course to the following area and/or period requirement. AREA: Nonfiction and Creative Writing.

CNW:2720 The Art and Craft of Writing
About Culture
Writing about the culture surrounding us—literature, songs, movies, magazines, television, food, concerts, theater, commercials, billboards, comic books, the Internet, museums, sports, architecture; readings, field trips, and multiple approaches to writing. English majors may apply this course to the following area and/or period requirement. AREA: Nonfiction and Creative Writing.

CNW:2730 The Art and Craft of Science Writing
Introduction to science writing; development of a clear and engaging prose style through readings and workshops. English majors may apply this course to the following area and/or period requirement. AREA: Nonfiction and Creative Writing.

CNW:2740 The Art and Craft of Writing about the Environment
Tradition of nature writing and how it has inspired writers, artists, and activists to find more complicated and daring interpretations of what constitutes an environment; reading and writing that challenges assumptions and pushes boundaries of environmental writing and nonfiction. English majors may apply this course to the following area and/or period requirement. AREA: Nonfiction and Creative Writing.

CNW:2760 The Art and Craft of Writing for Social Change
How nonfiction writers have responded to tumultuous social, political, and cultural topics of their day through reading and writing. English majors may apply this course to the following area and/or period requirement. AREA: Nonfiction and Creative Writing.

CNW:2770 The Art and Craft of Writing for New Media
Fundamental elements of new media; readings that celebrate and challenge today's newest experiments in podcasts, video games, the Internet, Twitter feeds, and Tumblr narratives; crafting and critiquing texts in these media. English majors may apply this course to the following area and/or period requirement. AREA: Nonfiction and Creative Writing.

CNW:2780 The Art and Craft of Writing
About Sports
Introduction to sports writing through reading and writing. English majors may apply this course to the following area and/or period requirement. AREA: Nonfiction and Creative Writing.

CNW:2790 The Art and Craft of Humor Writing
How comedy functions as one of many tools a writer has at his or her disposal through reading and writing. English majors may apply this course to the following area and/or period requirement. AREA: Nonfiction and Creative Writing.

CNW:2800 The Art and Craft of Writing Across Genres
Hybrid texts that defy classification—graphic books, stand-up comedy, lists, letters, poems, freestyle rap—engaged through reading and writing. English majors may apply this course to the following area and/or period requirement. AREA: Nonfiction and Creative Writing.

CNW:2810 The Art and Craft of Writing with Emotion
Role of emotion in creative writing through readings and writing. English majors may apply this course to the following area and/or period requirement. AREA: Nonfiction and Creative Writing.

CNW:2820 The Art and Craft of the Literary Essay
Different forms of the essay—reviews, memoirs, profiles, travelogues, journalism, cultural criticism—through readings and writing. English majors may apply this course to the following area and/or period requirement. AREA: Nonfiction and Creative Writing.

CNW:2830 The Art and Craft of Immersion Journalism
Immersion in field work, leading to nonfiction writing; writer-in-residence for a particular place, institution, or organization; observation and exploration of everything that happens within those boundaries. English majors may apply this course to the following area and/or period requirement. AREA: Nonfiction and Creative Writing.

CNW:2840 The Art and Craft of Travel Writing
How to capture a journey's details and sensations through explorations of character, scene, point of view, and timing; why a person does not need to be a world traveler to become a compelling "writer about place"; readings, field trips, multiple approaches to workshop. AREA: Nonfiction and Creative Writing.

CNW:2850 The Art and Craft of Writing About Politics
How to observe and reveal complex personalities, relationships, beliefs, and histories that underlie political events and races; strong emphasis on how to gather field research and shape it into compelling literary prose; Iowa's unique role in political theater. AREA: Nonfiction and Creative Writing.

CNW:2900 The Essay Prize
Discussion and evaluation of a variety of essays nominated by an independent committee of writers, editors, filmmakers, sound designers, performance artists, and readers for the Essay Prize; selection of winner. English majors may apply this course to the following area and/or period requirement. AREA: Nonfiction and Creative Writing.

CNW:2910 Writing for Applications and Awards
Practical exploration of how to prepare applications for fellowships, awards, grants, and graduate schools; emphasis on composing and revising personal statements, project narratives, funding proposals; fundamentals of how to clearly, concisely, and compellingly present ideas to specialized and general audiences. **AREA: Nonfiction and Creative Writing.**

**Creative Writing, Lower-Level Undergraduate**

**CW:2100 Creative Writing** 3 s.h.
Guidance in the process of writing fiction and poetry; writing as exploration; development of students' critical skills as readers; application of new knowledge and skills to students' own writing. English majors may apply this course to the following area and/or period requirement. **AREA: Nonfiction and Creative Writing.**

**CW:2870 Fiction Writing** 3 s.h.
Analysis of works of accomplished fiction writers; critique of class members' short stories, in writing and in class; discussion of how class members use language, characterization, point of view, other elements of fiction in their work. English majors may apply this course to the following area and/or period requirement. **AREA: Nonfiction and Creative Writing.**

**CW:2875 Poetry Writing** 3 s.h.
Careful writing of poems, reading of poetry by class members as well as established poets; supportive workshop context. English majors may apply this course to the following area and/or period requirement. **AREA: Nonfiction and Creative Writing.**

**Creative Nonfiction Writing, Upper-Level Undergraduate and Graduate**

**CNW:3450 Freelance Reporting and Writing** 4 s.h.
Approaches to writing and marketing articles to magazines, newspapers, other publications; developing ideas, researching periodical markets, writing queries, writing and rewriting articles for publication. Prerequisites: JMC:2010 with a grade of C‑ or higher and JMC:2020 with a grade of C- or higher. Requirements: journalism major. Same as JMC:3450.

**CNW:3600 Issues in Creative Nonfiction** 3 s.h.
Exploration and discussion of a single topic in creative nonfiction through a variety of reading assignments and creative writing exercises. English majors may apply this course to the following area and/or period requirement. **AREA: Nonfiction and Creative Writing.** Prerequisites: RHET:1030.

**CNW:3630 Advanced Nonfiction Writing** 3 s.h.
Essay writing; focus on workshop environment. Prerequisites: CNW:2680. Requirements: undergraduate standing.

**CNW:3632 Prose Style** 3 s.h.
Sentences: how they work, what they do; how sentences can help writing, expand understanding of prose style, stretch options.

**CNW:3633 Personal Writing** 3 s.h.

**CNW:3640 Writing for Business and Industry** 3 s.h.

**CNW:3644 Dublin Writing Workshop** 3 s.h.
Intensive writing workshops for aspiring creative writers; study abroad in Dublin, Ireland. English majors may apply this course to the following area and/or period requirement. **AREA: Nonfiction and Creative Writing.**

**CNW:3660 Multimedia Writing** 3 s.h.
Multidisciplinary sessions mixing media production, creative nonfiction, and literary theory; topics ranging from hypertext authoring and electronic magazine publishing to sound art and digital video; principles and practices of writing for alternative media, theoretical understanding of how various media frame the situation; radio essay, video essay, interactive animation, web authoring, electronic magazine publishing.

**CNW:3661 Film and Writing** 3 s.h.
Writers' introduction to digital video; compelling forms of nonfiction filmmaking from the film essay to the environmental documentary; how to convert texts into film, conduct interviews, and shoot and edit digital video; emphasis on careful analysis and making of whitely films.

**CNW:3662 Graphic Writing** 3 s.h.
The photo essay and the graphic memoir, two modes of nonfiction that have steadily increased in prominence and popularity; key texts in both genres (i.e., Dorothea Lange's *American Exodus*, Marjane Satrapi's *Persepolis*, or Art Spiegelman's *Maus*); writing and producing photo essays and short graphic memoirs.

**CNW:3663 Radio and Writing** 3 s.h.
Writing with sound; introduction to radio essays and documentaries with focus on digital audio; analyze key radio works and essayists; produce voiceovers, record interviews, mix music, edit sound and spoken texts in making radio art.

**CNW:3664 Writing About Science** 3 s.h.
Writing about science and technology from neurobiology to astrophysics; exploration of classic literary nonfiction on the sciences; focus on various stylistic practices for making complex topics compelling for a general audience and developing a clear and readable prose style.

**CNW:4355 Approaches to Teaching Writing** 3 s.h.
Theories, practices, strategies, and history of writing and teaching writing. English majors may apply this course to the following area and/or period requirement. **AREA: Nonfiction and Creative Writing.** Same as EDTL:4355.

**CNW:4631 Undergraduate Essay Workshop** 3 s.h.
Experience working on new nonfiction projects, drafting and preparing one piece throughout a semester; individualized work to promote understanding of and creation in genres of nonfiction writing. Requirements: undergraduate standing, successful completion of two CNW courses, and submission of manuscript.

**CNW:4642 Team Writing for Business** 3 s.h.
CNW:4690 Undergraduate Project in Nonfiction Writing

Creative Writing, Upper-Level Undergraduate and Graduate

CW:3003 Writing and Reading Science Fiction 3 s.h.
Science fiction literature as an ongoing conversation about the possible; exploration of world boundaries we have by imagining worlds that we don't (yet); alien encounters that consider ways we react to beings we see as unlike ourselves; alternate histories to illuminate what we may become; issues of composition and craft that underlie all effective fiction; students write and revise works of science fiction and engage in constructive discussion of each other's work.

CW:3005 Professional and Creative Business Communication 3 s.h.
Solid foundation for creative and professional communication in today's modern work world; exploration of techniques, strategies, and craft of writing résumés, letters of interest, email and its related etiquette, and organization of ideas into presentable form; semester-long creative project that builds a bridge between office and the world using modern technology and social media; readings and discussions of literature to better understand issues of ethics, leadership, conflict, moral judgment, decision making, and human nature; how to navigate and succeed in business or any professional field. Same as INTD:3005.

CW:3107 Creative Writing for the Health Professions 3 s.h.
Same as INTD:3107.

CW:3210 Creative Writing and the Natural World 3 s.h.
How humans tether to their environment through stories; students write stories and through writing explore if there is a new tie to sustainable history. Same as INTD:3210.

CW:3215 Creative Writing and Popular Culture 3 s.h.
Creative writing through the lens of popular culture; topics include television, film writing, adaptations, commercials, advertising, magazines, newspapers, comic books, song lyrics, billboards, and backs of cereal boxes. Same as INTD:3300.

CW:3217 Writing and Reading Young Adult Fiction 3 s.h.
Early to contemporary young adult fiction; how the genre addresses issues that are relevant to young people through its wide-ranging subject matter; issues facing the genre, including the debate over what constitutes it; readings and experience writing young adult fiction.

CW:3218 Creative Writing for New Media 3 s.h.
Prepares creative writers for evolving marketplace of electronic text, media; experience writing in varied media such as the Internet, e-books, video games, mobile devices, emergent social narratives. Same as INTD:3200.

CW:3870 Advanced Fiction Writing 3 s.h.
Analysis of accomplished fiction writers' work; critique of class members' short stories, in writing and in class; discussion of how class members use language, characterization, point of view, other elements of fiction in their work. English majors may apply this course to the following area and/or period requirement. AREA: Nonfiction and Creative Writing. Prerequisites: CW:2870.

CW:3875 Advanced Poetry Writing 3 s.h.
Writing poems, reading poetry by class members and established poets; workshop context. English majors may apply this course to the following area and/or period requirement. AREA: Nonfiction and Creative Writing. Prerequisites: CW:2875.

CW:4745 The Sentence: Strategies for Writing 3 s.h.
Writing dynamic, cogent, and grammatically correct sentences; effectively communicating ideas; writing with clarity and confidence; review of grammar and various types of sentences; building complexity by adding adverbial, subordinate, and connective clauses to simple sentences; how rhythm, syntax, and word order expand the meaning of a sentence; application and appreciation.

CW:4747 Creative Writing for the Socially Aware 3 s.h.
Reading short stories, essays, poems, and plays to examine seven subject areas (education; gender and sex roles; relationship and family dynamics; criminal behavior; race, ethnicity, and identity; terrorism and war; death and dying); varied writing assignments, including message boards posts, reading responses, critiques, arguments, research papers, creative writing, and public relations material; analyzing the effectiveness of an argument; supporting claims made in persuasive writing.

CW:4750 Writing and Activism 3 s.h.
Exploration of writing as a political act; examination of texts that focus on activism (e.g., environment, social inequality, racism, war); best practices for literary advocacy and social/political persuasion/instruction; improving dexterity with written persuasion; argumentation, and personal statements; application of study of writing to broader world.

CW:4751 Creative Writing for the Musician 3 s.h.
Better writing by focused appreciation of classical and popular music; musical forms and storytelling; music as a source of inspiration, performance of free-form writing exercises set to different soundtracks; what music can teach about language; scansion; methods for applying musical techniques in word form; how punctuation and grammar create rhythm; tone and diction used to create and modify dynamics of prose; multimedia project incorporating written, visual, and audio storytelling techniques.

CW:4760 The Art of Revision: Rewriting Prose for Clarity and Impact
Writing and rewriting of short stories and essays; specific choices to help writing reach its full potential; examination of first drafts and making strategic or radical decisions on what needs to happen in subsequent drafts in order for writing to better match original intentions; students gain insight from peers on where first drafts are succeeding or falling short, and write second and third drafts of short stories and personal narratives; structural and aesthetic choices.

**CW:4870 Undergraduate Writers' Workshop: Fiction**

English majors may apply this course to the following area and/or period requirement. AREA: Nonfiction and Creative Writing.

**CW:4875 Undergraduate Writers' Workshop: Poetry**

English majors may apply this course to the following area and/or period requirement. AREA: Nonfiction and Creative Writing.

**CW:4880 Undergraduate Writers' Seminar**

Exploration of literature to develop substance and craft; class sessions designed around topic chosen by instructor; modeled after Writers' Workshop graduate reading seminars. English majors may apply this course (except for EX sections) to the following area and/or period requirement. AREA: Nonfiction and Creative Writing. Requirements: completion of rhetoric requirement.

**CW:4894 Undergraduate Project in Creative Writing**

English majors may apply this course to the following area and/or period requirement. AREA: Nonfiction and Creative Writing.

**CW:4897 Novel Writing**

3 s.h.
Introduction to the process of writing a novel through focused lessons on character, perspective, plot, scene, and dialogue; organizing a longer work; creating notes and sections of a novel with progression towards completing a draft. Requirements: creative writing or fiction writing course.

**Writers' Seminars, Upper-Level Undergraduate and Graduate**

**ENGL:3720 Creative Writing Track Colloquium**

3 s.h.
In-depth focus on works by and about visiting writers and literature that contextualizes their work; multiple genres; seminar. Requirements: English major and admission to Undergraduate Creative Writing track.

**ENGL:3721 Writers' Seminar: Fiction**

2 s.h.
In-depth exploration and analysis of creative works in fiction. Requirements: English major and admission to Undergraduate Creative Writing track.

**ENGL:3722 Writers' Seminar: Poetry**

2 s.h.
In-depth exploration and analysis of creative works in poetry. Requirements: English major and admission to Undergraduate Creative Writing track.

**ENGL:3723 Writers' Seminar: Nonfiction**

2 s.h.
Rigorous exploration and analysis of a range of nonfiction creative works. Requirements: English major and admission to Undergraduate Creative Writing track.

**ENGL:3724 Writers' Seminar: Literary Translation**

2 s.h.
Rigorous exploration and analysis of a range of creative works in literary translation. Requirements: English major and admission to Undergraduate Creative Writing track.

**ENGL:3725 Writers' Seminar: Playwriting**

2 s.h.
Rigorous exploration and analysis of a range of creative works in drama. Corequisites: ENGL:3720. Requirements: admission to Undergraduate Creative Writing track.

**ENGL:4720 Creative Writing Track: Special Topics**

3 s.h.
Advanced writing and reading for undergraduate creative writing track; topics vary. Requirements: admission to Undergraduate Creative Writing track.

**Special Topics, Lower-Level Undergraduate**

This course does not fulfill area or period requirements for the English major. It may be used to earn elective credit in the major.

**ENGL:1000 First-Year Seminar**

1 s.h.
Small discussion class taught by a faculty member; topics chosen by instructor; may include outside activities (e.g., films, lectures, performances, readings, visits to research facilities). Requirements: first- or second-semester standing.

**ENGL:1001 CLAS Master Class**

1-3 s.h.
Exploration of a single topic in a series of lectures by faculty presenting divergent perspectives; illuminates intellectual adventure inherent in liberal arts and sciences; encourages discovery of majors and other areas of study within the College of Liberal Arts and Sciences. Same as CLAS:1001, RELS:1010, THTR:1001, CS:1001, CSD:1001, PHIL:1001, BIOC:1001, ARTS:1001.

**Special Topics, Upper-Level Undergraduate and Graduate**

This course does not fulfill area or period requirements for the English major. It may be used to earn elective credit in the major.

**ENGL:4010 Special Project for Undergraduates**

arr.

**Honors, Upper-Level Undergraduate and Graduate**

**ENGL:4000 English Honors Seminar**

3 s.h.
English majors may apply this course to varied area and/or period requirements. Requirements: undergraduate standing and English major g.p.a. of 3.33.

**ENGL:4020 Honors Thesis Workshop**

3 s.h.
Prerequisites: ENGL:4000. Requirements: English major g.p.a. of 3.33.
ENGL:4040 Undergraduate Honors Project 1-3 s.h.
Requirements: admission to English honors program.

Literature, Graduate
Department of English graduate courses are repeatable with the written approval of the department's director of graduate studies.

Introductory Courses
ENGL:5000 Introduction to Graduate Study 1 s.h.
ENGL:5050 Placement Practicum 1 s.h.
Navigation of academic job market and exploration of career opportunities; writing cover letters, curriculum vitae, dissertation abstracts, and teaching statements; application strategies for various jobs in research, liberal arts, community colleges, and outside academia; opportunity to practice interviews and other hands-on coaching; for advanced English department Ph.D., M.A., and M.F.A. students.
ENGL:6950 Colloquium: Teaching Foundations of the English Major 1 s.h.
ENGL:6960 Colloquium: Teaching Literature 2 s.h.
Professional development program for new ENGL:1200 teachers, including three-day pre-semester workshop.

Reading Courses
ENGL:6000 Introduction to Contemporary Theory 3 s.h.
ENGL:6020 Literature as Letters 3 s.h.
ENGL:6060 Modes of Critical Analysis 3 s.h.
Critical practice applicable to English language and literature.
ENGL:6075 Studies in Sentimentalism and Affect Theory 3 s.h.
Readings in sentimentalism as literary genre, rhetorical practice, cultural mode, and psychosocial phenomenon; focus on attendant theories of affect; integration of literature and culture with work on politics of affect in postcolonial and transnational studies, critical race and ethnic studies, American studies, gender and sexuality studies. Same as RHET:6071.
ENGL:6080 New Media Poetics 3 s.h.
ENGL:6090 Topics in Interdisciplinary Studies 3 s.h.
Interdisciplinary approaches to literature and culture.
ENGL:6100 Readings in Medieval Literature and Culture 3 s.h.
ENGL:6110 Medieval Authors 3 s.h.
ENGL:6200 Sixteenth- and Seventeenth-Century Authors 3 s.h.
ENGL:6210 Readings in Sixteenth- and Seventeenth-Century Genres 3 s.h.
ENGL:6220 Shakespeare 3 s.h.
Same as THTR:6403.
ENGL:6300 Restoration and Eighteenth-Century Literature 3 s.h.
ENGL:6400 Romantic Literature 3 s.h.
Same as CL:6323.
ENGL:6500 Victorian Literature 3 s.h.
ENGL:6510 Late Victorian and Edwardian Literature 3 s.h.
ENGL:6601 Readings in American Literature 3 s.h.
American literature of the 18th century.
ENGL:6602 Readings in American Literature II 3 s.h.
Nineteenth-century American literature.
ENGL:6603 Readings in American Literature III 3 s.h.
Twenty-first-century American literature.
ENGL:6610 Studies in African American Literature 3 s.h.
ENGL:6620 Readings in Native American Literatures 3 s.h.
Same as AINS:6620.
ENGL:6630 Readings in Latina/o Literary and Cultural Studies 3 s.h.
Survey of Latina/o literature and criticism to prepare for comprehensive exam; organized by thematic units that stress canonical and emerging research areas in Latina/o literary and cultural studies.
ENGL:6640 Readings in American Literary Genres 3 s.h.
ENGL:6635 Crossing Borders Seminar 2-3 s.h.
ENGL:6670 American Literary Magazines 3 s.h.
Aspects of American literary magazines, from city journals to monthly periodicals, historical moment to marketplace demand.
ENGL:6720 Twentieth-Century Literatures 3 s.h.
Literatures of 20th century; varied topics (e.g., transnational approach, focus on particular theme, genre, or critical perspective).
ENGL:6730 Modernist Studies 3 s.h.
ENGL:6760 Topics in Contemporary Literature 3 s.h.
ENGL:6770 Writing and Revolution 3 s.h.
ENGL:6765 Literature, Culture, and Environment 3 s.h.
Introduction to theories and practices articulating relationship among literature, other cultural production, and environmental issues.
ENGL:6800 Readings in Postcolonial Literature and Theory 3 s.h.
Introduction to central concerns and questions of postcolonial theory: impact of imperial ideologies on formation of racial and ethnic identities; nationalist and pan-nationalist challenges to colonialism; postcolonial revisions of Western history; representations of gender and sexuality; diasporic and transnational cultural production; alternative versions of modernity; relationship between past and contemporary forms of globalization.
ENGL:6900 Doctoral Workshop in English Seminars 2 s.h.
Advanced work in literary history, criticism, and theory; concentration varies by semester.
ENGL:7000 Seminar: Cultural Studies arr.
ENGL:7010 Seminar: Literary Criticism and Theory 3 s.h.
Analysis of issues in current literary criticism and theory and of texts from related fields, such as aesthetics, cultural studies, political science, psychology, and philosophy.
ENGL:7050 Seminar: Performance Theory and Practice 3 s.h.
Foundational and recent work in interdisciplinary field of performance studies; focus on intersections of performance theory and theater and drama studies; production and reception of visual and participatory art, dance, music, and various forms of embodied activity.
ENGL:7100 Seminar: Medieval Literature and Culture arr.
Same as CL:7302.
ENGL:7200 Seminar: Early Modern Literature and Culture arr.
Same as CL:7307.
ENGL:7300 Seminar: Restoration and Eighteenth-Century Literature arr.
ENGL:7400 Seminar: Romantic Literatures arr.
ENGL:7500 Seminar: Victorian Literature arr.
ENGL:7560 Seminar: Walt Whitman 3 s.h.
Walt Whitman's writings and career.
ENGL:7600 Seminar: American Literature and Culture arr.
ENGL:7800 Seminar: Postcolonial Studies 3 s.h.
Same as CL:7054.
Independent Study
ENGL:5990 M.A. Portfolio in Literary Studies arr.
ENGL:5999 M.A. Thesis in Literary Studies arr.
ENGL:7900 Advanced Studies in an Author arr.
ENGL:7910 Advanced Studies in a Literary Period arr.
ENGL:7920 Advanced Studies in a Literary Form arr.
ENGL:7930 Advanced Studies in a Literary Genre arr.
ENGL:7940 Advanced Studies in a Literary Mode arr.
ENGL:7950 Advanced Studies in a Literary Movement arr.
ENGL:7960 Advanced Studies in a Literary Theme arr.
ENGL:7970 Advanced Studies in Literary Criticism arr.
ENGL:7980 Advanced Studies in an Interdisciplinary Subject arr.
ENGL:7990 Special Project for Graduate Students arr.
Professional Training
The following courses offer theoretical and practical training for those who plan to teach.
Upper-Level Undergraduate and Graduate
ENGL:3190 Language and Learning 2-3 s.h.
How language reflects and constructs learners' identities and cultures; readings related to oral and written language, native and second language development, linguistic diversity; discussion of the relationship of language theory to schools of language instruction. English majors may apply this course to the following area and/or period requirement. AREA: Literary Theory and Interdisciplinary Studies. Same as EDTL:3382.
ENGL:3191 Reading and Teaching Adolescent Literature 3 s.h.
Reading and evaluation of literature suitable for junior and senior high school students. English majors may apply this course to the following area and/or period requirement. AREA: Literary Theory and Interdisciplinary Studies. Same as EDTL:3393.
ENGL:4810 Methods: Secondary English 3 s.h.
Organizational techniques, methods, materials for teaching high school English; experience in simulated teaching situations during laboratory sessions, integrated with lectures and discussions. Prerequisites: EDTL:4314. Same as EDTL:4315.

Graduate
ENGL:6104 Literature for Children II 3 s.h.
Current theory, research, and practice in reading and responding to children's literature; genre and topic vary. Same as EDTL:6104.

ENGL:6315 M.A. Seminar: English Education arr.
Significant developments in English education; primary and collateral readings. Same as EDTL:6315.

Nonfiction Writing
Courses CNW:6654 Forms of the Essay, CNW:6650 Readings in Nonfiction, CNW:6610 Essay Writing Workshop, and CNW:6620 Nonfiction Writing Workshop may be repeated. Others may be repeated with consent of the instructor and the director of graduate studies.

Practice in Writing, Graduate
These courses give intensive attention to composition and exposition and to formal and thematic problems, both in the meditative essay and in extended works of nonfiction.

CNW:6610 Essay Writing Workshop 4 s.h.

CNW:6620 Nonfiction Writing Workshop arr.

CNW:6630 Graduate Thesis Workshop 4 s.h.
Thesis work in supportive workshop environment. Prerequisites: CNW:6610 and CNW:6620.

CNW:6654 Forms of the Essay arr.

Theory and Practice of Writing, Graduate
These courses combine theory and analysis of nonfiction writing with practical experimentation in writing. They are intended for people who want to practice, criticize, and/or teach nonfiction writing.

CNW:5375 Teaching in a Writing Center 3 s.h.
Seminar/practicum to prepare graduate students to teach in the University of Iowa Writing Center or similar settings; seminar component on writing and reading processes, tutoring strategies, English-as-a-second-language issues; practicum experience tutoring in the Writing Center. Same as RHET:5375.

CNW:6600 Teaching Nonfiction 3 s.h.
Theories and practices of teaching nonfiction writing; writing workshop approaches, strategies to encourage response and revision, connections between reading and writing, diversity of form, language, and assessment.

CNW:6650 Readings in Nonfiction 3 s.h.

CNW:6656 Approaches to Nonfiction 3 s.h.
Investigation into forms of nonfiction writing.

CNW:6660 Twenty-first-Century Nonfiction arr.

CNW:6670 Overseas Writing Workshop arr.

Independent Study, Graduate
CNW:7900 Special Project in Nonfiction Writing arr.

CNW:7950 Thesis in Nonfiction Writing arr.

Creative Writing
All may be repeated.

Workshops and Seminars, Graduate
Open only to Iowa Writers’ Workshop students or to others with consent of instructor.

CW:5870 Graduate Fiction Writing 3 s.h.
Reading and discussion of published stories and those written by class members, with the aim of improving writing through careful reading and reflection, spirited discussion, and written comments.

CW:5875 Graduate Poetry Writing 3 s.h.
Careful writing and reading of poems by students as well as by established poets; thorough discussion in a supportive context.

CW:7810 Form of Fiction 3 s.h.

CW:7820 Form of Poetry 3 s.h.

CW:7830 Seminar: Problems in Modern Fiction arr.


CW:7870 Fiction Workshop arr.

CW:7875 Poetry Workshop arr.

Independent Study, Graduate
CW:7890 Graduate Project in Creative Writing arr.


Translation Studies, Lower-Level Undergraduate
This course does not fulfill area or period requirements for the English major but may be used to earn elective credit for the major.

ENGL:2810 Undergraduate Translation Workshop 3 s.h.
Translation exercises, discussion of translation works in progress; alternative strategies for translation projects. Requirements: working knowledge of a language other than English. Same as TRNS:2179.
English as a Second Language

Director
- Maureen Burke

Assistant directors
- Jeffrey Knowling, Melissa Meisterheim

Faculty: http://clas.uiowa.edu/esl/people
Web site: http://clas.uiowa.edu/esl/

The University of Iowa offers English as a Second Language (ESL) instruction in three distinct, but related, programs: ESL credit classes, the Iowa Intensive English Program (IIEP), and the Teaching Assistant Preparation in English program (TAPE).

These programs meet the needs of students whose first language is not English. ESL credit classes help students raise their English proficiency so they can complete a degree successfully. IIEP provides intensive instruction for students who must raise their English proficiency to gain admission to a university or college. TAPE helps students improve their oral competence in English so they may assume classroom teaching responsibilities.

Programs

ESL Credit Program

English as a Second Language credit classes bridge the gap between full-time language instruction and full-time academic work, serving students who score a minimum of 80-100 (Internet-based) with no subscore below 17 on the Test of English as a Foreign Language (TOEFL). ESL courses are offered to help students increase their proficiency in four skill areas: reading, writing, speaking, and listening. A course in grammar also is available. Each course offers 3 s.h. of credit, which undergraduates may count as elective credit toward graduation. Courses are taught by ESL lecturers and by teaching assistants pursuing advanced degrees in linguistics.

Acceptable TOEFL scores may change. Check with the Office of Admissions for more information.

Courses taken to meet the College of Liberal Arts and Sciences English proficiency requirement must be completed with a grade of C or higher. If a student earns a grade of C-minus or lower in an ESL course, the course must be retaken in order for the student to fulfill the ESL course requirement. An ESL course must be taken for a letter grade and may not be taken pass/nonpass or satisfactory/unsatisfactory. Students are not allowed to drop ESL courses once the semester begins. A student held for ESL courses may not enroll in a rhetoric course until the ESL requirement is completed.

Visit the ESL Credit Program web site for more information.

Iowa Intensive English Program (IIEP)

The Iowa Intensive English Program (IIEP) primarily serves students on conditional admission and persons who have not yet been admitted to the University and who score below 80 (Internet-based) on the Test of English as a Foreign Language (TOEFL). The program welcomes international students preparing to enter universities and colleges as well as other adults who want to improve their English skills.

IIEP offers intensive English instruction and a cultural, social, and academic orientation to the United States. Instruction emphasizes proficiency in spoken and written English, which is crucial to college and university work. Grammar and the basic language skills of writing, reading, listening comprehension, and speaking are taught each day at all levels, from beginning through advanced. Instruction is by full-time professional ESL instructors.

Each IIEP student receives 20 hours of classroom instruction each week plus individual work in the language laboratory. IIEP students have full access to all University facilities. Field trips and cultural and social experiences are integral parts of the program.

International students admitted to the IIEP receive a certificate of eligibility (Form I-20), which enables them to apply for a student visa at the nearest U.S. consulate or embassy. Application materials are available from the ESL Programs Office and on the Iowa Intensive English Program web site.

Teaching Assistant Preparation in English (TAPE)

The Teaching Assistant Preparation in English program (TAPE) is designed for graduate students whose first language is not English, who need additional work on English communication, and who will hold teaching assistantships while enrolled at the University of Iowa. Only students who need the program and who have sufficient competence in English to profit from it are eligible. TAPE courses are open to graduate students who have been evaluated for TA certification and to others if space is available. Students are taught by full-time professional ESL instructors.

Courses

ESL Credit Program

The following courses are for students whose first language is not English. Courses taken to meet the College of Liberal Arts and Sciences English proficiency requirement may not be taken pass/nonpass. English as a Second Language (ESL) courses may not be taken as satisfactory/unsatisfactory. In order to enroll in ESL courses, undergraduates must score 80 (Internet-based) or higher on the Test of English as a Foreign Language (TOEFL), or the equivalent; graduate students must score 81 (Internet-based) or higher on TOEFL, or the equivalent. Consent of ESL director is required for all courses.

ESL:1000 First-Year Seminar 1 s.h.
Small discussion class taught by a faculty member; topics chosen by instructor; may include outside activities (e.g., films, lectures, performances, readings, visits to research facilities).

ESL:1050 Understanding U.S. Dialects 1 s.h.
Introduction and overview of American English sound system; survey of major U.S. dialects; analysis of social and political issues related to dialects. Same as CLAS:1050.
ESL:1100 Vocabulary for Academic Success 1 s.h.
English word formation; expansion of academic vocabulary for students whose first language is not English; skill development using dictionaries and corpora; word samples drawn from actual use.

ESL:1150 Introduction to the U.S. Constitution 1 s.h.
Origin and analysis of the U.S. Constitution; current constitutional questions and related issues. Same as CLAS:1150.

ESL:1200 Exploring Cultural Values Through the Arts 1 s.h.
Survey of major world cultures; analysis of artistic works; relationship between art and culture and its significance. Same as CLAS:1220.

ESL:1250 Presentation Skills for Academic Success 1 s.h.
Organization and coherence of materials; intelligibility of speech and clarity of expression; active participation and practice in recorded presentations; for students whose first language is not English. Same as CLAS:1250.

ESL:1300 Exploring the Civil Rights Movement Through the Arts 1 s.h.
How art reflects or influences society; history of Civil Rights Movement in mid-20th century and the many ways it has been documented; focus of authors, poets, and musicians on inequality in first half of century; playwrights and filmmakers contribution to change and continued documentation of era after legislation was passed in 1960s; examination of various media, discussions, presentations, writing. Same as CLAS:1350.

ESL:1950 Basic Acting for Language Learners 3 s.h.
Development of theatrical creativity to enhance English language skills through acting games, monologues, and scene work; exercises in concentration, relaxation, communication, imagination, observation, sensory awareness. Same as THTR:1120.

ESL:4100 English as a Second Language: Academic Oral Skills 3 s.h.
Speaking skills for the U.S. academic setting and society; pronunciation, grammar, vocabulary; structured opportunity to develop fluency.

ESL:4130 English as a Second Language: Academic Listening Skills 3 s.h.
Development of listening skills for students whose first language is not English; focus on listening skills necessary for success in a U.S. academic setting; academic lectures, note-taking skills, fast-paced classroom discussions. Requirements: placement test.

ESL:4160 English as a Second Language Grammar 3 s.h.
English structure; troublesome grammar patterns.

ESL:4190 English as a Second Language: Academic Writing 3 s.h.
Complex grammatical constructions, discourse considerations, formal vocabulary use expected of university students; organization styles, types of argumentation, analytic methods used in academic writing. Requirements: undergraduate standing.

ESL:4200 English as a Second Language: Academic Reading Skills 3 s.h.
Increasing reading speed and comprehension of university-level writing and vocabulary; exercises, discussion, and note-taking assignments to develop critical analysis skills.

ESL:6000 English as a Second Language: Writing Skills for Graduate Students 3 s.h.
Discourse considerations; styles of organization, types of argumentation, methods of analysis expected of graduate students. Requirements: TOEFL score of at least 550 (paper-based) or 213 (computer-based) or 81 (Internet-based), and graduate standing.

**Iowa Intensive English Program (IIEP)**

These courses are for students whose first language is not English. The Iowa Intensive English Program primarily serves students on conditional admission, those who have not yet been admitted to the University, and those who score below 80 (Internet-based) on the Test of English as a Foreign Language (TOEFL).

IIEP:0001 Iowa Intensive English Program Orientation 0 s.h.
Acquaint new intensive English students with Iowa City, the University, and the intensive English program; policies and procedures, classroom expectations, and cultural differences. Requirements: enrollment in intensive English program.

IIEP:0115 Iowa Intensive English Communication Skills: Beginning 0 s.h.
Focus on aural comprehension, spoken English, and American attitudes, values, and customs; practice giving and receiving information; learn language more quickly in a comfortable, familiar environment; understand and accept cultural differences; gain positive feelings toward American culture; provides link between classroom and community; interview Americans, class discussions.

IIEP:0135 Iowa Intensive English Reading: Beginning 0 s.h.
Comprehensive reading curriculum designed to help students become effective readers; variety of skills and opportunities to practice many strategies while reading different kinds of written material (i.e., newspapers, magazines, schedules, documents, textbooks, correspondence, literature); emphasis on learning by doing; eclectic teaching approach.

IIEP:0145 Iowa Intensive English Grammar: Beginning 0 s.h.
Correct use of the grammatical structures of English; learning grammar in a systematic and logical way; extensive practice to meet the goal of communicative competence in English.

IIEP:0155 Iowa Intensive English Writing: Beginning 0 s.h.
IIEP:0335 Iowa Intensive English: Communication Skills for Professionals
Listening and speaking skills for international professionals; conversational fluency, language for professional interactions (e.g., discussions and presentations).

IIEP:0215 Iowa Intensive English Communication Skills: Low Intermediate
Focus on aural comprehension, spoken English, and American attitudes, values, and customs; practice giving and receiving information; learn language more quickly in a comfortable, familiar environment; understand and accept cultural differences; gain positive feelings toward American culture; provides link between classroom and community; interview Americans, class discussions.

IIEP:0235 Iowa Intensive English Reading: Low Intermediate
Comprehensive reading curriculum designed to help students become effective readers; variety of skills and opportunities to practice many strategies while reading different kinds of written material (i.e., newspapers, magazines, schedules, documents, textbooks, correspondence, literature); emphasis on learning by doing; eclectic teaching approach.

IIEP:0245 Iowa Intensive English Grammar: Low Intermediate
Correct use of the grammatical structures of English; learning grammar in a systematic and logical way; extensive practice to meet the goal of communicative competence in English.

IIEP:0255 Iowa Intensive English Writing: Low Intermediate
Personal and formal writing; experiment with varied forms of writing, from journal entries and letters to critiques, essay examinations, and short papers that involve use of the library; students read and respond to each other's writing, and in the process become more aware of their own strengths and weaknesses as writers.

IIEP:0315 Iowa Intensive English Communication Skills: Intermediate
Focus on aural comprehension, spoken English, and American attitudes, values, and customs; practice giving and receiving information; learn language more quickly in a comfortable, familiar environment; understand and accept cultural differences; gain positive feelings toward American culture; provides link between classroom and community; interview Americans, class discussions.

IIEP:0335 Iowa Intensive English Reading: Intermediate
Comprehensive reading curriculum designed to help students become effective readers; variety of skills and opportunities to practice many strategies while reading different kinds of written material (i.e., newspapers, magazines, schedules, documents, textbooks, correspondence, literature); emphasis on learning by doing; eclectic teaching approach.

IIEP:0345 Iowa Intensive English Grammar: Intermediate
Correct use of the grammatical structures of English; learning grammar in a systematic and logical way; extensive practice to meet the goal of communicative competence in English.

IIEP:0355 Iowa Intensive English Writing: Intermediate
Personal and formal writing; experiment with varied forms of writing, from journal entries and letters to critiques, essay examinations, and short papers that involve use of the library; students read and respond to each other's writing, and in the process become more aware of their own strengths and weaknesses as writers.

IIEP:0415 Iowa Intensive English Communication Skills: High Intermediate
Spoken English and American attitudes, values, and customs; practice giving and receiving information; learn language more quickly in a comfortable, familiar environment; understand and accept cultural differences; gain positive feelings toward American culture; provides link between classroom and community; interview Americans, class discussions.

IIEP:0435 Iowa Intensive English Reading: Intermediate
Comprehensive reading curriculum designed to help students become effective readers; variety of skills and opportunities to practice many strategies while reading different kinds of written material (i.e., newspapers, magazines, schedules, documents, textbooks, correspondence, literature); emphasis on learning by doing; eclectic teaching approach.

IIEP:0445 Iowa Intensive English Grammar: High Intermediate
Correct use of the grammatical structures of English; learning grammar in a systematic and logical way; extensive practice to meet the goal of communicative competence in English.

IIEP:0455 Iowa Intensive English Writing: High Intermediate
Personal and formal writing; varied forms of writing, from journal entries and letters to critiques, essay examinations, and short papers that involve use of the library; students read and respond to each other's writing, and in the process become more aware of their own strengths and weaknesses as writers.

IIEP:0465 IIE Listening Skills: High Intermediate
Listening skills needed for academic success; note taking and listening skills associated with small group discussions and everyday conversations.
IIIEP:0515 Iowa Intensive English Communication Skills: Advanced 0 s.h.
Spoken English and American attitudes, values, and customs; practice giving and receiving information; learn language more quickly in a comfortable, familiar environment; understand and accept cultural differences; gain positive feelings toward American culture; provides link between classroom and community; interview Americans, class discussions.

IIIEP:0535 Iowa Intensive English Reading: Advanced 0 s.h.
Comprehensive reading curriculum designed to help students become effective readers; variety of skills and opportunities to practice many strategies while reading different kinds of written material (i.e., newspapers, magazines, schedules, documents, textbooks, correspondence, literature); emphasis on learning by doing; eclectic teaching approach.

IIIEP:0545 Iowa Intensive English Grammar: Advanced 0 s.h.
Correct use of the grammatical structures of English; learning grammar in a systematic and logical way; extensive practice to meet the goal of communicative competence in English.

IIIEP:0555 Iowa Intensive English Writing: Advanced 0 s.h.
Personal and formal writing; experiment with varied forms of writing, from journal entries and letters to critiques, essay examinations, and short papers that involve use of the library; students read and respond to each other's writing, and in the process become more aware of their own strengths and weaknesses as writers.

IIIEP:0565 IIE Listening Skills: Advanced 0 s.h.
Listening skills needed for academic success; note taking and listening skills associated with small group discussions and everyday conversations.

Teaching Assistant Preparation in English (TAPE)
The TAPE program is designed for prospective teaching assistants whose first language is not English and who need additional work on English communication skills. Entry to the program is determined by a test.

TAPE:5100 Pronunciation, Fluency Building, and Culture 0 s.h.
Attain greater fluency for teaching by making short presentations and participating in natural interactions about U.S. culture; intensive work on pronunciation to help future teaching assistants attain maximum intelligibility.

TAPE:5200 TA Preparation in English: Fluency Building 0 s.h.
Pronunciation, fluency building, knowledge of the University of Iowa classroom.

TAPE:5220 TA Preparation in English: Pronunciation 0 s.h.
Intensive work toward maximum intelligibility; emphasis on stress, timing, intonation.
Enterprise Leadership

Director, Division of Interdisciplinary Programs
• Helena R. Dettmer

Director, Enterprise Leadership
• David K. Hensley

Undergraduate major: enterprise leadership (B.A.)
The enterprise leadership major provides an option for students who want to focus on entrepreneurial business leadership. The major presents a unique blend of skills, theory, and content, encouraging students to apply their knowledge and skills to entrepreneurial and growing organizations. The program offers a combination of business and liberal arts approaches and allows students to hone their skills in innovation, entrepreneurship, communication, critical thinking, and leadership.

Enterprise Leadership is one of the academic units in the Division of Interdisciplinary Programs (p. 226).

The major in enterprise leadership is offered jointly by the College of Liberal Arts and Sciences and the John Pappajohn Entrepreneurial Center in the Tippie College of Business. The degree is awarded by the College of Liberal Arts and Sciences.

Undergraduate Program of Study
• Major in enterprise leadership (Bachelor of Arts)

Bachelor of Arts
The Bachelor of Arts with a major in enterprise leadership requires a minimum of 120 s.h., including a minimum of 44-47 s.h. of work for the major. Students must maintain a g.p.a. of at least 2.00 in all courses for the major and in all UI courses for the major. They also must complete the College of Liberal Arts and Sciences General Education Program (p. 313).

Students may earn the B.A. in enterprise leadership or the Certificate in Entrepreneurial Management, but not both.

The enterprise leadership major requires the following course work.

FOUNDATION
Foundation courses introduce students to the basic skills, tools, and concepts they will need for the major.

Mathematics
Students can elect to take both courses from Option 1 or one course from Option 2.

Option 1
Both of these:
MATH:1005 College Algebra 4 s.h.
MATH:1010 Trigonometry 3 s.h.

Option 2
Or one of these:
MATH:1020 Elementary Functions 4 s.h.
MATH:1340 Mathematics for Business 4 s.h.

MATH:1380 Calculus and Matrix Algebra for Business 4 s.h.
MATH:1440 Mathematics for the Biological Sciences 4 s.h.
MATH:1460 Calculus for the Biological Sciences 4 s.h.
MATH:1550 Engineering Mathematics I: Single Variable Calculus 4 s.h.
MATH:1850 Calculus I 4 s.h.

Economics
One of these:
ECON:1100 Principles of Microeconomics 4 s.h.
ECON:1200 Principles of Macroeconomics 4 s.h.

Statistics
One of these:
STAT:1020/PSQF:1020 Elementary Statistics and Inference 3 s.h.
STAT:1030 Statistics for Business 4 s.h.
STAT:2020 Probability and Statistics for the Engineering and Physical Sciences 3 s.h.
STAT:3510 Biostatistics 3 s.h.
STAT:4143/PSQF:4143 Introduction to Statistical Methods 3 s.h.

Sociology
This course:
SOC:1010 Introduction to Sociology 3-4 s.h.

ENTREPRENEURSHIP and BUSINESS CORE
The entrepreneurship and business core supports students' understanding of the essence and operation of entrepreneurial enterprises.

Students must earn at least 14-18 s.h. in the following courses.

This course:
ENTR:1350 Foundations in Entrepreneurship 2 s.h.
Or both of these:
ACCT:2100 Introduction to Financial Accounting 3 s.h.
MKTG:3000 Introduction to Marketing Strategy 3 s.h.
All of these:
ENTR:2000 Entrepreneurship and Innovation 3 s.h.
ENTR:3100 Entrepreneurial Finance 3 s.h.
ENTR:3200 Entrepreneurial Marketing 3 s.h.

One of these:
ENTR:4400 Managing the Growth Business 3 s.h.
MGMT:2100 Introduction to Management 3 s.h.

LEADERSHIP
Personal Leadership
These courses help students reflect on the importance of leadership while developing their own leadership style and skills. Students may not apply a course taken for the Social Context of Leadership requirement to the Personal
Leadership requirement; students must take a second course.
At least 3 s.h. from these:
LS:1020 Introduction to Leadership 3 s.h.
LS:1024 Alternative Break Service Learning 1-3 s.h.
LS:2002 Career Leadership Academy Part 1 3 s.h.
LS:3004 Perspectives on Leadership: Principles and Practices 3 s.h.
LS:3010 Global Leadership Initiative 1 s.h.

Social Context of Leadership
Courses introduce students to the impact of social constructs on leadership and organizational effectiveness, such as economic class and cultural and social differences. Students may not apply a course taken for the Personal Leadership requirement to the Social Context of Leadership requirement; students must take a second course.
One of these:
LS:3002 Career Leadership Academy Part 2 3 s.h.
SOC:3610 Organizations and Modern Society 3 s.h.
SOC:3880 Introduction to Network Science 3 s.h.
SOC:4210 Small Group Analysis 3 s.h.
SOC:4225 The Social Psychology of Leadership 3 s.h.
SOC:4230 Sociology of Self-Improvement 3 s.h.

U.S. CULTURAL DIVERSITY
The following courses provide an overview of the complexity of diversity in the United States, and a comprehensive introduction to related issues.
One of these:
AFAM:1020/AMST:1030 Introduction to African American Culture 3 s.h.
AFAM:1030 Introduction to African American Society 3 s.h.
AFAM:2079 Race and Ethnicity in Sport 3 s.h.
AFAM:2265/HIST:2265 Introduction to African American History 3 s.h.
AFAM:3500/RELS:3808 Malcolm X, King, and Human Rights 3 s.h.
AMST:2025 Diversity and American Identities 3 s.h.
ANTH:2165/AINS:2165/AMST:2165 Native Peoples of North America 3 s.h.
GWSS:1001 Introduction to Gender, Women's, and Sexuality Studies 3 s.h.
GWSS:1002 Diversity and Power in the U.S. 3 s.h.
HIST:1010 Issues in Human History: Gender in Historical Perspective 3 s.h.
HIST:1040 Perspectives: Diversity in American History 3 s.h.
SOC:2810 Social Inequality 3 s.h.
SPST:1074/AMST:1074/GWSS:1074 Inequality in American Sport 3 s.h.

COMMUNICATION
The following courses help students develop an understanding of contemporary communication theory and how it is applied.

Communication Theory

At least 3 s.h. from these:
COMM:1112 Interpersonal Communication 3 s.h.
COMM:1117 Theory and Practice of Argument 4 s.h.
COMM:1130 The Art of Persuading Others 3 s.h.
COMM:1170 Communication Theory in Everyday Life 3 s.h.
COMM:1174 Media and Society 3 s.h.
JMC:1100 Media Uses and Effects 3 s.h.
JMC:1200 Media History and Culture 3 s.h.
JMC:1500 Social Media Today 3 s.h.
JMC:3110 Visual Communication 3 s.h.
JMC:3155 Law, Media, and Current Issues 3 s.h.

Applied Communication
At least 3 s.h. from these:
BUS:3800 Business Writing 3 s.h.
CNW:3640 Writing for Business and Industry 3 s.h.
CNW:4642 Team Writing for Business 3 s.h.
CW:3218/INTD:3200 Creative Writing for New Media 3 s.h.
RHET:2055 Persuasion and Advocacy: Developing Women's Voices 3 s.h.
RHET:2065 Persuading Different Audiences 3 s.h.
RHET:2085 Speaking Skills 3 s.h.
RHET:2990 The Art of Marketing Ideas Online 3 s.h.
THTR:2610 Acting for Success 3 s.h.

CAPSTONE EXPERIENCE
Students engage in an entrepreneurial experience and apply their knowledge and skills by planning a business, working for a business, or consulting with a business. Students also may choose an approved experiential learning course from a College of Liberal Arts and Sciences major, such as an internship in another major area, with approval.
One of these:
ENTR:3000 Practicum in Entrepreneurship 3 s.h.
ENTR:4200 Entrepreneurship: Business Consulting 3 s.h.
ENTR:4300 Entrepreneurship: Advanced Business Planning 3 s.h.
ENTR:4900 Academic Internship 3 s.h.

Four-Year Graduation Plan
The following checkpoints list the minimum requirements students must complete by certain semesters in order to stay on the University's Four-Year Graduation Plan.
Before the fifth semester begins: six courses in the major
Before the seventh semester begins: four more courses in the major and at least 90 s.h. earned toward the degree
Before the eighth semester begins: four more courses in the major
During the eighth semester: enrollment in all remaining course work in the major, all remaining General Education courses, and a sufficient number of semester hours to graduate
Environmental Policy and Planning

Chair, Department of Geographical and Sustainability Sciences
• David A. Bennett

Coordinator, Environmental Policy and Planning
• Richard Tyler Priest (History)

Undergraduate major: environmental policy and planning (B.A., B.S.)
Undergraduate minor: environmental policy and planning

Faculty: http://clas.uiowa.edu/geography/people/faculty

The undergraduate programs of study in environmental policy and planning are administered by the Department of Geographical and Sustainability Sciences.

Undergraduate Programs of Study
• Major in environmental policy and planning (Bachelor of Arts, Bachelor of Science)
• Minor in environmental policy and planning

Bachelor of Arts, Bachelor of Science

The Bachelor of Arts with a major in environmental policy and planning requires a minimum of 120 s.h., including at least 40-43 s.h. of work for the major. The Bachelor of Science with a major in environmental policy and planning requires a minimum of 120 s.h., including at least 47-49 s.h. of work for the major. Credit required for the major depends on the student's choice of track. Students must maintain a g.p.a. of at least 2.00 in all courses for the major and in all UI courses for the major. They also must complete the College of Liberal Arts and Sciences General Education Program (p. 313). Transfer students must complete at least 21 s.h. of work for the major in residence at the University of Iowa.

The major in environmental policy and planning concentrates on the social science and policy dimensions of environmental problems, which often are caused by people and may have significant economic effects. Environmental issues are embedded in a complex mesh of economics, politics, culture, and behavior. Planners and policy makers must understand the human dimensions of these factors in order to solve environmental problems.

The environmental policy and planning major is interdisciplinary; it draws courses from geographical and sustainability sciences, anthropology, economics, political science, and other disciplines. Work for the major includes introductory courses, methods courses, intermediate courses, and one of two tracks: the planning track or the policy track.

Students who earn a second major in anthropology, geography, or political science must complete a minimum of 12 s.h. of course work in the second major that they do not also count toward the major in environmental policy and planning. The 12 s.h. of courses must be offered by the second major's administrative home: anthropology (prefix ANTH), geographical and sustainability sciences (prefix GEOG), or political science (prefix POLI). This requirement applies whether students earn the same degree (B.A. or B.S.) with both majors or earn a B.A. with one major and a B.S. with the other. Exception: honors students in environmental policy and planning may count their honors thesis credit toward this 12 s.h. requirement.

Students may not use a course to satisfy more than one requirement of the major.

The major in environmental policy and planning requires the following course work.

Common Requirements (B.A. and B.S.)

INTRODUCTORY COURSES (B.A. AND B.S.)

Both of these:
- ECON:1100 Principles of Microeconomics 4 s.h.
- GEOG:1070 Contemporary Environmental Issues 3 s.h.

One of these:
- ANTH:2261 Human Impacts on the Environment 3 s.h.

One of these:
- EES:1080/ENVS:1080 Introduction to Environmental Science 3-4 s.h.
- GEOG:1020 The Global Environment 3 s.h.

INTERMEDIATE COURSES (B.A. AND B.S.)

This course:

One of these:
- ANTH:3103 Environment and Culture 3 s.h.
- ANTH:3112 Environmentalisms 3 s.h.
- ANTH:4130/RELS:4730 Religion and Environmental Ethics 3 s.h.

One of these:
- POLI:1400 Introduction to Comparative Politics 3 s.h.
- POLI:3111 American Public Policy 3 s.h.
- POLI:3126 Environmental Policy 3 s.h.

METHODS COURSES (B.A.)

This course:
- GEOG:1050 Foundations of GIS 3 s.h.

One of these:
- GEOG:1065 Introduction to Spatial Analysis: Patterns and Processes 3 s.h.
- STAT:1020/PSQF:1020 Elementary Statistics and Inference 3 s.h.
STAT:1030 Statistics for Business 4 s.h.
STAT:2010 Statistical Methods and Computing 3 s.h.
STAT:2020 Probability and Statistics for the Engineering and Physical Sciences 3 s.h.
STAT:3510 Biostatistics 3 s.h.
STAT:4143/PSQF:4143 Introduction to Statistical Methods 3 s.h.

METHODS COURSES (B.S.)
All of these:
- GEOG:1050 Foundations of GIS 3 s.h.
- GEOG:3520 GIS for Environmental Studies 3 s.h.
- STAT:4143/PSQF:4143 Introduction to Statistical Methods 3 s.h.
- STAT:6513/PSQF:6243 Intermediate Statistical Methods 4 s.h.

Tracks (B.A. and B.S.)
Students choose either the planning track or the policy track and complete their track's required course work.

PLANNING TRACK
The planning track requires 12 s.h.; all students complete ECON:3625 and choose three additional courses from the list below. Some of these courses have prerequisites; students must complete all of a course's prerequisites before they may register for the course or seek permission of the instructor.

This course:
- ECON:3625/URP:3135 Environmental and Natural Resource Economics 3 s.h.

Three of these:
- ECON:3640/URP:3134 Regional and Urban Economics 3 s.h.
- GEOG:2410 Environment and Development 3 s.h.
- GEOG:2930 Water Resources 3 s.h.
- GEOG:3340 Ecosystem Services: Human Dependence on Natural Systems 3 s.h.
- GEOG:3350 Urban Ecology 3 s.h.
- GEOG:3400 Iowa Environmental Policy in Practice 3 s.h.
- GEOG:3760/GHS:3760 Hazards and Society 3 s.h.
- GEOG:4770 Environmental Justice 3 s.h.
- URP:3001/GEOG:3920 Planning Livable Cities 3 s.h.
- URP:3350/ECON:3750/GEOG:3940 Transportation Economics 3 s.h.

POLICY TRACK
The policy track requires 13 s.h.; all students complete GEOG:4750 and choose three additional courses from the list below. Some of these courses have prerequisites; students must complete all of a course's prerequisites before they may register for the course.

This course:
- GEOG:4750/URP:4750 Environmental Impact Analysis 4 s.h.

Three of these:
- ANTH:3237/MUSM:3237 Politics of the Archaeological Past 3 s.h.
- ANTH:3240 Cultural Resources Management Archaeology: Practice and Practicalities 3 s.h.
- GEOG:2331 Human Dimensions of Climate 3 s.h.
- GEOG:3400 Iowa Environmental Policy in Practice 3 s.h.
- GEOG:3750 Environmental Quality: Science, Technology, and Policy 3 s.h.
- HIST:3230 American Environmental History 3 s.h.
- POLI:2700 Business, Government, and Society (section EXW) 3 s.h.
- POLI:3100 American State Politics 3 s.h.
- POLI:3102 The U.S. Congress 3 s.h.
- POLI:3110 Local Politics 3 s.h.
- POLI:3111 American Public Policy 3 s.h.
- POLI:3117 Public Administration and Bureaucratic Politics 3 s.h.
- POLI:3118 Interest Groups 3 s.h.
- POLI:3122 Public Choice 3 s.h.
- POLI:3123 State Politics in Iowa (section EXW) 3 s.h.
- POLI:3126 Environmental Policy 3 s.h.
- POLI:3204/SOC:3525 Public Opinion 3 s.h.
- POLI:3404 Public Policy Around the World 3 s.h.
- POLI:3408 Chinese Politics and Society 3 s.h.

Four-Year Graduation Plan
The following checkpoints list the minimum requirements students must complete by certain semesters in order to stay on the University's Four-Year Graduation Plan. (Courses in the major are those required to complete the major; they may be offered by departments other than the major department.)

Bachelor of Arts
Before the third semester begins: one introductory course in the major
Before the fifth semester begins: four courses in the major
Before the seventh semester begins: eight courses in the major and at least 90 s.h. earned toward the degree
Before the eighth semester begins: 11 courses in the major
During the eighth semester: enrollment in all remaining course work in the major, all remaining General Education courses, and a sufficient number of semester hours to graduate

Bachelor of Science
Before the third semester begins: one introductory course in the major
Before the fifth semester begins: five courses in the major
Before the seventh semester begins: eight courses in the major and at least 90 s.h. earned toward the degree
Before the eighth semester begins: 12 courses in the major
During the eighth semester: enrollment in all remaining course work in the major, all remaining General Education courses, and a sufficient number of semester hours to graduate

Honors in the Major

Students majoring in environmental policy and planning have the opportunity to graduate with honors in the major. Honors students in the program must maintain a cumulative University of Iowa g.p.a. of at least 3.33 and a g.p.a. of at least 3.33 in all work for the major. They must be admitted to the major's honors program by the first semester of their senior year or earlier.

Honors students in environmental policy and planning pursue study beyond the typical undergraduate level. In order to graduate with honors in the major, they work under the direction of a faculty member to conduct original research and then prepare and present an honors thesis based on their research. The thesis is reviewed by a committee of at least three faculty members. Students earn credit for the thesis by registering for GEOG:4995 Honors Thesis or POLI:4601 Honors Senior Thesis, or ANTH:4995 Honors Research Seminar and ANTH:4996 Honors Research.

In addition to honors in the major, undergraduate students have a variety of opportunities for honors study and activities through membership in the University of Iowa Honors Program; visit Honors at Iowa to learn about the University's honors program.

Minor

The minor in environmental policy and planning requires a minimum of 18 s.h., including 12 s.h. in University of Iowa courses numbered 3000 or above. Students must maintain a g.p.a. of at least 2.00 in all courses for the minor and in all UI courses for the minor. Course work in the minor may not be taken pass/nonpass. For help in selecting courses, students should contact the department secretary to request an advisor for the minor.

Students may apply a maximum of 6 s.h. toward both the minor in environmental policy and planning and any major or minor in the Departments of Anthropology (p. 55), Geographical and Sustainability Sciences (p. 323), or Political Science (p. 520).

The minor in environmental policy and planning requires three core courses plus three courses from the student's choice of track: the planning track or the policy track. Students may not use a course to satisfy more than one requirement of the minor.

All students complete three core courses.

This course:

GEOG:1070 Contemporary Environmental Issues 3 s.h.

One of these:

ANTH:2261 Human Impacts on the Environment 3 s.h.
ANTH:3103 Environment and Culture 3 s.h.
ANTH:3112 Environmentalisms 3 s.h.
ANTH:4130/RELS:4730 Religion and Environmental Ethics 3 s.h.

One of these:

POLI:1400 Introduction to Comparative Politics 3 s.h.
POLI:3111 American Public Policy 3 s.h.

Students also complete course work in a single track, choosing three courses from either the planning track list or the policy track list below.

Planning track:

GEOG:2410 Environment and Development 3 s.h.
GEOG:2930 Water Resources 3 s.h.
GEOG:3340 Ecosystem Services: Human Dependence on Natural Systems 3 s.h.
GEOG:3350 Urban Ecology 3 s.h.
GEOG:3400 Iowa Environmental Policy in Practice 3 s.h.
GEOG:3760 Hazards and Society 3 s.h.
GEOG:4770 Environmental Justice 3 s.h.
URP:3001/GEOG:3920 Planning Livable Cities 3 s.h.
URP:3134/ECON:3640 Regional and Urban Economics 3 s.h.
URP:3135/ECON:3625 Environmental and Natural Resource Economics 3 s.h.
URP:3350/ECON:3750/GEOG:3940 Transportation Economics 3 s.h.

Policy track:

ANTH:3237/MUSM:3237 Politics of the Archaeological Past 3 s.h.
ANTH:3240 Cultural Resources Management 3 s.h.
ANTH:3331 Human Dimensions of Climate 3 s.h.
GEOG:3400 Iowa Environmental Policy in Practice 3 s.h.
GEOG:3750 Environmental Quality: Science, Technology, and Policy 3 s.h.
GEOG:3760/GHS:3760 Hazards and Society 3 s.h.
GEOG:4750/URP:4750 Environmental Impact Analysis 4 s.h.
HIST:3230 American Environmental History 3 s.h.
OEH:3210/GEOG:3210 Health, Work, and the Environment 3 s.h.
POLI:2700 Business, Government, and Society 3 s.h.
POLI:3100 American State Politics 3 s.h.
POLI:3102 The U.S. Congress 3 s.h.
POLI:3110 Local Politics 3 s.h.
POLI:3111 American Public Policy 3 s.h.
POLI:3117 Public Administration and Bureaucratic Politics 3 s.h.
POLI:3118 Interest Groups 3 s.h.
POLI:3122 Public Choice 3 s.h.
POLI:3123 State Politics in Iowa 3 s.h.
POLI:3204/SOC:3525 Public Opinion 3 s.h.
POLI:3404 Public Policy Around the World 3 s.h.
POLI:3408 Chinese Politics and Society 3 s.h.
Environmental Sciences

Chair, Department of Earth and Environmental Sciences
- Charles "Tom" Foster Jr.

Coordinators, Environmental Sciences
- E. Arthur Bettis III, Andrew A. Forbes

Undergraduate major: environmental sciences (B.A., B.S.)
Undergraduate minor: environmental sciences
Faculty: http://clas.uiowa.edu/envsci/people
Web site: http://clas.uiowa.edu/envsci/

The Environmental Sciences Program provides rigorous interdisciplinary training in the scientific study of the environment. It promotes an understanding of the earth as a complex network of interacting organic and inorganic systems. The program's undergraduate curricula reflect the diversity in the broad field of environmental sciences and draw upon the College of Liberal Arts and Sciences' disciplinary strengths, giving students the opportunity to develop particular areas of expertise.

Hands-on field experience is a crucial component of the program. Students are strongly encouraged to engage in research and study abroad.

The Department of Earth and Environmental Sciences (p. 231) is the administrative home for the Environmental Sciences Program.

Undergraduate Programs of Study
- Major in environmental sciences (Bachelor of Arts, Bachelor of Science)
- Minor in environmental sciences

Bachelor of Science

The Bachelor of Science with a major in environmental sciences requires a minimum of 120 s.h., including 81-85 s.h. of work for the major. Students must maintain a g.p.a. of at least 2.00 in all courses for the major and in all UI courses for the major. They also must complete the College of Liberal Arts and Sciences General Education Program (p. 313); some courses required for the major in environmental sciences may be used to satisfy General Education Program requirements.

Bachelor of Science students majoring in environmental sciences must complete requirements in three areas: the science and mathematics foundation, the environmental sciences foundation, and one of four environmental sciences tracks. Each student is assigned an advisor who specializes in his or her track.

The science and mathematics foundation develops fundamental skills and comprehension in biology, chemistry, geology, mathematics, and statistics. The environmental sciences foundation includes an introductory course in environmental science and additional courses that focus on remote sensing techniques, design and use of geographic information technologies, the geomorphic and environmental processes that shape the earth's surface, and ecological factors that influence the distribution and abundance of organisms.

Each of the program's four tracks focuses on areas of specialization within environmental sciences:
- biosciences (green) track—biological systems and ecological approaches;
- chemical sciences (yellow) track—environmental systems and chemistry;
- geosciences (brown) track—earth materials and surficial geologic processes; and
- hydrosciences (blue) track—hydrogeology and hydrogeologic systems, and water chemistry.

The tracks aim to prepare scientists who can tackle problems that require particular areas of expertise, and to help students develop the skills needed for future employment or graduate study.

The environmental sciences major for the Bachelor of Science requires the following course work.

SCIENCE AND MATHEMATICS FOUNDATION

Students must complete at least 31 s.h. of course work for the science and mathematics foundation, as follows.

All of these:
- BIOL:1411-BIOL:1412 Foundations of Biology - Diversity of Form and Function 8 s.h.
- CHEM:1110 & CHEM:1120 Principles of Chemistry I-II 8 s.h.
- EES:1050 Introduction to Geology 4 s.h.
- MATH:1850 & MATH:1860 Calculus I-II 8 s.h.

One of these:
- CHEM:2021 Basic Measurements 3 s.h.
- STAT:2020 Probability and Statistics for the Engineering and Physical Sciences 3 s.h.
- STAT:3510 Biostatistics 3 s.h.
- STAT:4200 Statistical Methods and Computing 3 s.h.

ENVIRONMENTAL SCIENCES FOUNDATION

Students must complete at least 18-19 s.h. of course work for the environmental sciences foundation, as follows.

All of these:
- ENVS:1080 Introduction to Environmental Science 4 s.h.
- ENVS:2673 Ecology 3 s.h.
- ENVS:3000 Environmental Sciences Seminar (taken twice) 2 s.h.
- ENVS:3020 Earth Surface Processes 3 s.h.
- GEOG:1050 Foundations of GIS 3 s.h.

One of these:
- ENVS:3100 Introduction to Applied Remote Sensing 4 s.h.
- GEOG:3500 Introduction to Environmental Remote Sensing 3 s.h.

Tracks for the Bachelor of Science

Bachelor of Science students majoring in environmental sciences must choose one of the following four tracks. Each track includes required general sciences courses,
track foundation courses, field study courses, and elective courses.

**BIOSCIENCE (GREEN) TRACK**

The environmental biosciences track provides the essential skills for entry-level positions that require a good knowledge of biotic systems and the ability to inventory biologic resources. The track's aim is to produce scientists who are capable of tackling environmental problems in which links and interactions with life sciences are crucial and in which a substantial knowledge of biological/ecological sciences is required. The track also provides a strong foundation for graduate or professional training in disciplines such as ecology, wildlife management, and natural resource management.

Students must complete at least 32 s.h. of environmental biosciences track course work, including one field study course.

**Biosciences Track: General Sciences**

This course:

**CHEM:2210 Organic Chemistry I** 3 s.h.

Students are encouraged to take at least one semester of physics.

**Biosciences Track: Foundation**

Both of these:

**BIOL:2512 Fundamental Genetics** 4 s.h.

**BIOL:3172 Evolution** 4 s.h.

At least 7 s.h. from these:

**BIOL:2346 Vertebrate Zoology** 4 s.h.

**EES:3070 Marine Ecosystems and Conservation** 3 s.h.

**EES:3220 Evolution of the Vertebrates** 3 s.h.

**EES:4440 Phylogenetics and Biodiversity** 3 s.h.

**EES:4700 Evolution of Ecosystems** 3 s.h.

**GEOG:2374 Biogeography** 3 s.h.

**GEOG:2950 Environmental Conservation** 3 s.h.

**IALL:3105 Plant Taxonomy** 4 s.h.

**IALL:3115 Field Mycology** 4 s.h.

**IALL:3117 Ecology and Systematics of Diatoms** 4 s.h.

Other Iowa Lakeside Laboratory courses (prefix IALL) may be approved in consultation with an environmental sciences advisor.

**Biosciences Track: Field Study**

One of these:

**IALL:3103 Aquatic Ecology** 4 s.h.

**IALL:3105 Plant Taxonomy** 4 s.h.

**IALL:3109 Ecology and Systematics of Algae** 4 s.h.

**IALL:3115 Field Mycology** 4 s.h.

**IALL:3117 Ecology and Systematics of Diatoms** 4 s.h.

**IALL:3122 Prairie Ecology** 4 s.h.

**IALL:3126 Ornithology** 4 s.h.

**IALL:3160 Restoration Ecology** 4 s.h.

**IALL:3163 Conservation Biology** 4 s.h.

**Biosciences Track: Electives**

Biosciences track students must complete at least 10 s.h. of elective course work, with at least 6 s.h. from the following lists. They may include an additional field study course to satisfy 4 s.h. of the elective requirement (see “Biosciences Track: Field Study” above).

- **BIOL:3244 Animal Behavior** 3,5 s.h.
- **BIOL:3343 Animal Physiology** 3 s.h.
- **BIOL:3663 Plant Response to the Environment** 3 s.h.
- **BIOL:3676 Evolution Lab** 4 s.h.
- **BIOL:3994 Introduction to Research** 2-3 s.h.
- **BIOL:4273 Population Genetics and Molecular Evolution**

**BIOL:4999 Honors Investigations** arr.

- **CEE:2150 Natural Environmental Systems** 3-4 s.h.
- **CEE:5154 Environmental Microbiology** 3 s.h.
- **CHEM:3110 Analytical Chemistry I** 3 s.h.
- **CHEM:3120 Analytical Chemistry II** 3 s.h.
- **EES:3080 Introduction to Oceanography** 2 s.h.
- **EES:3210 Principles of Paleontology** 3 s.h.
- **GEOG:2310 Introduction to Climatology** 3 s.h.
- **GEOG:3310 Landscape Ecology** 3 s.h.
- **GEOG:3320 Wetlands: Function, Geography, and Management** 3 s.h.
- **GEOG:3350 Urban Ecology** 3 s.h.
- **STAT:6513 Intermediate Statistical Methods** 4 s.h.

May include one of these policy courses:

- **ECON:3625 Environmental and Natural Resource Economics** 3 s.h.
- **EES:1115 Energy and Society: History and Science of Oil** 3 s.h.
- **GEOG:1070 Contemporary Environmental Issues** 3 s.h.
- **GEOG:3340 Ecosystem Services: Human Dependence on Natural Systems** 3 s.h.
- **GEOG:3750 Environmental Quality: Science, Technology, and Policy** 3 s.h.
- **GEOG:3780 U.S. Energy Policy in Global Context** 3 s.h.
- **GEOG:4750 Environmental Impact Analysis** 4 s.h.

**CHEMICAL SCIENCES (YELLOW) TRACK**

The environmental chemical sciences track provides the essential skills for entry-level positions that require a basic understanding of chemical principles and a working knowledge of basic chemical concepts as applied in the environment. The track's aim is to produce scientists who are capable of tackling environmental problems in which chemical and molecular processes play an important role. The track also provides a strong foundation for graduate or professional training in environmental chemistry.

Students must complete at least 35 s.h. of environmental chemical sciences track course work.

**Chemical Sciences Track: General Sciences**

One of these sequences:

- **PHYS:1511-PHYS:1512 College Physics I-II** 8 s.h.
- **PHYS:1611-PHYS:1612 Introductory Physics I-II** 8 s.h.

**Chemical Sciences Track: Foundation**

This sequence:
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM:3110 &amp; CHEM:3120</td>
<td>Analytical Chemistry I-II</td>
<td>6 s.h.</td>
</tr>
</tbody>
</table>

One of these sequences:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM:2210 &amp; CHEM:2220</td>
<td>Organic Chemistry I-I</td>
<td>6 s.h.</td>
</tr>
<tr>
<td>CHEM:2230 &amp; CHEM:2240</td>
<td>Organic Chemistry I for Majors - Organic Chemistry II for Majors</td>
<td>6 s.h.</td>
</tr>
</tbody>
</table>

One of these:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM:4431</td>
<td>Physical Chemistry I</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>CHEM:4432</td>
<td>Physical Chemistry II</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

**Chemical Sciences Track: Lab and Field Study**

Both of these:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM:2410</td>
<td>Organic Chemistry Laboratory</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>CHEM:3430</td>
<td>Analytical Measurements</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

**Chemical Sciences Track: Electives**

Chemical sciences track students must complete at least 6 s.h. of elective courses chosen from the following lists. Students may petition the chemistry department's environmental sciences advisor to use appropriate Department of Chemistry courses numbered 3000 and above as electives.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOC:3110</td>
<td>Biochemistry</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>CEE:4153</td>
<td>Environmental Chemistry Laboratory</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>CEE:4158</td>
<td>Solid and Hazardous Wastes</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>CEE:5152</td>
<td>Environmental Chemistry I</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>CHEM:3250</td>
<td>Inorganic Chemistry</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>CHEM:3994</td>
<td>Undergraduate Research</td>
<td>1-4 s.h.</td>
</tr>
<tr>
<td>CHEM:4873</td>
<td>Atmospheric and Environmental Chemistry</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>EES:4490</td>
<td>Elements of Geochemistry</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>EES:4520</td>
<td>Isotope Geochemistry</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ENVS:3110</td>
<td>Chemical Evolution of the Oceans</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>GEOG:2310</td>
<td>Introduction to Climatology</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>GEOG:2950</td>
<td>Environmental Conservation</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

May include one of these:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM:4431</td>
<td>Physical Chemistry I (if not taken as a foundation course)</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>CHEM:4432</td>
<td>Physical Chemistry II (if not taken as a foundation course)</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

May include one of these policy courses:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECON:3625</td>
<td>Environmental and Natural Resource Economics</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>EES:1115</td>
<td>Energy and Society: History and Science of Oil</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>GEOG:1070</td>
<td>Contemporary Environmental Issues</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>GEOG:2930</td>
<td>Water Resources</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>GEOG:3340</td>
<td>Ecosystem Services: Human Dependence on Natural Systems</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>GEOG:3750</td>
<td>Environmental Quality: Science, Technology, and Policy</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>GEOG:3780</td>
<td>U.S. Energy Policy in Global Context</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>GEOG:4750</td>
<td>Environmental Impact Analysis</td>
<td>4 s.h.</td>
</tr>
</tbody>
</table>

**GEOSCIENCES (BROWN) TRACK**

The environmental geosciences track provides the essential skills for entry-level positions that require a basic understanding of geologic principles and a working knowledge of basic geologic concepts applied in the environmental industry. The track's aim is to produce scientists who are capable of tackling environmental problems in which earth materials and surficial geologic processes are of primary importance. The track also lays a strong foundation for graduate study in environmental geology, engineering geology, and natural hazards assessment.

Students must complete at least 35 s.h. of environmental geosciences track course work.

**Geosciences Track: General Sciences**

This course:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS:1400</td>
<td>Basic Physics</td>
<td>4 s.h.</td>
</tr>
</tbody>
</table>

Students are strongly encouraged to take additional course work in physics.

**Geosciences Track: Foundation**

All of these:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EES:2410</td>
<td>Mineralogy</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>EES:3300</td>
<td>Sedimentary Geology</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>EES:3360</td>
<td>Soil Genesis and Geomorphology</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>EES:3500</td>
<td>Igneous and Metamorphic Petrology</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>EES:3840</td>
<td>Structural Geology</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>EES:4790</td>
<td>Engineering Geology</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

**Geosciences Track: Field Study**

One of these:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CEE:4103</td>
<td>Water Quality</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>EES:2831</td>
<td>Geologic Field Methods</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>EES:4680</td>
<td>Field Methods in Hydrologic Science</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>GEOG:4010</td>
<td>Field Methods in Physical Geography</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

**Geosciences Track: Electives**

Geosciences track students must complete at least 6 s.h. of elective courses chosen from the following lists.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CEE:2150</td>
<td>Natural Environmental Systems</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>CEE:4158</td>
<td>Solid and Hazardous Wastes</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>EES:1290</td>
<td>Energy and the Environment</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>EES:1400</td>
<td>Natural Disasters</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>EES:3080</td>
<td>Introduction to Oceanography</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>EES:3190</td>
<td>Directed Study</td>
<td>arr.</td>
</tr>
<tr>
<td>EES:3300</td>
<td>Sedimentary Geology</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>EES:3380</td>
<td>Fluvial Geomorphology</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>EES:3390</td>
<td>Integrated Watershed Analysis</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>EES:3770</td>
<td>Global Stratigraphy</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>EES:4490</td>
<td>Elements of Geochemistry</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>EES:4520</td>
<td>Isotope Geochemistry</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>EES:4630</td>
<td>Hydrogeology</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>EES:4720</td>
<td>Glacial and Pleistocene Geology</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>EES:4800</td>
<td>Solid Earth Geophysics</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>EES:4870</td>
<td>Applied Geostatistics</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>EES:5380</td>
<td>Process Geomorphology Seminar</td>
<td>1-3 s.h.</td>
</tr>
<tr>
<td>EES:5820</td>
<td>Tectonics</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>
ENVS:3110 Chemical Evolution of the Oceans 3 s.h.
GEOG:2310 Introduction to Climatology 3 s.h.
GEOG:2950 Environmental Conservation 3 s.h.

May include one of these policy courses:
ENVS:1115 Energy and Society: History and Science of Oil 3 s.h.
ECON:3625 Environmental and Natural Resource Economics 3 s.h.
GEOG:1070 Contemporary Environmental Issues 3 s.h.
GEOG:3340 Ecosystem Services: Human Dependence on Natural Systems 3 s.h.
GEOG:3750 Environmental Quality: Science, Technology, and Policy 3 s.h.
GEOG:3760 Hazards and Society 3 s.h.
GEOG:3780 U.S. Energy Policy in Global Context 3 s.h.
GEOG:4750 Environmental Impact Analysis 4 s.h.

HYDROSCIENCES (BLUE) TRACK
The environmental hydrosciences track provides the essential skills for entry-level positions that require a basic understanding of geologic principles and a working knowledge of hydrogeology and hydrogeochemistry. The track's aim is to produce scientists who are capable of tackling environmental problems that emphasize hydrogeologic systems and for which substantial knowledge of hydrogeology and water chemistry are essential. The track also lays a strong foundation for graduate education in hydrogeology, hydrology, geochemistry, and aqueous chemistry.

Students must complete at least 34 s.h. of environmental hydrosciences track course work.

Hydrosciences Track: General Sciences
This sequence:
PHYS:1511-PHYS:1512 College Physics I-II 8 s.h.

Hydrosciences Track: Foundation
Both of these:
EES:4630 Hydrogeology 3 s.h.
EES:4790 Engineering Geology 3 s.h.
One of these:
EES:3380 Fluvial Geomorphology 3 s.h.
EES:3390 Integrated Watershed Analysis 3 s.h.
One of these:
CEE:5152 Environmental Chemistry I 3 s.h.
CEE:4490 Elements of Geochemistry 3 s.h.

Hydrosciences Track: Field Study
This course:
EES:4680 Field Methods in Hydrologic Science 3 s.h.

Hydrosciences Track: Electives
Hydrosciences track students must complete at least 11 s.h. of elective courses chosen from the following lists.

CEE:2150 Natural Environmental Systems 3 s.h.
CEE:3371 Principles of Hydraulics and Hydrology 3 s.h.
CEE:4103 Water Quality 3 s.h.
CEE:4153 Environmental Chemistry Laboratory 3 s.h.
CEE:4378 Hydrometeorology 3 s.h.
CEE:5152 Environmental Chemistry I 3 s.h.
CEE:5154 Environmental Microbiology 3 s.h.
EES:3080 Introduction to Oceanography 2 s.h.
EES:3190 Directed Study arr.
EES:3300 Sedimentary Geology 4 s.h.
EES:4660 Groundwater Modeling 3 s.h.
EES:4800 Solid Earth Geophysics 3 s.h.
EES:4870 Applied Geostatistics 3 s.h.
ENVS:3110 Chemical Evolution of the Oceans 3 s.h.
GEOG:2310 Introduction to Climatology 3 s.h.
GEOG:2950 Environmental Conservation 3 s.h.
GEOG:3320 Wetlands: Function, Geography, and Management 3 s.h.

Bachelor of Arts
The Bachelor of Arts with a major in environmental sciences requires a minimum of 120 s.h., including a minimum of 60 s.h. of work for the major. Students must maintain a g.p.a. of at least 2.00 in all courses for the major and in all UI courses for the major. They also must complete the College of Liberal Arts and Sciences General Education Program (p. 313); some courses required for the major in environmental sciences may be used to satisfy General Education Program requirements.

Bachelor of Arts students majoring in environmental sciences complete requirements in four areas: the science and mathematics foundation, the environmental sciences foundation, environmental sciences field study, and environmental sciences track courses.

The science and mathematics foundation develops fundamental skills and comprehension in biology, chemistry, geology, mathematics, and statistics. The environmental sciences foundation includes an introductory course in environmental science and additional courses that focus on the geomorphic and environmental processes that shape the Earth’s surface, the ecological factors that influence the distribution and abundance of organisms, and a choice of one course that
deals with remote sensing techniques or with the use of geographic information technologies. The environmental sciences field study gives students hands-on experience with methods of analysis and interpretation of natural systems/organisms.

Each of the program's four tracks focuses on areas of specialization within environmental sciences:

- biosciences (green) track—biological systems and ecological approaches;
- chemical sciences (yellow) track—environmental systems and chemistry;
- geosciences (brown) track—earth materials and surficial geologic processes; and
- hydrosciences (blue) track—hydrogeology and hydrogeologic systems, and water chemistry.

Students select one course from each of three of the four tracks in order to develop breadth of understanding and skill in these areas.

The environmental sciences major for the Bachelor of Arts requires the following course work.

**SCIENCE AND MATHEMATICS FOUNDATION**

Students must complete at least 31 s.h. of course work for the sciences and mathematics foundation, as follows.

All of these:

- BIOL:1411-BIOL:1412 Foundations of Biology - Diversity of Form and Function 8 s.h.
- CHEM:1110 Principles of Chemistry I 4 s.h.
- CHEM:1120 Principles of Chemistry II 4 s.h.
- EES:1050 Introduction to Geology 4 s.h.

First semester math and calculus—one of these:

- MATH:1440 Mathematics for the Biological Sciences 4 s.h.
- MATH:1850 Calculus I 4 s.h.

Second semester math and calculus—one of these:

- MATH:1460 Calculus for the Biological Sciences 4 s.h.
- MATH:1860 Calculus II 4 s.h.

One semester of statistics—one of these:

- CHEM:2021 Basic Measurements 3 s.h.
- STAT:2020 Probability and Statistics for the Engineering and Physical Sciences 3 s.h.
- STAT:3510 Biostatistics 3 s.h.
- STAT:4200 Statistical Methods and Computing 3 s.h.

**ENVIRONMENTAL SCIENCES FOUNDATION**

Students must complete at least 17-19 s.h. of course work for the environmental sciences foundation, as follows.

All of these:

- ENVS:3100 Introduction to Applied Remote Sensing 4 s.h.
- GEOG:1050 Foundations of GIS 3 s.h.
- GEOG:3500 Introduction to Environmental Remote Sensing 3 s.h.

One of these:

- ENVS:3115 Energy and Society: History and Science of Oil 3 s.h.
- ANTH:4130 Religion and Environmental Ethics 3 s.h.
- ECON:3625 Environmental and Natural Resource Economics 3 s.h.
- GEOG:1070 Contemporary Environmental Issues 3 s.h.
- GEOG:2910 The Global Economy 3 s.h.
- GEOG:2930 Water Resources 3 s.h.
- GEOG:2950 Environmental Quality: Science, Technology, and Policy 3 s.h.
- GEOG:3760 Hazards and Society 3 s.h.
- GEOG:3780 U.S. Energy Policy in Global Context 3 s.h.
- GEOG:3910 Geographic Perspectives on Development 3 s.h.
- GEOG:4750 Environmental Impact Analysis 4 s.h.
- GEOG:4770 Environmental Justice 3 s.h.

**ENVIRONMENTAL SCIENCES FIELD STUDY**

Students must complete at least one field study course (at least 3 s.h.) from the following list.

- CEE:4103 Water Quality 3 s.h.
- EES:2831 Geologic Field Methods 3 s.h.
- EES:4680 Field Methods in Hydrologic Science 3 s.h.
- GEOG:4010 Field Methods in Physical Geography 3 s.h.
- IALL:3103 Aquatic Ecology 4 s.h.
- IALL:3105 Plant Taxonomy 4 s.h.
- IALL:3117 Ecology and Systematics of Diatoms 4 s.h.
- IALL:3126 Ornithology 4 s.h.
- IALL:3163 Conservation Biology 4 s.h.

**ENVIRONMENTAL SCIENCES TRACK COURSES**

Students must complete 9-12 s.h. (three courses), choosing one course from each of three of the following four lists of environmental sciences track courses.

**Biosciences (Green) Track**

- BIOL:2346 Vertebrate Zoology 4 s.h.
- EES:3070 Marine Ecosystems and Conservation 3 s.h.
- EES:3220 Evolution of the Vertebrates 3 s.h.
- EES:4700 Evolution of Ecosystems 3 s.h.
- EES:4710 Evolution of Plants 3 s.h.
- GEOG:2374 Biogeography 3 s.h.
- IALL:3105 Plant Taxonomy 4 s.h.
- IALL:3117 Ecology and Systematics of Diatoms 4 s.h.
Chemical Sciences (Yellow) Track
BIOC:3110 Biochemistry 3 s.h.
CEE:5152 Environmental Chemistry I 3 s.h.
CHEM:2210 Organic Chemistry I 3 s.h.
CHEM:3110 Analytical Chemistry I 3 s.h.
CHEM:4431 Physical Chemistry I 3 s.h.

Geosciences (Brown) Track
ENVS:1115 Energy and Society: History and Science of Oil 3 s.h.
ENVS:3110 Chemical Evolution of the Oceans 3 s.h.
EES:1290 Energy and the Environment 3 s.h.
EES:1400 Natural Disasters 3 s.h.
EES:2410 Mineralogy 4 s.h.
EES:3300 Sedimentary Geology 4 s.h.
EES:3360 Soil Genesis and Geomorphology 3 s.h.
EES:3380 Fluvial Geomorphology 3 s.h.
EES:3390 Integrated Watershed Analysis 3 s.h.
EES:3840 Structural Geology 4 s.h.
EES:4490 Elements of Geochemistry 3 s.h.
EES:4520 Isotope Geochemistry 3 s.h.
EES:4720 Glacial and Pleistocene Geology 3 s.h.
EES:4790 Engineering Geology 3 s.h.
EES:4800 Solid Earth Geophysics 3 s.h.

Hydrosciences (Blue) Track
CEE:2150 Natural Environmental Systems 3-4 s.h.
CEE:3371 Principles of Hydraulics and Hydrology 3 s.h.
CEE:4103 Water Quality 3 s.h.
CEE:5152 Environmental Chemistry I 3 s.h.
EES:3300 Sedimentary Geology 4 s.h.
EES:3390 Integrated Watershed Analysis 3 s.h.
EES:4490 Elements of Geochemistry 3 s.h.
EES:4630 Hydrogeology 3 s.h.
EES:4790 Engineering Geology 3 s.h.
ENVS:3110 Chemical Evolution of the Oceans 3 s.h.
GEOG:3320 Wetlands: Function, Geography, and Management 3 s.h.

B.A. or B.S. with Teacher Licensure
Environmental sciences majors interested in earning licensure to teach in elementary and/or secondary schools must complete the College of Education's Teacher Education Program (TEP) in addition to the requirements for the major and all requirements for graduation. The TEP requires several College of Education courses and student teaching. Contact the Office of Education Services for details.

Students must satisfy all degree requirements and complete Teacher Education Program licensure before degree conferral.

Students with a strong interest in science teaching may complete a major offered by the Science Education Program. Students choose one of five emphases—biology, chemistry, earth science, physics, or all-science—and earn a Bachelor of Science degree. They may apply for admission to the Teacher Education Program. See Science Education (p. 788) in the Catalog.

Joint B.A./M.A.T. with Science Education Subprogram
B.A. students majoring in environmental sciences who are interested in pursuing a graduate degree in teaching may apply to the joint Bachelor of Arts/Master of Arts in Teaching program offered by the College of Liberal Arts and Sciences and the College of Education. Designed for undergraduates majoring in biology, chemistry, environmental sciences, or physics, the joint program enables students to earn a B.A. and an M.A.T. in five years by beginning to earn graduate credit during their fourth year of undergraduate study and by counting up to 18 s.h. of qualifying credit toward both degrees. For more information, see "Joint B.A./M.A.T. Science Education" in the Teaching and Learning (p. 793) (College of Education) section of the Catalog. Interested students should consult an advisor.

Four-Year Graduation Plan
The Four-Year Graduation Plan is not available for the environmental sciences major. Students work with their advisors on individual graduation plans.

Honors in the Major
Students majoring in environmental sciences have the opportunity to graduate with honors in the major. Honors study in environmental sciences provides students with opportunities to engage in independent research under the guidance of a faculty sponsor chosen from affiliated faculty of the Environmental Sciences Program; the program draws faculty members from the Departments of Anthropology, Biology, Chemistry, Civil and Environmental Engineering, Earth and Environmental Sciences, and Geographical and Sustainability Sciences. Honors students learn how to write the results of their research in the format of a scientific paper, and they have the experience of formally presenting their research as either a short seminar or a poster.

Environmental sciences honors students must be members of the University of Iowa Honors Program, which requires students to maintain a cumulative University of Iowa g.p.a. of at least 3.33 and to fulfill other requirements; visit Honors at Iowa to learn about the University's honors program.

To graduate with honors in environmental sciences, students must fulfill the following requirements:

- complete a B.S. or B.A. with a major in environmental sciences with a g.p.a. of at least 3.33 in all work for the major;
- submit a research proposal to the honors director within two months of the beginning of the semester in which the research is initiated;
- complete a minimum of 6 s.h. of honors research taken over two semesters in BIOL:4999 Honors Investigations, CHEM:3994 Undergraduate Research, EES:3190 Directed Study, or GEOG:3992 Undergraduate Research, depending on the departmental affiliation of the faculty sponsor;
- prepare a thesis presenting the research in the format of a scientific paper with abstract, introduction,
methods, results, discussion, and conclusions; the thesis must include a title page and an abstract formatted according to the specifications of the honors program and must be submitted to the honors director at least one week before the honors program deadline for submission; and

present either a short seminar or a poster about the research at a professional meeting and/or at the University of Iowa.

Beginning in their sophomore or junior year, students should identify potential faculty sponsors by conducting a web-based survey of the research interests of the program’s affiliated faculty. The student should contact potential sponsors to determine who would be willing to sponsor an honors student and what research projects the student might undertake. Students who choose a sponsor whose faculty appointment is not in the College of Liberal Arts and Sciences must choose a cosponsor who does have a faculty appointment in CLAS.

After the student has identified a sponsor and the two have agreed on a project, the sponsor guides the student in the preparation of a research proposal that identifies the background, goals, methods, and significance of the research project. The proposal serves as the foundation of the honors thesis, which the student prepares under the sponsor’s supervision upon completion of the research. Once the thesis is nearing completion or is completed, the student presents a short seminar or a poster detailing the purpose of the research.

For examples of honors projects in environmental sciences, see Undergraduate Program/Honors Projects on the Environmental Sciences Program web site.

Facilities

Depending on their choice of track and/or courses, students majoring in environmental sciences may have the opportunity to take courses at Iowa Lakeside Laboratory, a field station located on West Lake Okoboji, in northwestern Iowa. Run cooperatively by the University of Iowa, Iowa State University, and the University of Northern Iowa, the laboratory offers courses at the undergraduate and graduate levels and provides excellent conditions for summer study in several disciplines. See Iowa Lakeside Laboratory (p. 1212) (University College) in the Catalog or visit the Lakeside Laboratory web site.

Courses

Lower-Level Undergraduate

ENVS:1080 Introduction to Environmental Science 3-4 s.h.
Biological and physical character of the Earth; interaction of humans with the environment, including impacts on ecosystems, climate, natural processes, resources; alternative options, including sustainability, waste management, energy, land reform. GE: Natural Sciences without Lab; Natural Sciences with Lab. Same as EES:1080.

ENVS:1090 Introduction to Environmental Sciences Laboratory 1 s.h.
Laboratory component of EES:1080. Requirements: completion of 3 s.h. in EES:1080 or ENVS:1080; or 3 s.h. of transfer equivalent. GE: Natural Sciences Lab only. Same as EES:1090.

ENVS:1115 Energy and Society: History and Science of Oil 3 s.h.
History, politics, and science of oil and oil industry. GE: Historical Perspectives. Same as EES:1115, GEOG:1115, HIST:1115.

ENVS:2673 Ecology 3-4 s.h.
Adaptations of organisms to their physical and biological environments; organism-environment interactions; population biology; interactions between species; ecology of communities, ecosystems; human impact on ecosystems. Prerequisites: BIOL:1411 and BIOL:1412 and (MATH:1460 or MATH:1550 or MATH:1850). Recommendations: a basic statistics course. Same as BIOL:2673.

Upper-Level Undergraduate and Graduate

ENVS:3000 Environmental Sciences Seminar 0-1 s.h.
Role of sciences in environmental issues and problems; progression from observation to evaluation to design of better questions and experiments. Requirements: environmental sciences major.

Minor

The minor in environmental sciences requires a minimum of 16 s.h. in University of Iowa environmental sciences course work. Students must maintain a g.p.a. of at least 2.00 in all courses for the minor and in all UI courses for the minor. Course work in the minor may not be taken pass/nonpass. The following courses are required.

ENVS:1080/EEES:1080 Introduction to Environmental Science (with lab) 4 s.h.

One environmental sciences foundation course, chosen from these:

ENVS:2673/BIOE:2673 Ecology 3 s.h.
ENVS:3020/EEES:3020 Earth Surface Processes 3 s.h.
ENVS:3100/EEES:3100 Introduction to Applied Remote Sensing 4 s.h.
GEOG:1050 Foundations of GIS 3 s.h.
GEOG:3500 Introduction to Environmental Remote Sensing 3 s.h.

And:

Courses in one of the four environmental sciences tracks, listed under "Bachelor of Science"/"Tracks" early in this Catalog section 8-9 s.h.

Track courses must include one track foundation course (3-4 s.h.) and one track field study course (2-4 s.h.). The tracks are environmental biosciences, environmental chemical sciences, environmental geosciences, and environmental hydrosciences.
**ENVS:3020 Earth Surface Processes** 3 s.h.
Basic geomorphic and environmental processes that shape the earth's surface; emphasis on erosion, transport, deposition by land mass movement (creep, landslides, earth flow), fluid agents (wind, water, ice); methods used to study these processes. Prerequisites: EES:1050 or EES:1080 or ENVS:1080 or GEOG:1020. Same as GEOG:3020, EES:3020.

**ENVS:3095 Field Ecology** 4 s.h.
Analysis and interpretation of patterns and underlying physical and biotic basis for regional and local distributions of plants and animals of eastern Iowa; field observation, sampling, and laboratory analysis; conduction of several field research projects requiring collection, statistical analysis, and interpretation of data in short reports; field-oriented course. Prerequisites: BIOL:1411. Recommendations: advanced undergraduate standing or graduate standing in ecology, environmental sciences, or geoscience.

**ENVS:3100 Introduction to Applied Remote Sensing** 4 s.h.
Remote sensing of the earth's surface from aircraft, satellites; aerial photograph interpretation; remote sensing systems, methods, data analysis using electromagnetic spectrum and digital processing techniques, including visible, infrared, microwave radiation; remote sensing applied to geologic and environmental problems. Prerequisites: EES:1030 or EES:1050 or EES:1080. Same as EES:3100.

**ENVS:3110 Chemical Evolution of the Oceans** 3 s.h.
Investigation of various physico-chemical states oceans have assumed over the past four billion years of Earth history; use of isotope geochemistry as a proxy for ancient ocean conditions; focus on integrated Earth system science, paleoceanographic and paleoclimate modeling, role of chemical stratigraphy in deciphering past climate states of ocean-atmosphere system; relationship between chemical changes in ocean/atmosphere and biological systems of the Earth. Same as EES:3110.

**ENVS:4700 Evolution of Ecosystems** 3 s.h.
Evolutionary history of terrestrial and marine ecosystems; ecological processes from population to ecosystem levels; community assembly, trophic levels, networks, biodiversity dynamics; practical aspects of paleoecological data collection, statistical analysis, modeling. Requirements: two courses in geoscience, biology, environmental sciences, anthropology, or geography. Same as EES:4700.
Ethics and Public Policy

Chair, Department of Philosophy
• David Cunning

Codirectors, Ethics and Public Policy
• Richard Fumerton, Diane Jeske

Undergraduate major: ethics and public policy (B.A.)
Faculty: http://clas.uiowa.edu/ethics/steering-committee
Web site: http://clas.uiowa.edu/ethics/

Ethics and public policy is an interdisciplinary major that presents perspectives on intersecting issues that connect the study of philosophy, economics, law, political science, and sociology. All of these disciplines involve a focus on practical questions concerning how individuals ought to behave and how they ought to regulate the behavior of others.

For example, law exists in order to regulate human behavior, enforce human ideals, and resolve human conflict; most people agree that what society should do depends in part on the actual or potential consequences of its actions; and some of the most important consequences of actions and policies are economic. So it is folly to try to reason clearly about how to rectify injustice without thinking long and hard about the economic impact of one’s plans. But law and social policy affect more than economics; they have a role in constructing the very fabric of society and the nature of the political state in which we want to live.

The major in ethics and public policy provides an ideal background for law school. The study of reasoning, an important component of the major, is useful in preparing for the LSAT, GMAT, and MCAT. The major also prepares students to bring a sophisticated, cross-disciplinary perspective to diverse fields such as government, urban and regional planning, social work, and business.

Students choose one field of specialization for the major and may find it easy to pursue a second major in another of the major’s specialization fields, thus broadening their prospects for choosing graduate schools or beginning professional careers.

The Departments of Economics, Philosophy, Political Science, and Sociology collaborate to present the major in ethics and public policy; the major is administered by the Department of Philosophy.

Undergraduate Program of Study
• Major in ethics and public policy (Bachelor of Arts)

Bachelor of Arts

The Bachelor of Arts in ethics and public policy requires a minimum of 120 s.h., including at least 37 s.h. of work for the major. Students must maintain a g.p.a. of at least 2.00 in all courses for the major and in all UI courses for the major. They also must complete the College of Liberal Arts and Sciences General Education Program.

The curriculum includes foundation courses and the work for one field of specialization.

The major in ethics and public policy requires the following course work.

FOUNDATION COURSES
Foundation courses introduce students to each of the disciplines that participate in the major: philosophy, economics, political science, and sociology. These courses provide students with the basic reasoning skills they will need for advanced study. The foundation courses also help students make an informed selection of their specialization field.

All students are required to take PHIL:1636 Principles of Reasoning: Argument and Debate or PHIL:2603 Introduction to Symbolic Logic in order to gain facility with abstract, formal reasoning.

Some courses may be listed in both a foundation area and a specialization field; students may use a course to fulfill only one requirement for the major.

Philosophy Foundation
Reasoning—one of these:
PHIL:1636 Principles of Reasoning: Argument and Debate 3 s.h.
PHIL:2603 Introduction to Symbolic Logic 3 s.h.

Value theory—one of these:
PHIL:1034 Liberty and the Pursuit of Happiness 3 s.h.
PHIL:1401 Matters of Life and Death 3 s.h.
PHIL:2402 Introduction to Ethics 3 s.h.
PHIL:2432 Introduction to Political Philosophy 3 s.h.
PHIL:2435 Philosophy of Law 3 s.h.
PHIL:2436 The Nature of Evil 3 s.h.

Economics Foundation
This course:
ECON:1100 Principles of Microeconomics 4 s.h.

One of these:
ECON:3650 Policy Analysis 3 s.h.
ECON:3800 Law and Economics 3 s.h.

Political Science Foundation
Foundation—one of these:
POLI:1001 Introduction to Politics 3 s.h.
POLI:1100 Introduction to American Politics 3 s.h.
POLI:1400 Introduction to Comparative Politics 3 s.h.
POLI:3000 Understanding Political Research 3 s.h.

Policy course—one of these:
POLI:1501 Introduction to American Foreign Policy 3 s.h.
POLI:3111 American Public Policy 3 s.h.

Sociology Foundation
Theory—one of these:
SOC:1010 Introduction to Sociology 3-4 s.h.
SOC:1020 Social Problems 3-4 s.h.

Law and sociology—one of these:
SOC:1119 Policy Matters: Perspectives on Contemporary Problems 3 s.h.
SOC:1410 Introduction to Criminology 3 s.h.
SOC:1420 Law and Society 3 s.h.
SOC:1810 Poverty, Inequality, and Public Policy 3 s.h.
SOC:2325 Women, Crime, and Justice 3 s.h.
SOC:2426 Deviance and Control 3 s.h.
SOC:2430 Comparative Criminal Justice Systems 3 s.h.
SOC:2810 Social Inequality 3 s.h.
SOC:3510 Medical Sociology 3 s.h.

FIELDS OF SPECIALIZATION
Students select one of the following fields of specialization: philosophy, economics, political science, or sociology. Students must complete four courses in their field, selected from the appropriate list below. Some courses may be listed in both a foundation area and a specialization field; students may use a course to fulfill only one requirement for the major.

Philosophy
PHIL:2402 Introduction to Ethics 3 s.h.
PHIL:2432 Introduction to Political Philosophy 3 s.h.
PHIL:2435 Philosophy of Law 3 s.h.
PHIL:2436 The Nature of Evil 3 s.h.
PHIL:3342 Multiculturalism and Toleration 3 s.h.
PHIL:3430 Philosophy of Human Rights 3 s.h.
PHIL:3604 Introduction to Philosophy of Science 3 s.h.
PHIL:3633 Philosophy of History 3 s.h.
PHIL:4480 Analytic Ethics 3 s.h.
PHIL:4481 Issues in Philosophy of Law 3 s.h.
PHIL:4482 History of Ethics 3 s.h.
PHIL:4485 Political Philosophy 3 s.h.
PHIL:4696 Philosophy of the Human Sciences 3 s.h.

Economics
ECON:3100 Intermediate Microeconomics 3 s.h.
ECON:3345 Global Economics and Business 3 s.h.
ECON:3610 Development of Local and Regional Economies 3 s.h.
ECON:3620 Economic Growth and Development 3 s.h.
ECON:3625 Environmental and Natural Resource Economics 3 s.h.
ECON:3640 Regional and Urban Economics 3 s.h.
ECON:3650 Policy Analysis 3 s.h.
ECON:3760 Health Economics 3 s.h.
ECON:3790 Antitrust Economics 3 s.h.
ECON:3800 Law and Economics 3 s.h.
ECON:4160 Public Sector Economics 3 s.h.

Political Science
POLI:3101 American Constitutional Law and Politics 3 s.h.
POLI:3102 The U.S. Congress 3 s.h.
POLI:3104 Immigration Politics 3 s.h.
POLI:3105 Minority Representation in American Politics 3 s.h.
POLI:3111 American Public Policy 3 s.h.
POLI:3114 Women and Politics in the United States 3 s.h.
POLI:3116 The Presidency 3 s.h.
POLI:3118 Interest Groups 3 s.h.
POLI:3120 The Criminal Justice System 3 s.h.
POLI:3121 The Judicial Process 3 s.h.
POLI:3122 Public Choice 3 s.h.
POLI:3204 Public Opinion 3 s.h.
POLI:3400 Introduction to Political Economy 3 s.h.
POLI:3401 European Union 3 s.h.
POLI:3404 Public Policy Around the World 3 s.h.
POLI:3406 Ethnic and Religious Conflict in the Muslim World 3 s.h.
POLI:3410 Russian Foreign Policy 3 s.h.
POLI:3501 International Organization and World Order 3 s.h.
POLI:3503 Politics of Terrorism 3 s.h.
POLI:3504 Globalization 3 s.h.
POLI:3505 Causes, Consequences, and Management of Civil War 3 s.h.
POLI:3506 Consequences of War 3 s.h.
POLI:3507 Women and Politics in Global Perspective 3 s.h.
POLI:3508 Race in World Politics 3 s.h.
POLI:3509 International Courts: The Intersection of Law and Politics 3 s.h.
POLI:3510 State Failure in the Developing World 3 s.h.
POLI:3511 International Law 3 s.h.
POLI:3512 International Conflict 3 s.h.
POLI:3513 Politics of International Human Rights Law 3 s.h.
POLI:3516 The Politics of International Economics 3 s.h.
POLI:3517 Global Justice 3 s.h.
POLI:3520 National Security Policy 3 s.h.

Sociology
SOC:3171 Drugs and Society 3 s.h.
SOC:3415 Global Criminology 3 s.h.
SOC:3416 Race, Crime, and Justice 3 s.h.
SOC:3420 Juvenile Delinquency 3 s.h.
SOC:3437 American Crime 3 s.h.
SOC:3450 Criminal Legal System 3 s.h.
SOC:3520 Political Sociology 3 s.h.
SOC:3525 Public Opinion 3 s.h.
SOC:3650 Education, Schools, and Society 3 s.h.
SOC:3840 Community and Urban Sociology 3 s.h.
SOC:3850 Economy and Society 3 s.h.
SOC:4400 Internship in Criminal Justice and Corrections 3 s.h.
SOC:4420 Criminal Punishment 3 s.h.
SOC:4440 Sociology of White-Collar Crime 3 s.h.
SOC:4450 Juvenile Justice: A Sociolegal Perspective 3 s.h.
SOC:4460 Sociology of Law 3 s.h.
SOC:4540 Political Sociology and Social Movements 3 s.h.
Student-Designed Field
In rare circumstances, a student may be given permission to design his or her own specialization field. The student specifies four courses numbered 3000 and above or as considered advanced by the department offering the course. Courses should be interconnected and must suggest a coherent interest. The student-designed field may not duplicate any of the established specialization fields for the major. It also may not include a course that satisfies another requirement for the major.

Students interested in designing their own specialization field should speak with an advisor as early as possible. They must obtain approval from their advisor and from the steering committee of the major in ethics and public policy as soon as possible after they declare the major and before they complete the designated course work.

Four-Year Graduation Plan
The following checkpoints list the minimum requirements students must complete by certain semesters in order to stay on the University's Four-Year Graduation Plan. (Courses in the major are those required to complete the major.)

Before the third semester begins: at least one course in the major
Before the fifth semester begins: at least three courses in the major
Before the seventh semester begins: at least seven courses in the major and at least 90 s.h. earned toward the degree
Before the eighth semester begins: at least nine courses in the major
During the eighth semester: enrollment in all remaining course work in the major, all remaining General Education courses, and a sufficient number of semester hours to graduate

Honors in the Major
Students majoring in ethics and public policy have the opportunity to graduate with honors in the major. Honors students must maintain a g.p.a. of at least 3.50 in work for the major and a cumulative University of Iowa g.p.a. of at least 3.50. In order to graduate with honors in the major, they must complete all work for the major and write an acceptable honors thesis on a significant topic related to the major. Students who write their honors thesis in philosophy should consider preparing for the thesis by taking PHIL:3950 Readings in Philosophy; students who write in economics should consider taking ECON:3999 Honors Seminar; students who write in political science should take POLI:4000 Honors Seminar on the Study of Politics; and students who write in sociology should consider taking SOC:4997 Honors Seminar. Contact the coordinator of the Ethics and Public Policy Program for more information.

In addition to honors in their majors, undergraduate students have a variety of opportunities for honors study and activities through membership in the University of Iowa Honors Program; visit Honors at Iowa to learn about the University's honors program.
Event Planning

Director, School of Journalism and Mass Communication
• David M. Ryfe

Coordinator, Event Planning
• Heather Spangler (Journalism and Mass Communication)

Undergraduate certificate: event planning
Web site: http://clas.uiowa.edu/sjmc/undergraduate-programs/event-planning-certificate

Nearly every kind of organization has a need to create and manage events, from corporations to recreational centers, from hotels to sports teams. The Certificate in Event Planning is designed to serve the career goals of a growing number of students who want to learn about the profession and wish to enter the field. It combines experiential learning with academic course work, preparing students with the practical and intellectual skills necessary to succeed in the industry. The certificate is both interdisciplinary and intercollegiate.

The Departments of Communication Studies (p. 177), Health and Human Physiology (p. 349) (College of Liberal Arts and Sciences), the School of Journalism and Mass Communication (p. 433) (College of Liberal Arts and Sciences) and the Department of Marketing (p. 692) (Tippie College of Business) collaborate to offer the certificate. The Certificate in Event Planning is administered by the School of Journalism and Mass Communication.

Undergraduate Program of Study

• Certificate in Event Planning
Completion of the certificate program will encourage the following student outcomes:

• An understanding of the history and composition of event planning as a professional field;
• A facility with skills necessary to become a professional event planner; and
• An understanding of the relationship between event planning and the wider fields of strategic communication and marketing.

Certificate

The Certificate in Event Planning requires a minimum of 21 s.h. of credit. The certificate program is open to current University of Iowa undergraduate students and to all individuals who hold a bachelor's degree and are not enrolled in a graduate or professional degree program. Students must maintain a g.p.a. of at least 2.00 in work for the certificate.

Some of the certificate courses have prerequisites not included in the certificate requirements. Students should select courses for which they have met the prerequisites.

The Certificate in Event Planning requires the following course work.

CORE COURSES
This course:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
</table>

One of these:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>EVNT:3260/JMC:3260</td>
<td>Event Planning Workshop (consult advisor)</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>SRM:3147</td>
<td>Sport Event Management</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

INTERNSHIP
This course:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>EVNT:2110/JMC:2110</td>
<td>Internship in Event Planning (consult advisor)</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

FOCUSED ELECTIVES

A minimum of 12 s.h. chosen from these (6 s.h. of focused elective course work must be numbered 2000 or above):

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMM:1809</td>
<td>Social Marketing Campaigns</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>COMM:1816</td>
<td>Business and Professional Communication</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>COMM:1818</td>
<td>Leadership and Organizational Procedures</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>COMM:1819</td>
<td>Organizational Leadership</td>
<td>2-3 s.h.</td>
</tr>
<tr>
<td>EVNT:3260/JMC:3260</td>
<td>Event Planning Workshop (if not used to satisfy core requirement)</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>JMC:2200</td>
<td>Communication and Public Relations</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>JMC:3100/FPC:3185</td>
<td>Fundraising and Philanthropy Communication</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>JMC:3181/SPST:3181</td>
<td>The Business of Sport Communication</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>MKTG:3000</td>
<td>Introduction to Marketing Strategy</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>MKTG:4275</td>
<td>Social Media Marketing</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>SRM:2065</td>
<td>The Experience Economy</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>SRM:3147</td>
<td>Sport Event Management (if not used to satisfy core requirement)</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>SRM:3158</td>
<td>Sport and Recreation Promotion</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>SRM:3175</td>
<td>Sales in Sport</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>SRM:3178</td>
<td>Communications and Public Relations in Sports</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>A course in journalism and mass communication business of media course (consult advisor)</td>
<td>3 s.h.</td>
<td></td>
</tr>
</tbody>
</table>

Some of the course in journalism and mass communication in digital event planning (consult advisor)

Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>EVNT:2110/JMC:2110</td>
<td>Internship in Event Planning</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

Internship for Event Planning certificate. Same as JMC:2110.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>EVNT:3250</td>
<td>Foundations of Event Management</td>
<td>3 s.h.</td>
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</tbody>
</table>
Large, major special events, professional meetings, and conferences; development and planning, implementation of events, management and evaluation of events; development requirements of planning events, development strategies, budgeting, staffing requirements, resource allocation, site planning, basic risk management requirements, emergency procedures; event implementation policy and procedures; relationship to elements within development stages; event management and evaluation procedures. Same as SRM:3154, JMC:3250.

**EVNT:3260 Event Planning Workshop**  
3 s.h. 
Hands-on experience in event planning; working with clients, conceptualizing events, lining up small and large details, promoting events via social media and other means, carrying out events, and reflecting on outcomes; meet with event planning professionals; complete individual and group projects. Same as JMC:3260.
French and Italian

**Director, Division of World Languages, Literatures, and Cultures**
- Russell Ganim

**Chair, Department of French and Italian**
- Cinzia Blum

**General Education language coordinators**
- Deborah Contrada (Italian), Roxanna Curto (French), Emilie Destruel-Johnson (French), Dénes Gazsi (Arabic)

**Undergraduate majors:** French (B.A.); Italian (B.A.)

**Undergraduate minors:** Arabic language; French; Italian

**Graduate degrees:** M.A. in French and Francophone world studies; Ph.D. in French and Francophone world studies

**Faculty:** [http://clas.uiowa.edu/dwllc/french-italian/people](http://clas.uiowa.edu/dwllc/french-italian/people)

**Web site:** [http://clas.uiowa.edu/dwllc/french-italian](http://clas.uiowa.edu/dwllc/french-italian)

The Department of French and Italian introduces students to the cultures of France, the Francophone world, Italy, and parts of the Middle East and Africa, providing an understanding of those countries’ historical and contemporary importance. It also facilitates development of proficiency in the French, Italian, Arabic, and Swahili languages and fosters critical appreciation of French, Francophone, Italian, and Arabic literatures and cultures.

Undergraduate students in all majors may satisfy the World Languages requirement of the General Education Program (p. 313) with courses in Arabic, French, Italian, or Swahili; see "Language for General Education" below. The department offers other General Education courses, and entering students may take the department’s First-Year Seminars, one on France, the other on Italy.

The Department of French and Italian is one of the academic units in the Division of World Languages, Literatures, and Cultures (p. 228).

**Undergraduate Programs of Study**
- Major in French (Bachelor of Arts)
- Major in Italian (Bachelor of Arts)
- Minor in Arabic Language
- Minor in French
- Minor in Italian

Students majoring in French or Italian may combine their studies with courses in education to prepare for jobs in high school teaching. They may go on to graduate study in areas such as French, Italian, comparative literature, and other interdisciplinary areas as preparation for college-level teaching. Or they may combine other skills and studies with their major in French or Italian to prepare for challenging career opportunities in international government, business, finance, travel, communications, and other fields where the knowledge of more than one language is essential.

**Bachelor of Arts: French**

The Bachelor of Arts with a major in French requires a minimum of 120 s.h., including 31-35 s.h. of work for the major. Students must maintain a g.p.a. of at least 2.00 in all courses for the major and in all UI courses for the major. They also must complete the College of Liberal Arts and Sciences General Education Program (p. 313).

Students majoring in French complete a set of four foundation courses (10 s.h.) plus the requirements for one of four tracks (21-25 s.h.): the French and Arabic track; the language track; the literature and culture track; or the teaching track.

The major in French requires the following course work.

**FOUNDATION COURSES**
- FREN:3020 Oral Expression in French II 2 s.h.
- FREN:3060 Introduction to Reading and Writing in Literature 3 s.h.
- FREN:3300 French Grammar 3 s.h.
- FREN:4020 Oral Expression in French III 2 s.h.

Students must maintain a g.p.a. of at least 2.00 in all course work for the major, including all University of Iowa course work. Majors must maintain portfolios documenting their progress toward attaining the objectives of the French major.

A maximum of one course taught in English may be counted toward the major; courses taught in English with an additional semester hour in French are exempt from this rule. Students should consult with their advisors before registering.

Transfer credit may be accepted, and students are encouraged to participate in study abroad, but the last two courses in the major ordinarily must be completed at the University of Iowa. Transfer credit is evaluated on an individual basis by the faculty in charge of study abroad.

Students choose an emphasis in one of the following four tracks when they declare the major (or later, but before their fourth year).

**French and Arabic Track**

The French and Arabic track is designed for students interested in combining study of the French and Arabic languages with history, politics, and religions of Middle Eastern cultures and with a major in another area, such as comparative literature, political science, geography, or history.

Requirements for the French and Arabic track include the following seven or eight courses (25 s.h.) in addition to the 10 s.h. of foundation course work in French.

- Three courses in French language, or literature and culture, taught in French, with at least one numbered above 4000 9 s.h.
- Two or three courses in Arabic language beyond first year 10 s.h.
- Two courses on Middle Eastern cultures (prefix FREN), taught in French or English, or approved courses from other departments 6 s.h.

**Language Track**

The language track is designed for students with an interest in language and translation, as well as literature
and culture. Students work in specific areas such as international business, comparative stylistics, and translation.

Requirements for the language track include the following seven courses (21 s.h.) in addition to the 10 s.h. of foundation course work in French.

- FREN:3410 Business French 3 s.h.
- FREN:4890 Techniques of Translation 3 s.h.

Five courses in French language, or literature and culture

All language track students take FREN:3410 and FREN:4890. Of the remaining five courses, only one may be taught in English under the French department (prefix FREN). This restriction does not apply to courses taught in English with an additional semester hour in French. Students must complete at least two courses numbered above 4000, including the required course FREN:4890.

Courses in French stylistics and textual analysis, another language, economics, political science, and/or business are recommended as adjunct electives.

**Literature and Culture Track**

The literature and culture track is designed for students who are interested in combining study of French and Francophone literatures and cultures with a major in another area, such as cinema, communication studies, comparative literature, history, international studies, political science, or journalism.

Requirements for the literature and culture track include the following seven courses (21 s.h.) in addition to the 10 s.h. of foundation course work in French.

Five courses in literature and culture

Two courses in language, or literature and culture

Only one of these courses may be taught in English under the French department (prefix FREN). This restriction does not apply to courses taught in English with an additional semester hour in French. At least two courses must be numbered above 4000.

**Teaching Track**

The teaching track is designed for students who intend to earn licensure to teach in elementary and/or secondary schools. Students must successfully complete the requirements for the major in French with the teaching track and must complete the College of Education's Teacher Education Program (TEP), which requires several education courses and student teaching (see "B.A. with Teacher Licensure" below).

Requirements for the French major's teaching track include the following seven courses (21 s.h.) in addition to the 10 s.h. of foundation course work in French.

Four courses in literature and culture

Three courses from these areas: language, literature and culture, or pedagogy

Only one of these courses may be taught in English under the French department (prefix FREN). This restriction does not apply to courses taught in English with an additional semester hour in French. At least two courses must be numbered above 4000.

**Bachelor of Arts: Italian**

The Bachelor of Arts with a major in Italian requires a minimum of 120 s.h., including 31-32 s.h. of work for the major. Students must maintain a g.p.a. of at least 2.00 in all courses for the major and in all UI courses for the major. They also must complete the College of Liberal Arts and Sciences General Education Program (p. 313).

Students may count a maximum of 9 s.h. (three courses) of approved upper-level transfer or study abroad credit toward the major in Italian, but they must take either ITAL:3305 Advanced Italian or ITAL:3306 Advanced Italian II at the University of Iowa.

The major in Italian requires the following course work.

All of these:

- ITAL:2203 Intermediate Italian 4 s.h.
- ITAL:2204 Intermediate Italian II 4 s.h.
- ITAL:3305 Advanced Italian 4 s.h.
- ITAL:3306 Advanced Italian II 4 s.h.
- ITAL:4633 Medieval Italian Literature 3 s.h.
- ITAL:4634 Medieval and Renaissance Italian Literature 3 s.h.
- ITAL:4667 Modern Italian Fiction 3 s.h.
- ITAL:4668 Modern Italian Poetry and Drama 3 s.h.

And one of these:

- ITAL:2550 Images of Modern Italy 4 s.h.
- An additional course taught in Italian numbered above ITAL:3002 3 s.h.

**B.A. with Teacher Licensure**

French or Italian majors interested in earning licensure to teach in elementary and/or secondary schools must complete the College of Education's Teacher Education Program (TEP) in addition to the requirements of their major and all requirements for graduation. The TEP requires several College of Education courses and student teaching. Contact the Office of Education Services for details.

Students must satisfy all degree requirements and complete Teacher Education Program licensure before degree conferral.

French majors who want to earn teacher licensure should choose the French teaching track. See "Teaching Track" under "Bachelor of Arts: French" above.

Italian majors who want to earn teacher licensure should include an additional 2 s.h. in their work for the major, in either ITAL:2013 Everyday Italian I or ITAL:2014 Everyday Italian II.

Students who plan to use their work toward a minor in either French or Italian as academic background for earning teacher licensure should contact the Office of Education Services about requirements.

**Four-Year Graduation Plan**

The following checkpoints list the minimum requirements students must complete by certain semesters in order to stay on the University's Four-Year Graduation Plan.
B.A.: French
Before the third semester begins: competence in first-year French
Before the fifth semester begins: second-year French (FREN:2002 Intermediate French II)
Before the seventh semester begins: FREN:3020 Oral Expression in French II, two semesters of third-year French, FREN:3060 Introduction to Reading and Writing in Literature, FREN:3300 French Grammar, one or two other courses in the major, and at least 90 s.h. earned toward the degree
Before the eighth semester begins: FREN:4020 Oral Expression in French III and three more courses in the major; for the French language track, FREN:3410 Business French and FREN:4890 Techniques of Translation
During the eighth semester: enrollment in all remaining course work in the major, all remaining General Education courses, and a sufficient number of semester hours to graduate

B.A.: Italian
Before the third semester begins: competence in first-year Italian
Before the fifth semester begins: competence in second-year Italian (ITAL:2204 Intermediate Italian II)
Before the seventh semester begins: four courses in the major numbered above ITAL:3002 and at least 90 s.h. earned toward the degree
Before the eighth semester begins: a total of at least five courses in the major numbered above ITAL:3002
During the eighth semester: enrollment in all remaining course work in the major, all remaining General Education courses, and a sufficient number of semester hours to graduate

Honors in the Major
Students majoring in French or Italian have the opportunity to graduate with honors in the major. Departmental honors students must have a g.p.a. of at least 3.50 for work undertaken in the department.

To graduate with honors in the major, departmental honors students must register for FREN:4995 Honors Research and Thesis (French majors) or ITAL:4998 Honors Research and Thesis (Italian majors) and one honors-designated course numbered above 4000 (French) or 3002 (Italian). They must complete an honors thesis or the equivalent (e.g., translation, comparative stylistics, cultural studies, or research) in French or Italian and must present their work to a faculty committee.

Honors students in French or Italian must be members of the University of Iowa Honors Program, which requires students to maintain a cumulative University of Iowa g.p.a. of at least 3.33 and to fulfill other requirements; visit Honors at Iowa to learn about the University’s honors program.

Minor: Arabic Language
The minor in Arabic language requires a minimum of 15 s.h. earned in Arabic language courses considered intermediate (2000 level) or advanced (3000 level) for the minor, including 12 s.h. taken at the University of Iowa (prefix ARAB). Students must maintain a g.p.a. of at least 2.00 in all courses for the minor and in all UI courses for the minor. Course work in the minor may not be taken pass/nonpass. All courses for the minor must be taught in Arabic. Credit from the University of Iowa Regents Summer Program in Fez, Morocco, earned in courses with prefix ARAB counts as University of Iowa credit for the minor.

Minors: French
The minor in French requires a minimum of 15 s.h., including 12 s.h. earned in courses considered advanced for the minor; 9 s.h. of the 12 s.h. in advanced courses must be taken at the University of Iowa in courses numbered 3000 or above (prefix FREN). Students must maintain a g.p.a. of at least 2.00 in all courses for the minor and in all UI courses for the minor. Course work in the minor may not be taken pass/nonpass. All courses for the minor must be taught in French. Credit from the University Studies Abroad Consortium (USAC) program in Pau, France, and the Study in Montpellier program in France counts as University of Iowa credit for the minor; 6 s.h. earned in other study abroad programs may be counted toward the minor.

Minor: Italian
The minor in Italian requires a minimum of 15 s.h., including 12 s.h. earned in Italian courses (prefix ITAL) numbered above 3002 taken at the University of Iowa. Students must maintain a g.p.a. of at least 2.00 in all courses for the minor and in all UI courses for the minor. Course work in the minor may not be taken pass/nonpass. All courses for the minor must be taught in Italian. Students who wish to count ITAL:2550 Images of Modern Italy toward the minor must enroll in the 4 s.h. section, which includes discussion in Italian.

Language for General Education
The Department of French and Italian provides course sequences in four languages—Arabic, French, Italian, and Swahili—that students in all majors may use to fulfill the World Languages requirement of the College of Liberal Arts and Sciences General Education Program (p. 313). It also offers a variety of language courses that nonmajors may take to satisfy their own educational goals and interests.

ARABIC
The department is the administrative home for Arabic language and culture courses. It offers elementary, intermediate, and advanced Arabic as well as conversational Arabic, for which ARAB:1002 Elementary Modern Standard Arabic II is prerequisite. See "Courses" toward the end of this Catalog section. Students without background in Arabic should begin with ARAB:1001 Elementary Modern Standard Arabic I.

Students who wish to fulfill the General Education Program’s World Languages requirement with Arabic should complete the following course sequence.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ARAB:1001</td>
<td>Elementary Modern Standard Arabic I</td>
<td>5 s.h.</td>
</tr>
<tr>
<td>ARAB:1002</td>
<td>Elementary Modern Standard Arabic II</td>
<td>5 s.h.</td>
</tr>
<tr>
<td>ARAB:2001</td>
<td>Intermediate Modern Standard Arabic I</td>
<td>5 s.h.</td>
</tr>
</tbody>
</table>
Students who have a background in French should take the online World Languages Placement Test, which helps determine the level at which a student should begin French language study at the University of Iowa. Students without background in French should begin with FREN:1001 Elementary French I.

Students who wish to fulfill the General Education Program’s World Languages requirement with French should complete the following sequence.

- FREN:1001 Elementary French I 5 s.h.
- FREN:1002 Elementary French II 5 s.h.
- FREN:2001 Intermediate French I 4 s.h.
- FREN:2002 Intermediate French II 4 s.h.

Those with previous knowledge of French may be able to fulfill the World Languages requirement with this sequence.

- FREN:1010 First-Year French Review 5 s.h.
- FREN:2001 Intermediate French I 4 s.h.
- FREN:2002 Intermediate French II 4 s.h.

**ITALIAN**

Students who have a background in Italian should consult with the department before classes begin to determine the level at which they should begin Italian language study at the University of Iowa. Students without background in Italian should begin with ITAL:1101 Elementary Italian.

Students who wish to fulfill the General Education Program’s World Languages requirement with Italian should complete the following course sequence.

- ITAL:1101 Elementary Italian 5 s.h.
- ITAL:1102 Elementary Italian II 5 s.h.
- ITAL:2203 Intermediate Italian 4 s.h.
- ITAL:2204 Intermediate Italian II 4 s.h.

Those with strong language-learning abilities or background in another Romance language may be able to substitute ITAL:3002 Intensive Elementary Italian for ITAL:1101 Elementary Italian and ITAL:1102 Elementary Italian II and fulfill the World Languages requirement with this sequence.

- ITAL:3002 Intensive Elementary Italian 4, 6 s.h.
- ITAL:2203 Intermediate Italian 4 s.h.
- ITAL:2204 Intermediate Italian II 4 s.h.

**SWAHILI**

The department is the administrative home for Swahili courses. Students may fulfill the General Education Program's World Languages requirement by taking the following four-semester sequence.

- SWAH:3001 Elementary Swahili I 4 s.h.
- SWAH:3002 Elementary Swahili II 4 s.h.
- SWAH:3003 Intermediate Swahili I 4 s.h.
- SWAH:3004 Intermediate Swahili II 4 s.h.

**Study Abroad**

The department participates in several study abroad programs. Some of them are the University Study Abroad Consortium (USAC) French Studies in Pau; University of Minnesota/Paul Valery University Study Abroad in Montpellier; and the Committee on Institutional Cooperation (CIC) Summer French Program in Quebec at the Université de Laval. For information about these and other programs abroad, contact International Programs/Study Abroad and use its Programs by Language search; or see Study Abroad (p. 1233) (University College) in the Catalog.

**Graduate Programs of Study**

- Master of Arts in French and Francophone world studies
- Doctor of Philosophy in French and Francophone world studies

The Master of Arts is offered with an optional French education emphasis.

Faculty expertise enables the department to offer courses in the traditionally recognized historical periods of French literature, various literary genres, and critical theories as well as the Francophone literatures of Canada, North and sub-Saharan Africa, the Caribbean, and the Indian Ocean. The department has particular strengths in interdisciplinary studies, notably in the areas of comparative arts, film studies, history, and second language acquisition.

For more detailed information on graduate degrees in French and Francophone world studies, contact the Department of French and Italian or visit its web site. The department also publishes the Guide for Graduate Students and Assistants.

**Master of Arts**

The Master of Arts program in French and Francophone world studies requires a minimum of 30 s.h. of graduate credit and is offered with or without thesis.

Thesis students may apply up to 6 s.h. of thesis credit toward the 30 s.h. required for the degree. They must take a written and oral examination on their areas of study and must defend their thesis at the time of the comprehensive examination. The thesis prospectus must be accepted one year before a student defends the thesis.

Nonthesis students must pass a written and oral examination. With permission of the director of graduate studies and the department chair, nonthesis students may earn up to 6 s.h. of the required 30 s.h. outside the department or transfer up to 6 s.h. of course work completed at another institution.

All M.A. students must complete the following course work.

All of these:

- FREN:5001 Introduction to Graduate Study 2 s.h.
- At least four graduate-level literature or culture courses numbered 5000 or above

One of these:

- FREN:5020 Comparative Stylistics 3 s.h.
- FREN:5030 Topics in French Linguistics 3 s.h.
M.A. with French Education Emphasis

The Master of Arts program with French education emphasis requires a minimum of 38 s.h. of graduate credit in French. The program is intended primarily for prospective secondary school and community college teachers. Candidates must pass a final written and oral examination.

All French education emphasis students must complete the following course work.

All of these:

FREN:5001 Introduction to Graduate Study 2 s.h.
Courses in French literature numbered 5000 or above (minimum requirement) 9 s.h.

One of these:

FREN:5020 Comparative Stylistics 3 s.h.
FREN:5030 Topics in French Linguistics 3 s.h.

Doctor of Philosophy

The Doctor of Philosophy program in French and Francophone world studies requires a minimum of 72 s.h. of graduate credit, including credit earned for the M.A. The program is designed to prepare students for research, teaching, and professional service normally required of college and university faculty members.

The Ph.D. takes at least three years of graduate study, including at least one year spent in residence at the University of Iowa. Students must pass a comprehensive examination and make a successful oral defense of their dissertation.

Requirements for the Ph.D. include the following.

FREN:5001 Introduction to Graduate Study 2 s.h.
FREN:6140 Critical Theory and Practice 3 s.h.
FREN:7000 Thesis (6 s.h. minimum) 6 s.h.
Three graduate courses in a related field, such as another in literature, history, or philosophy (9 s.h. minimum)

Ph.D. students must possess fifth-semester or equivalent proficiency in a foreign language other than French.

Students working toward the Ph.D. are required to spend at least one year teaching as graduate assistants in the department.

Admission

Applicants to the M.A. program in French and Francophone world studies must have completed the equivalent of the University of Iowa undergraduate major in French. An M.A. in French is prerequisite to admission to the Ph.D. program in French and Francophone world studies. However, successful completion of an M.A. in French does not necessarily qualify a student for doctoral study.

Applicants must meet the admission requirements of the Graduate College; see the Manual of Rules and Regulations of the Graduate College.

Applicants for fall semester whose application materials are received in the department by January 15 have the best chance to be admitted and receive financial aid. They must submit academic transcripts, letters of recommendation from three persons familiar with their past academic work, Graduate Record Examination (GRE) General Test results, a statement of purpose in taking graduate work, and one or more samples of original writing, one of which should be in French, that show their ability to pursue graduate work in French (an honors thesis, term paper, seminar paper, or other course papers).

Financial Support

Teaching assistantships are offered through the department, and University fellowships and scholarships are available through the Graduate College. Contact the Department of French and Italian for details.

Teaching assistants in the department must take FREN:5030 Topics in French Linguistics.

Exchange assistantship agreements with the University of Pau and the University of Poitiers provide one year of residence at these Universities in France for graduate students.

Courses

The department offers courses in French, Italian, Arabic, and Swahili. For a detailed description of courses offered each semester, contact the Department of French and Italian. French courses are conducted in French, and Italian courses are conducted in Italian, unless otherwise indicated. Students may not receive credit for a course that is prerequisite to, or whose equivalent is prerequisite to, a higher-level course they have already completed.

French courses numbered 4000-4999 are intended primarily for advanced undergraduates; graduate students should consult with their advisors before registering for these courses.

Undergraduates may count a maximum of one course taught in English toward requirements for the major in French. This restriction does not apply to courses taught in English with an additional semester hour in French. Students should consult with their advisors before registering.

Students who have had significant experience with French through living or studying abroad should consult with the department before enrolling in any French course.

French, Lower-Level Undergraduate

FREN:1000 First-Year Seminar 1-2 s.h.
Small discussion class taught by a faculty member; topics chosen by instructor; may include outside activities (e.g., films, lectures, performances, readings, visits to research facilities). Taught in English. Requirements: first- or second-semester standing.

FREN:1001 Elementary French I 4-5 s.h.
Introduction to reading, writing, listening, and speaking; for students who have no knowledge of French. GE: World Languages First Level Proficiency.

FREN:1002 Elementary French II 4-5 s.h.
Continuation of FREN:1001; introduction to reading, writing, listening, and speaking. Prerequisites: FREN:1001. GE: World Languages Second Level Proficiency.
**FREN:1005 Texts and Contexts: French-Speaking World**  
3 s.h.  
Development of skills in reading, understanding, and critically engaging with literary texts, and of research skills for informed inquiry; sense of oneself as a situated reader; range of texts reflecting diversity of French and Francophone writers. Taught in English. GE: Interpretation of Literature.

**FREN:1007 Nature/Ecology French Philosophy and Fiction**  
3 s.h.  
Representations of the natural world in literary works from 16th to 20th centuries and in film; readings in English translation. Taught in English. GE: Interpretation of Literature.

**FREN:1010 First-Year French Review**  
4-5 s.h.  
FREN:1001 and FREN:1002 combined in one intensive course. GE: World Languages Second Level Proficiency.

**FREN:1040 French for Travelers**  
2 s.h.  
Basic language skills for tourists; for students with no previous French.

**FREN:1510 Cultural Misunderstandings: France and U.S.A.**  
3 s.h.  
Key moments in the history of relations between the United States and France, from similarities underlying democratic principles to recent divergent worldviews. Taught in English. GE: International and Global Issues.

**FREN:2001 Intermediate French I**  
4 s.h.  
Prerequisites: FREN:1002 or FREN:1010. GE: World Languages Second Level Proficiency.

**FREN:2002 Intermediate French II**  
4 s.h.  

**FREN:2007 French Phonetics**  
3 s.h.  
Introduction to French phonetics; sounds of French in isolation and in context to improve pronunciation; audio exercises that emphasize sounds (nasal vowels, [u]-[y] contrast) and prosodic features (intonation, syllabification, liaison); written materials in French. Prerequisites: FREN:1001 and (FREN:1002 or FREN:1010).

**FREN:2020 Oral Expression in French I**  
2 s.h.  
Prerequisites: FREN:1002 or FREN:1010.

**French, Upper-Level Undergraduate and Graduate**

**FREN:3000 Third-Year French**  
3 s.h.  
Development of reading skills in French; composition and review of basic grammar structures. Prerequisites: FREN:2002.

**FREN:3020 Oral Expression in French II**  
2 s.h.  

**FREN:3030 Paris and the Art of Urban Life**  
3 s.h.  
City of Paris examined in varied historical, artistic, cultural contexts; interdisciplinary. Same as ARTH:3020.

**FREN:3060 Introduction to Reading and Writing in Literature**  
3 s.h.  
Development of analytical, organizational skills for interpretation of literature; readings in prose, poetry, drama, criticism; emphasis on reading and essay writing. Prerequisites: FREN:2002.

**FREN:3110 French Civilization**  
3 s.h.  
Institutions and events from the beginning of French civilization to the Renaissance. Prerequisites: FREN:3060. GE: Historical Perspectives.

**FREN:3120 French Civilization**  
3 s.h.  
From Renaissance to Revolution. Prerequisites: FREN:3060. GE: Historical Perspectives.

**FREN:3130 French-Speaking Cultures**  
3 s.h.  
Features of cultures in which French is spoken; North Africa, Subsaharan Africa, the Indian Ocean, Indochina, the Caribbean, Canada, Europe; cinema, music, literature, the arts, the media. Prerequisites: FREN:3060.

**FREN:3160 Study Abroad: Culture**  
3 s.h.  
Geography, history, architecture, painting, music of France; readings, slides, video and audio cassettes, visits to sites of cultural significance. Prerequisites: FREN:2002.

**FREN:3190 Psycholinguistic Aspects of Bilingualism**  
3-4 s.h.  
Interaction of two languages in a bilingual in terms of sound system, words, and grammar; different meanings of bilingualism, how bilingualism and multilingualism can change across lifespan. Requirements: linguistics or language acquisition course. Same as SPAN:3190.

**FREN:3215 Studies in Medieval and Early Modern France**  
3 s.h.  
Introduction to the study of Medieval and Early Modern France (Middle Ages to the Revolution of 1789); focus on aspects of history, literature, politics, and culture of the period; emphasis on interdisciplinary investigation of diverse cultural forms. Prerequisites: FREN:3060.

**FREN:3225 Studies in Modern France**  
3 s.h.  
Introduction to the study of Modern France (1815-present); history, literature, politics, and culture of the period; emphasis on interdisciplinary investigation of diverse cultural forms. Prerequisites: FREN:3060.

**FREN:3250 Topics in French Studies I**  
3 s.h.  
Prerequisites: FREN:3060.

**FREN:3300 French Grammar**  
3 s.h.  
Study of word forms, sentence patterns for more accurate use of French. Prerequisites: FREN:2002.

**FREN:3360 Study Abroad: Language**  
3 s.h.  
Written and spoken French; listening, speaking, reading, writing in cultural contexts. Prerequisites: FREN:2002.

**FREN:3410 Business French**  
3 s.h.  
Language of economics and business; practice in business correspondence and communication, active use of business vocabulary. Offered fall semesters. Prerequisites: FREN:3300.
FREN:3540 Gender and Sexuality in French Cinema
Cultural, historical, semiotic approach to studying construction of gender identity and sexual codes in French cinema from 1920s to present. Taught in English. Prerequisites: FREN:3060 or CINE:1601 or CINE:1602 or GWSS:1001. Same as GWSS:3540, CINE:3647.

FREN:4015 Francophone Cinema
Introduction to the cinema of French-speaking countries outside of France; history, production, distribution; issues of colonialism, postcolonial identities, gender, social realism, diasporas, popular culture. Taught in French. Prerequisites: FREN:3060.

FREN:4026 French Women Writers
Survey of 20th-century French women writers with emphasis on Simone de Beauvoir; broad range of literary works by writers including de Beauvoir, Colette, Marguerite Yourcenar, Nathalie Sarraute, Marguerite Duras, Sarah Kofman, Annie Ernaux, Christiane Rachefort; French feminist theorists who followed in de Beauvoir’s footsteps, including Helene Cixous, Julia Kristeva, Luce Irigaray. Prerequisites: FREN:3060 or GWSS:1001. Same as GWSS:4026.

FREN:4100 French Cinema
Taught in English. GE: Literary, Visual, and Performing Arts. Same as CINE:4100.

FREN:4110 Francophone Literature of the African Diaspora
Lectures and cultures of Francophone West Africa, the Caribbean, and the Indian Ocean analyzed through fiction, essays, films, visual arts. Prerequisites: FREN:3060 and FREN:3300.

FREN:4310 Atelier d'Ecriture en Francais/
Creative Writing in French
Development of intellectual and affective techniques necessary for writing creatively; exploration of cognitive and psychological barriers to producing literature in a language other than one’s own; brief portraits, journals, dialogues.

FREN:4433 France Under Nazi Occupation, 1940-1944
Political, economic, social, and cultural conditions that prevailed following the Nazi conquest of France in 1940; examination of this period of upheaval through work of prominent historians of France; representations of occupied France in literary works, documentary, and fictional films produced during the war and in the politically fraught culture of collective memorialization that formed in aftermath of this national trauma. Same as HIST:4433.

FREN:4466 France and Algeria from Pirates to Terrorism
Long, complex history of relationship between France and Algeria since 18th century; early modern conflicts over Barbary piracy, French invasion, and colonization of Algeria in 19th century; brutal Algerian War of Independence, postcolonial migration, and ongoing war of memory over shared Franco-Algerian history of colonization and decolonization. Taught in English. Same as HIST:4466.

FREN:5000 Teaching and Learning Languages
Readings in pedagogical theory and practice, second language acquisition; experience designing activities for teaching and assessment with critiques based on current theories and approaches; development of reflective practices toward one’s language teaching. Same as WLLC:5000, SLA:5000, SPAN:5000, GRMN:5001.
FREN:5030 Topics in French Linguistics 3 s.h.
Basics of French language; main areas of linguistics—phonetics and phonology, morphology, semantics, pragmatics, and syntax; introduction to sociolinguistics and language variation; concepts and basic tools needed for linguistic analysis of language; brief historical overview; “standard” variety of French and its role in linguistic study of language; exploration of subdisciplines with practical exercises that implement principles presented in class and readings.

FREN:6010 The Renaissance in France 3 s.h.
FREN:6020 Studies in the Seventeenth Century 3 s.h.
FREN:6050 Realism and Naturalism 3 s.h.
Representative novels of Realist and Naturalist movements, in historical, literary, and theoretical context.
FREN:6080 Modern French Novel 3 s.h.
FREN:6090 French History in/and Cinema 3 s.h.
French cinema's role in constructing 20th-century discourse on national and cultural identity and in shaping modern France's historical imagination.

FREN:6120 Literature of Immigration in France 3 s.h.
Contemporary literature written by non-European immigrants in France; issues of identity, institutional power, exclusion, displacement; rhetorical strategies used in these decentered texts to open a discursive/subversive space in canonical literary discourse.

FREN:6130 Studies in Francophone Literatures 3 s.h.
Historical, anthropological, comparative approach to Francophone literatures and cultures; Afro/Indo-Caribbean religions in literatures, theoretical and critical discourses, women's literature and cinema. Same as GWSS:6130.

FREN:6140 Critical Theory and Practice 3 s.h.
FREN:6142 Crossing Borders Seminar 2-3 s.h.

FREN:6750 Topics in French Studies 3 s.h.
FREN:6755 French Literature of the 20th/21st Centuries 3 s.h.
Advanced survey of French literature 1900-present in areas of novel, theater, poetry, and essay.

FREN:6901 Second Language Acquisition Research and Theory 3 s.h.
Theories regarding success and failure in acquisition of second or subsequent languages; research, issues. Same as ASIA:6901, SLA:6901, SPAN:6901, JPNS:6901.

FREN:6920 Multimedia and Second Language Acquisition 3 s.h.
Foreign language multimedia in context of current second language acquisition theories and research; readings on interactivity, interface design, feedback, learner control; acquisition of vocabulary, grammar, and culture. Requirements: foreign language teaching methodology course. Same as SLA:6920, GRMN:6920, SPAN:6920.

FREN:6950 Topics in Second Language Acquisition: Speaking 3 s.h.
Theory, pedagogy, research, and assessment in second language speaking. Same as SLA:6950, SPAN:6950.

FREN:7000 Thesis arr.
FREN:7990 Independent Study arr.

Italian, Lower-Level Undergraduate

ITAL:1000 First-Year Seminar 1 s.h.
Small discussion class taught by a faculty member; topics chosen by instructor; may include outside activities (e.g., films, lectures, performances, readings, visits to research facilities). Taught in English. Requirements: first- or second-semester standing.

ITAL:1030 Italian for Travelers 2 s.h.
Basic language skills for tourists; for students with no previous Italian.

ITAL:1050 Italy Live 3 s.h.
Introduction to Italian language and culture designed for students whose first contact with the language is in Italy; offered through Consortium of Universities for International Studies study abroad program (CUIS/CIMBA) in Paderno del Grappa, Italy.

ITAL:1101 Elementary Italian 5 s.h.
For students who have no knowledge of Italian. Offered fall semesters. GE: World Languages First Level Proficiency.

ITAL:1102 Elementary Italian II 5 s.h.
Offered spring semesters. Prerequisites: ITAL:1101. GE: World Languages Second Level Proficiency.

ITAL:1540 Topics in Italian 2 s.h.
Topics in Italian language, culture, and literature; may include Italian cinema, studies of specific Italian cities, thematic approaches to Italian studies.

ITAL:2013 Everyday Italian I 2 s.h.
Offered fall semesters. Prerequisites: ITAL:1102 or ITAL:3002.

ITAL:2014 Everyday Italian II 2 s.h.
Offered spring semesters. Prerequisites: ITAL:1102 or ITAL:3002.

ITAL:2203 Intermediate Italian 4 s.h.
Offered fall semesters. Prerequisites: ITAL:1102. GE: World Languages Second Level Proficiency.
ITAL:2204 Intermediate Italian II 4 s.h.
Offered spring semesters. Prerequisites: ITAL:2203. GE: World Languages Fourth Level Proficiency.

ITAL:2550 Images of Modern Italy 3-4 s.h.
Survey of Italy’s history since Unification; diverse aspects of modern Italian culture and society through visual and textural materials. Requirements: for students earning 4 s.h. — ITAL:2204. GE: Historical Perspectives; Values, Society, and Diversity.

ITAL:2990 Independent Study arr.

Italian, Upper-Level Undergraduate and Graduate

ITAL:3002 Intensive Elementary Italian 4,6 s.h.
Offered spring semesters. Requirements: two years of another foreign language. GE: World Languages Second Level Proficiency.

ITAL:3305 Advanced Italian 3-4 s.h.
Offered fall semesters. Prerequisites: ITAL:2204.

ITAL:3306 Advanced Italian II 3-4 s.h.
Offered spring semesters. Prerequisites: ITAL:3305.

ITAL:4350 Studies in Italian Language 3 s.h.
Prerequisites: ITAL:3306.

ITAL:4633 Medieval Italian Literature 3 s.h.
Prerequisites: ITAL:2204.

ITAL:4634 Medieval and Renaissance Italian Literature
Prerequisites: ITAL:2204.

ITAL:4667 Modern Italian Fiction 3 s.h.
Prerequisites: ITAL:2204.

ITAL:4668 Modern Italian Poetry and Drama
Continuation of ITAL:4667, but may be taken as independent unit. Prerequisites: ITAL:2204.

ITAL:4990 Independent Study arr.

ITAL:4998 Honors Research and Thesis 3 s.h.

Arabic, Lower-Level Undergraduate

ARAB:1001 Elementary Modern Standard Arabic I
Speaking, listening, reading, and writing skills. GE: World Languages First Level Proficiency.

ARAB:1002 Elementary Modern Standard Arabic II

ARAB:1020 Study Abroad: Language (Elementary)

Modern Standard Arabic (MSA); speaking, reading, listening and writing skills. Requirements: non-native speaker of Arabic; heritage speaker of Arabic should contact the course supervisor for appropriate placement.

ARAB:1050 Topics in Middle East/Muslim World Studies I
Contemporary cultural questions and debates in the Muslim and Arabic-speaking world. Taught in English.

ARAB:2001 Intermediate Modern Standard Arabic I
Communication in speaking and writing; cultural topics. Prerequisites: ARAB:1002. GE: World Languages Second Level Proficiency.

ARAB:2002 Intermediate Modern Standard Arabic II

ARAB:2020 Study Abroad: Language (Intermediate)
Modern Standard Arabic (MSA); speaking, reading, listening and writing. Requirements: non-native speaker of Arabic; heritage speaker of Arabic should contact the course supervisor for appropriate placement. Recommendations: one year of Arabic study.

ARAB:2025 Study Abroad: Culture and Society
Introduction to Moroccan culture and society through direct observation and interaction; intensive orientation, cultural exchange activities, learning excursions outside Fez, homestay with a Moroccan family.

ARAB:2030 Formal Spoken Arabic
2 s.h.
Conversational practice with a native speaker; for students who have completed fourth-semester Arabic. Prerequisites: ARAB:1002 or ARAB:2002. Requirements: non-native or non-heritage speaker of Arabic.

ARAB:2050 Topics in Middle East/Muslim World Studies II
Contemporary cultural questions and debates in the Muslim and Arabic-speaking world. Taught in English.

Arabic, Upper-Level Undergraduate and Graduate

ARAB:3005 Culture and Resistance: The Modern Middle East
Introduction to literature, cinema, and music of the Modern Middle East; how artists from Arab world, Turkey, and Iran explore their political terrain; how they depict issues of gender and sexuality; impact of the Arab Spring: exploration of art as expression and resistance; intersection between cultural and political; short stories, graphic novels, film, music, and visual arts. Taught in English.

ARAB:3011 Advanced Modern Standard Arabic I
3 s.h.
Advanced Arabic grammar and syntax, composition writing, formal conversation (similar to conversations on Arabic mass media); classical Arabic texts, other materials written for persons whose first or official language is Arabic. Prerequisites: ARAB:2002.

**ARAB:3012 Advanced Modern Standard Arabic II**
Continuation of ARAB:3011; advanced Arabic grammar and syntax, composition writing, formal conversation (similar to conversations on Arabic mass media); classical Arabic texts, other materials written for persons whose first or official language is Arabic. Prerequisites: ARAB:3011.

**ARAB:3020 Study Abroad: Language (Advanced)**
Modern Standard Arabic (MSA); speaking, reading, listening, and writing. Requirements: non-native speaker of Arabic; heritage speaker of Arabic should contact the course supervisor for appropriate placement. Recommendations: two or more years of Arabic language.

**ARAB:3050 Arab Culture Through Dialects**
Communication in dialectal Arabic, Arabic dialectology, cultural topics, music and film in dialectal Arabic. Prerequisites: ARAB:1001. Requirements: non-native or non-heritage speaker of Arabic.

**ARAB:4512 Topics in Global and Transnational Culture**
In-depth look at a theme in cultural expression arising from interactions between countries and regions; focus on contemporary or historical issues; use of materials ranging from literature and the visual arts to music, mass media, and more; general processes through which cultures are formed in mutual and uneven relationships; research project. Recommendations: completion of an international and global issues GE course. Same as WLLC:4512, GRMN:4512.

**ARAB:4990 Independent Study**
Material not covered in regularly offered courses; independent study guided by an instructor.

**Swahili, Upper-Level Undergraduate and Graduate**

**SWAH:3001 Elementary Swahili I**
GE: World Languages First Level Proficiency.

**SWAH:3002 Elementary Swahili II**
Prerequisites: SWAH:3001. GE: World Languages Second Level Proficiency.

**SWAH:3003 Intermediate Swahili I**
GE: World Languages Second Level Proficiency.

**SWAH:3004 Intermediate Swahili II**
GE: World Languages Fourth Level Proficiency.

**SWAH:3006 Conversational Swahili**
Extensive practice in production and comprehension of spoken Swahili. Corequisites: SWAH:3002 or SWAH:3004.

**SWAH:4000 Identity, Trade, and Diaspora**
Identity of Swahili people on East African coast; trade networks and diaspora in Arabia and Persian Gulf over the centuries; Swahili civilization marked by urbanity, literacy, Islam, and cosmopolitanism; how scholars' views have changed (scholars originally could not reconcile their conception of Africa, the Dark Continent, with characteristics of this sophisticated culture). Same as HIST:4728.
Fundraising and Philanthropy Communication

Director, School of Journalism and Mass Communication

• David M. Ryfe

Coordinator, Fundraising and Philanthropy Communication

• Ann Haugland

Undergraduate certificate: fundraising and philanthropy communication
Web site: http://clas.uiowa.edu/sjmc/philanthropy-certificate

The Certificate in Fundraising and Philanthropy Communication is administered by the School of Journalism and Mass Communication (p. 433).

Undergraduate Program of Study

• Certificate in Fundraising and Philanthropy Communication

The certificate program prepares students for careers in the growing field of development, institutional advancement, fundraising, donor relations, and public relations for nonprofit organizations.

Certificate

The Certificate in Fundraising and Philanthropy Communication requires a minimum of 18 s.h. The certificate program is open to current University of Iowa undergraduate students and to all individuals who hold a bachelor's degree and are not enrolled in a graduate or professional degree program. Students must maintain a g.p.a. of at least 2.00 in work for the certificate.

The certificate consists of core courses that provide a foundation in fundraising, writing, media production, and management of nonprofit organizations. Students also choose electives from a range of courses to support their interests in a particular area of nonprofit work. Most students will complete all four core courses. Some students may choose to take three core courses plus an additional elective.

Students majoring in journalism and mass communication may count toward the certificate a maximum of 7 s.h. of journalism credit (prefix JMC) that they earn for the major. The certificate cannot be used to satisfy the major's concentration area requirement. Students in other majors should consult with their advisors to learn whether they may count certificate course work toward their majors.

When certificate students register for fundraising and philanthropy communication courses (prefix FPC) that are cross-listed with journalism and mass communication (prefix JMC), they should register for the FPC course number.

The Certificate in Fundraising and Philanthropy Communication requires the following course work.

CORE COURSES

Students earn a minimum of 9 s.h. in core courses, selecting from the following two sets of courses.

FPC:3100 Fundraising Fundamentals 3 s.h.
MGMT:3500 Nonprofit Organizational Effectiveness I 3 s.h.

Must include at least one of these courses, with both recommended.

FPC:3185 Fundraising and Philanthropy Communication 3 s.h.
FPC:3633 Philanthropy Communication in a Digital World 4 s.h.

ELECTIVES AND OPTIONAL INTERNSHIP

Students complete a minimum of 5 s.h. in approved elective courses chosen from those listed below. Credit earned for the optional internship counts as elective credit.

The certificate program coordinator may add special topics courses that fulfill certificate requirements to this list.

Some of these courses have prerequisites, which students must complete before they register for the course. Some require special permission.

Electives

ARTH:1080 Writing About the Visual Arts 3 s.h.
ARTH:3080 Marketing, Promoting, Politicking Contemporary Public Art 3 s.h.
ARTS:3400 Grant Writing in the Arts 3 s.h.
COMM:1130 The Art of Persuading Others 3 s.h.
DPA:3510 Introduction to Arts Management 3 s.h.
EALL:4130 Introduction to Grant Writing 3 s.h.
ENTR:3500 Social Entrepreneurship 3 s.h.
GEOG:1070 Contemporary Environmental Issues 3 s.h.
GEOG:1090 Globalization and Geographic Diversity 3 s.h.
HHP:3850 Promoting Health Globally 3 s.h.
JMC:2200 Communication and Public Relations 3 s.h.
JMC:3150 Media and Health 3 s.h.
MGMT:3600 Nonprofit Organizational Effectiveness II 3 s.h.
MUSM:3001 Introduction to Museum Studies 3 s.h.
POLI:1600 Introduction to Political Communication 3 s.h.
POLI:3119 Policy Matters: Perspective on Contemporary Problems 3 s.h.
SSW:2222 Introduction to Social Work 4 s.h.

Internship

FPC:2100 Internship in Fundraising and Philanthropy Communication 1-3 s.h.

Courses

Lower-Level Undergraduate

FPC:2100 Internship in Fundraising and Philanthropy Communication 1-3 s.h.
Faculty-supervised professional work experience in fundraising and philanthropy communication.

**FPC:2200 Communication and Public Relations**
3 s.h.
Theory and practice of public relations; cultural, social, and organizational roles of public relations, opportunities, problems, and solutions.

### Upper-Level Undergraduate and Graduate

**FPC:3100 Fundraising Fundamentals**
3 s.h.
Nonprofit organization reliance on raised funds to survive and thrive; basic concepts of fundraising for successful nonprofit organization; work with a nonprofit organization to explore basic fundraising techniques that nonprofits typically use including donor research, annual fund campaigns (phone, mail, email), capital campaigns, events, cause-related marketing, grants, planned giving, and donor stewardship; when and how to use different fundraising strategies to meet an organization's goals.

**FPC:3185 Fundraising and Philanthropy Communication**
3 s.h.
Practical experience planning and writing fundraising materials; how yearly fundraising helps approximately 1.5 million nonprofit organizations receive more than $3 billion from individuals, foundations, and corporations to help people in need, advocate for causes, support research/arts/culture, and enhance opportunities for public and/or their members. Same as JMC:3100.

**FPC:3633 Philanthropy Communication in a Digital World**
4 s.h.
World of philanthropy and nonprofit work that changes rapidly with and in response to developments in digital communications; campaigns and fundraisers driven by free agents on social networking sites as an example of how philanthropists and nonprofit workers operate in digital environment; overview of trends in areas of philanthropy and nonprofit work; practical skills to help communicate, create, and disseminate messages using multiple digital tools and social media; analysis of communication/media strategies; media production. Same as JMC:3633.
Gender, Women's, and Sexuality Studies

Chair
Undergraduate major: gender, women's, and sexuality studies (B.A.)
Undergraduate minor: gender, women's, and sexuality studies
Graduate certificate: gender, women's, and sexuality studies
Faculty: http://clas.uiowa.edu/gwss/people
Web site: http://clas.uiowa.edu/gwss/

Gender, women's, and sexuality studies (GWSS) is an interdisciplinary field that promotes social justice and full citizenship by asking when and how gender intersects with sexuality, class, race, ethnicity, nationality, globalization, and physical ability in ways that can exclude and oppress but that also can enrich cultures and expand opportunities. GWSS trains students to investigate how gender and sexuality shape challenges people face in areas such as the environment, culture and the media, education, health, violence, and the economy. Critical thinking and analysis and development of expertise in writing, research, and presentation provide the program's graduates with the professional skills they will need to pursue careers or graduate study in a wide variety of fields or academic disciplines.

Undergraduate Programs of Study

- Major in gender, women's, and sexuality studies (Bachelor of Arts)
- Minor in gender, women's, and sexuality studies

Bachelor of Arts

The Bachelor of Arts with a major in gender, women's, and sexuality studies (GWSS) requires a minimum of 120 s.h., including at least 36 s.h. of work for the major. Students must maintain a g.p.a. of at least 2.00 in all courses for the major and in all UI courses for the major. They also must complete the College of Liberal Arts and Sciences General Education Program (p. 313).

The major in gender, women's, and sexuality studies emphasizes breadth, depth, and interdisciplinary study. Students acquire knowledge of the field's history, gender and sexuality issues outside the United States and Western Europe, major feminist ideas and debates, and other areas of scholarly concern. They apply this knowledge to an individual research project during their senior year.

Students may declare the major at any time. They are advised by the Academic Advising Center until they have earned 24 s.h. of credit. Transfer credit is evaluated case by case; a maximum of 12 s.h. of transfer credit may be counted toward the degree. Students earning more than one major may count a maximum of three courses completed for the other major toward the GWSS major.

Work for the major consists of the undergraduate core, distribution requirements, and electives. The undergraduate core includes a practicum and culminates in a research seminar.

The major in gender, women's, and sexuality studies requires the following course work.

UNDERGRADUATE CORE

The undergraduate core consists of four courses (minimum of 12 s.h.). Two introductory courses, GWSS:1001 Introduction to Gender, Women's, and Sexuality Studies and GWSS:1002 Diversity and Power in the U.S., orient students to the major conceptual areas that constitute GWSS as an interdisciplinary field: GWSS:1001 introduces the study of cultural and social beliefs about sex, gender, race, class, and sexuality; GWSS:1002 examines issues of race, class, and gender in the United States and the consequences of inequity for communities and individuals.

Gender, Women's, and Sexuality Studies Practicum (GWSS:3005) allows students to explore the intersection of race, sexuality, class, and gender, focusing on social justice issues, through a practicum experience in collaboration with community partners. Students earn 3-4 s.h. for the practicum, depending on the semester in which they take it.

Students take GWSS:4090 Senior Research Seminar during their last semester; members of the University of Iowa Honors Program may take GWSS:4095 Honors Senior Thesis instead. In these courses, students design and develop individual creative or scholarly projects that synthesize and extend work they already have completed for the major. Students earn 3 s.h. for the research seminar or honors thesis.

The undergraduate core includes the following course work.

All of these:

- GWSS:1001 Introduction to Gender, Women's, and Sexuality Studies
- GWSS:1002 Diversity and Power in the U.S.
- GWSS:3005 Gender, Women's, and Sexuality Studies Practicum

One of these:

- GWSS:4090 Senior Research Seminar
- GWSS:4095 Honors Senior Thesis (open only to honors students)

DISTRIBUTION REQUIREMENTS

The distribution requirements (total of at least 12 s.h.) are chosen from the following lists. They include one GWSS theory course, one transnational theory course, one GWSS course with comparative/non-U.S. focus, and one GWSS or other course with a race/ethnicity focus. Students may request permission from the director of undergraduate studies to use courses not on these lists; ideally, these courses should be offered by GWSS (prefix GWSS). At least half of the material in comparative/non-U.S. topics courses must have a non-U.S. context.

Theory—one of these:

- GWSS:3100 LGBTQ/Queer Studies
- GWSS:3200 Feminist Debates and Social Movements

Transnational theory—one of these:
GWSS:2150 Transnational Feminism 3 s.h.
GWSS:3010 Transnational Sexualities 3 s.h.

Comparative/non-U.S. focus—one of these:
- GWSS:2052 Women in Islam and the Middle East 3 s.h.
- GWSS:2108 Gendering India 3 s.h.
- GWSS:3121 Love and Kinship in South Asia 3 s.h.
- GWSS:3131 Gender and Sexuality in Asia 3 s.h.
- GWSS:3157 Gender, Sexuality, and Human Rights 3 s.h.
- GWSS:3185 Global Women's Cinema 3 s.h.
- GWSS:3360 Latin American Women Writers 3 s.h.
- GWSS:4026 French Women Writers 3 s.h.
- GWSS:4725 Women and Gender in African History 3 s.h.

Race/ethnicity—one of these:
- GWSS:2172 The History of African American Women from Slavery to Freedom 3 s.h.
- GWSS:4560 Native American Women and Religious Change 3 s.h.
- AFAM:3710 African American Women Writers 3 s.h.
- AFAM:3925 African Americans and the Media 3 s.h.
- HIST:4216 Mexican American History 3 s.h.
- HIST:4217 Latina/o Immigration 3 s.h.
- HIST:4275 History of Slavery in the U.S.A. 3 s.h.
- SPST:2079 Race and Ethnicity in Sport 3 s.h.
- THTR:3415 Cultural Diversity and Identity 3 s.h.
- Any African American studies course (prefix AFAM) numbered 3000 or above 3 s.h.
- Any American Indian and native studies course (prefix AINS) numbered 3000 or above 3 s.h.

**ELECTIVES**

Students choose elective courses from the list below, in consultation with their advisor. They must complete at least four electives (minimum of 12 s.h.), earning at least 6 s.h. in courses numbered 3000 or above. With the instructor's permission, honors students may count a graduate-level course numbered 5000 or above toward the electives requirement.

In choosing electives, students are encouraged to pursue a course of study that emphasizes both breadth and depth. Students should choose three or four courses in a focus area in which they would like to gain deeper knowledge. The area may be within a specific discipline, such as literature, anthropology, or history. This is especially useful for students pursuing double majors, since they may count toward the GWSS major a maximum of three courses they complete for the other major.

The focus area need not be limited to a traditional discipline. Students may seek more specialized education in fields such as sexuality studies or international issues. Breadth also is important; advisors direct students who have taken several courses in one focus area to take additional electives in another focus area.

Students may request permission to use upper-level courses not listed below. At least half of the course's content and requirements must focus on gender and/or sexuality. For information on requesting permission to use a course not listed here, contact the GWSS undergraduate advisor.

At least four of these (minimum of 12 s.h.), with at least 6 s.h. in courses numbered 3000 or above.

GWSS:1000 First-Year Seminar 1 s.h.
GWSS:1060/AMST:1060 Sex and Popular Culture in the Postwar U.S. 3 s.h.
GWSS:1310/SOC:1310 Gender and Society 3-4 s.h.
GWSS:2000 Desire, Consent, and Sex in U.S. Culture(s): Replacing Coercion and Violence with Respect 3 s.h.
GWSS:2041/COMM:2041 Gender Roles and Communication 3 s.h.
GWSS:2052/RELS:2852 Women in Islam and the Middle East 3 s.h.
GWSS:2078/SPST:2078 Women, Sport, and Culture 3 s.h.
GWSS:2080 The Cultural Politics of HIV-AIDS 3 s.h.
GWSS:2193/ENGL:2193 Literature, Culture, and Women 3 s.h.
GWSS:2325 Women, Crime, and Justice 3 s.h.
GWSS:2651/CLSA:2651 Gender and Sexuality in the Ancient World 3 s.h.
GWSS:3050 Topics in Gender, Women's, and Sexuality Studies 1, 3 s.h.
GWSS:3101 Anthropology of Sexuality 3 s.h.
GWSS:3118/ANTH:3118 Politics of Reproduction 3 s.h.
GWSS:3120/ENGL:3120 Prose by Women Writers 3 s.h.
GWSS:3121/ANTH:3121 Love and Kinship in South Asia 3 s.h.
GWSS:3141/ANTH:3141 Women, Health, and Healing 3 s.h.
GWSS:3154/HIST:3254 Sexuality in the United States 3 s.h.
GWSS:3185/CINE:3185 Global Women's Cinema 3 s.h.
GWSS:3266 Women and Nonfiction 3 s.h.
GWSS:3300/ANTH:3300 Mothers and Motherhood 3 s.h.
GWSS:3360/SPAN:3360 Latin American Women Writers 3 s.h.
GWSS:3450 Writing About Girls 3 s.h.
GWSS:3540/FREN:3540/CINE:3647 Gender and Sexuality in French Cinema 3 s.h.
GWSS:4140/ANTH:4140/CBH:5140 The Anthropology of Women's Health 3 s.h.
GWSS:4280/HIST:4280 Women and Power in U.S. History Through the Civil War 3 s.h.
GWSS:4560/RELS:4920/AINS:4560 Native American Women and Religious Change 3 s.h.
RELS:2771/GWSS:2771 Sexual Ethics 3 s.h.
RELS:2986 Religion and Women 3 s.h.
SOC:4820/GWSS:4820 Sociology of Sexuality 3 s.h.
THTR:3420/GWSS:3420 Sex and Gender in Performance 3 s.h.
Four-Year Graduation Plan

The following checkpoints list the minimum requirements students must complete by certain semesters in order to stay on the University’s Four-Year Graduation Plan.

Before the third semester begins: GWSS:1001 Introduction to Gender, Women’s, and Sexuality Studies

Before the fifth semester begins: GWSS:1002 Diversity and Power in the U.S. and two GWSS electives

Before the seventh semester begins: one GWSS distribution course (theory or comparative/non-U.S. focus) and at least 90 s.h. earned toward the degree

Before the eighth semester begins: GWSS:3005 Gender, Women’s, and Sexuality Studies Practicum, one more GWSS distribution course (theory or comparative/non-U.S. focus), and at least one more GWSS elective

During the eighth semester: enrollment in all remaining course work in the major, all remaining General Education courses, and a sufficient number of semester hours to graduate

Honors in the Major

Students majoring in gender, women's, and sexuality studies have the opportunity to graduate with honors in the major. Departmental honors students must maintain a University of Iowa g.p.a. of at least 3.33 and a g.p.a. of at least 3.50 in the major. To graduate with honors in the major, students must write an honors thesis, which requires two semesters of work during the senior year: fall (thesis research) and spring (thesis writing).

Students who intend to graduate with honors in the major should notify the GWSS director of undergraduate study by the end of their junior year. Before their senior year, they must find a faculty member to serve as their honors thesis supervisor; the department recommends that students consider faculty members from whom they have taken courses.

Students have three options for conducting the fall semester honors research: enroll in GWSS:3990 Independent Readings and Research in Gender, Women’s, and Sexuality Studies for 3 s.h.; or create an honors contract for a GWSS course numbered 3000 or above taught by the student’s honors thesis supervisor and fulfill the requirements of the contract; or complete a graduate readings course or seminar. Each option involves working closely with the student’s honors thesis supervisor.

Students write the honors thesis during spring semester of the senior year, enrolling in GWSS:4095 Honors Senior Thesis. They share their research and writing with their classmates and receive aid in writing their thesis from the instructor of GWSS:4090 Senior Research Seminar.

A student earning more than one major may be able to graduate with honors in both majors. GWSS faculty members work with the student and the other major’s honors advisor to plan a single thesis that satisfies the honors requirements of both majors. GWSS students writing a thesis for double honors must complete their GWSS thesis work during their senior year, according to the usual timeline: research completed in fall semester, thesis writing completed in spring semester.

In addition to honors in the major, undergraduate students have a variety of opportunities for honors study and activities through membership in the University of Iowa Honors Program; visit Honors at Iowa to learn about the University’s honors program.

Minor

The minor in gender, women's, and sexuality studies requires a minimum of 15 s.h. in course work, including at least 12 s.h. completed at the University of Iowa. Students must take GWSS:1001 Introduction to Gender, Women’s, and Sexuality Studies and 12 s.h. in courses numbered 2000 or above. Students may count GWSS:1002 Diversity and Power in the U.S. toward the 12 s.h. requirement.

Students must maintain a g.p.a. of at least 2.00 in all courses for the minor and in all UI courses for the minor. Course work for the minor may not be taken pass/nonpass. Students may count a maximum of 3 s.h. of work in courses focused on gender and/or sexuality for another University of Iowa major, minor, or certificate toward the GWSS minor.

Graduate Program of Study

- Certificate in Gender, Women’s, and Sexuality Studies

The certificate program is open to University of Iowa graduate students working toward a degree; interested students should contact the GWSS director of graduate studies.

Certificate

The Certificate in Gender, Women's, and Sexuality Studies requires 16 s.h., including a two-course core, several elective courses, and a capstone course (1 s.h.), for which students attend a GWSS conference and present their own research there. Students receive certificate advising from the GWSS director of graduate studies.

The certificate requires the following course work. Students may not use one course to satisfy more than one certificate requirement.

**CERTIFICATE CORE**

<table>
<thead>
<tr>
<th>Course</th>
<th>S.H.</th>
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<tbody>
<tr>
<td>GWSS:5000 Foundations for Feminist Inquiry I</td>
<td>3</td>
</tr>
<tr>
<td>GWSS:1001 Introduction to Gender, Women's, and Sexuality Studies</td>
<td>3</td>
</tr>
<tr>
<td>One approved course on theory of gender, women, or sexuality</td>
<td>3</td>
</tr>
</tbody>
</table>

**ELECTIVES**

Elective courses, at least one of which must be numbered 5000 or above 9 s.h.

One of the electives must have a transnational or international focus and one must focus on diversity in the United States. Students may count up to 6 s.h. of elective credit earned in GWSS courses that are cross-listed with their major department. Courses that are not cross-listed may be counted with permission of the director of graduate studies.

**CAPSTONE**

Students must present their own research at a GWSS conference, earning credit for the presentation by registering for the following course.

GWSS:7400 Graduate Research Conference 1 s.h.

Presentation
Courses

Lower-Level Undergraduate

GWSS:1000 First-Year Seminar 1 s.h.
Small discussion class taught by a faculty member; topics chosen by instructor; may include outside activities (e.g., films, lectures, performances, readings, visits to research facilities, field trips). Requirements: first- or second-semester standing.

GWSS:1001 Introduction to Gender, Women's, and Sexuality Studies 3 s.h.
Introduction to feminist interdisciplinary study of women's lives, with emphasis on race, class, sexual orientation; work, family, culture, political and social change. GE: Values, Society, and Diversity.

GWSS:1002 Diversity and Power in the U.S. 3 s.h.
How the intersection of gender, race, class affects individual experience, national ideology, social institutions; interdisciplinary perspective. GE: Values, Society, and Diversity.

GWSS:1005 Topics in Gender, Women's, and Sexuality Studies 3 s.h.

GWSS:1046 People and the Environment: Technology, Culture, and Social Justice 3 s.h.
How resources, commodities, people, and ideas cross borders; examination of globalization through issues of technology, social justice, environment; perspectives from anthropology, gender studies, geography, energy science, and development. GE: International and Global Issues. Same as ANTH:1046, GEOG:1046.

GWSS:1060 Sex and Popular Culture in the Postwar U.S. 3 s.h.
Critical and historical introduction to representation of human sexuality in American popular culture from World War II to the present. GE: Values, Society, and Diversity. Same as AMST:1060, ENGL:1410.

GWSS:1070 Asian American Women Writers 3 s.h.
Introduction to major Asian American women writers of 20th and 21st centuries; construction of gender within Asian American communities and diverse experiences of Asians in America; novels, short stories, memoirs, films, and historical and critical texts. GE: Values, Society, and Diversity.

GWSS:1074 Inequality in American Sport 3 s.h.
Cultural meanings of sport in contemporary U.S. culture; American dream as promoted, challenged in sport; sport experiences, inclusion, and exclusion as affected by gender and sexuality, race and ethnicity, social class, age, physical ability/disability, and nationalism. GE: Values, Society, and Diversity. Same as SPST:1074, AMST:1074.

GWSS:1310 Gender and Society 3-4 s.h.
Role and status of women in society; sex differences, sex role socialization, theories about origin and maintenance of sexual inequalities, changes in social life cycle of women, implications for social institutions and processes; focus on contemporary United States. GE: Values, Society, and Diversity. Same as SOC:1310.

GWSS:2000 Desire, Consent, and Sex in U.S. Culture(s): Replacing Coercion and Violence with Respect 3 s.h.
Exploration of desire, sex, consent, and sexual violence in practical and theoretical dimensions; recent demands by students to change the way sexual violence is addressed; theory and sources from popular media; lectures by scholars, activists, and professionals; sexual violence, rape culture, and sexuality-based oppression confronted with academic/therapeutic/political knowledge; real world strategies to help better understand and combat sexual violence, theories. Prerequisites: RHET:1030. Same as RHET:2031.

GWSS:2041 Gender Roles and Communication 3 s.h.
Interactive relationships between gender and communication in contemporary U.S. society; multiple ways families, schools, and media perpetuate, negotiate, and contest gender roles; how we are part of those processes by looking at how we enact socially-created gender differences in public and private settings. Prerequisites: (COMM:1112 or COMM:1170) and (COMM:1117 or COMM:1130) and (COMM:1168 or COMM:1174) and COMM:1301 and COMM:1305. Requirements: g.p.a. of at least 2.30 and completion of four of five Foundations of Communication courses. Same as COMM:2041.

GWSS:2045 Working for Social Justice 1 s.h.
Identification and pursuit of careers in a wide range of fields where people advocate for and engage issues of social justice; writing self-assessments, résumés, sample employment application letters, statements of purpose; development of e-portfolios that highlight areas of student research and expertise; mock interview practice; Pomerantz Career Center resources; interviewing professionals in careers focused on social justice and feminist issues; local internship and volunteer possibilities; national and international educational and career opportunities for making a difference in the world.

GWSS:2052 Women in Islam and the Middle East 3 s.h.
Women in the Islamic community and in non-Muslim Middle Eastern cultures; early rise of Islam to modern times; references to women in the Qur'an and Sunnah, stories from Islamic history; women and gender issues. GE: International and Global Issues; Values, Society, and Diversity. Same as RELS:2852.
GWSS:2075 Gender, Sexuality, and Media 3 s.h.
Mediated representations of gender and sexuality (television, film, and internet) to understand how these complex and complicated codes influence meaning of sex, sexuality, and gender; contemporary and historical examples used to engage texts that illuminate cultural conceptions of femininity, masculinity, heterosexuality, and homosexuality; cases that confuse and trouble the stability of these categories. Prerequisites: (COMM:1112 or COMM:1170) and (COMM:1117 or COMM:1130) and (COMM:1168 or COMM:1174) and COMM:1301 and COMM:1305. Requirements: g.p.a. of at least 2.30 and completion of four of five Foundations of Communication courses. Same as COMM:2075.

GWSS:2078 Women, Sport, and Culture 3 s.h.
Feminist analysis of girls' and women's sports experiences, including reproduction of gender through sport, recent changes in women's intercollegiate athletics, media representations of women's sport, feminist critiques, alternatives to sport. Same as SPST:2078.

GWSS:2080 The Cultural Politics of HIV-AIDS 3 s.h.
Complex historical shifts in cultural perceptions about HIV-AIDS in the U.S. and transnationally; controversies around HIV-AIDS and their links with questions of gender and sexuality; how HIV-AIDS subsequently became the basis of a transnational industry comprising nongovernmental organizations, donors, and activists across the global north and south, starting from 1980s in the U.S. when HIV-AIDS first emerged into public sphere as a gay disease; link between HIV-AIDS and ideologies of development or progress, neocolonialism, and emergence of transnational political movement. Recommendations: background in gender studies, and completion of Rhetoric or at least one social sciences course. Same as GHS:2080.

GWSS:2102 Anthropology of Marriage and Family 3 s.h.
Classic anthropological theories of kinship and marriage, including topics such as cousin marriage and incest; recent work on new reproductive technologies and transnational marriage. Same as ANTH:2102.

GWSS:2108 Gendering India 3 s.h.
Aspects of Indian culture, including nation, family, sexuality, work, and religion, through the lens of gender; Hindu India, differences in region, caste, and class. Same as ANTH:2108.

GWSS:2150 Transnational Feminism 3 s.h.
Introduction to feminist perspectives from U.S. and non-U.S. contexts; how geopolitics shapes understanding of familiar feminist issues (e.g., reproduction, cultural practices, sexualities, poverty); emphasis on global south regions. Same as ANTH:2150.

GWSS:2172 The History of African American Women from Slavery to Freedom 3 s.h.
Survey of African American women's history from its beginnings through emancipation and Reconstruction; expansion of slavery in the South and its gendered implications, ways black women influenced antebellum slave culture, female modes of resistance; abolition of slavery in the North, and ways Northern emancipation shaped black women's experiences in the region; development of a free black community and black women's roles in these new social configurations; African American female body under slavery; impact of war and revolution on African American women's lives; black women's experiences during Reconstruction.

GWSS:2193 Literature, Culture, and Women 3 s.h.
English majors may apply this course to the following area and/or period requirement. AREA: Literary Theory and Interdisciplinary Studies. PERIOD: 18th/19th-Century Literature, or 20th/21st-Century Literature. Same as ENGL:2193.

GWSS:2325 Women, Crime, and Justice 3 s.h.
Overview of women's experiences with crime and criminal justice system, with reference to experiences of men for purposes of comparison; role of race, ethnicity, and poverty in women's experiences; causes of crime, inequalities in police-citizen interactions, imprisonment, and other aspects of criminal justice system experience. Same as SOC:2325.

GWSS:2600 Men, Masculinity, Identity, and Health 3 s.h.
Impact of male gender roles, masculine identity, and biology on men's health throughout the life course; focus on description, causes, and possible solutions for health related disparities for men in general and for men of color; concepts including machismo, caballerismo, John Henryism, Man Points, hegemonic, and other gender roles related to promoting and reducing quality of health and well-being of U.S. males.

GWSS:2651 Gender and Sexuality in the Ancient World 3 s.h.
Survey of gender and sexuality issues in the social, political, and religious life of ancient Greece and Rome; evidence from literature, the visual arts, archaeology. Requirements: completion of rhetoric requirement and sophomore standing. GE: Values, Society, and Diversity. Same as CLSA:2651.

GWSS:2700 Transgender People, Politics, and Cultures 3 s.h.
How people live across and beyond social differentiation of sex and gender; how practices of identity building and political resistance transform or negotiate with social structures of gender, race, and class; burgeoning field of transgender studies which pushes to interrogate some fundamental aspects of human societies and question how supposedly “natural” categories of sex and gender are constructed and transformed; exploration of lives, politics, and subcultures of people who differ from gender norms in the United States and across the world; how transgender cultures and politics negotiate with structures of race and class. Recommendations: background in gender studies or social sciences.
GWSS:2750 Fertility and Reproduction 3 s.h.
Exploration of when, why, how, and with whom Americans bear children, comparison to other developed and developing countries in the world; infertility and its treatments; ethics of surrogacy; voluntary childlessness; rapid rise of nonmarital childbearing in the U.S. and other countries; politics of childbirth; declining populations; rapid aging of rich where women have basically stopped having children. Same as SOC:2750.

GWSS:2771 Sexual Ethics 3 s.h.
Introduction to religion and ethics; diverse secular, Jewish, and Christian perspectives on human sexuality and sexual activity; religious views underlying divergent attitudes toward same-gender sexuality and abortion. Same as RELS:2771.

GWSS:2778 American Indian Women: Myth, Ritual, and Sacred Power 3 s.h.
Participation of women and girls in native religious traditions; obstacles to knowing and understanding native women's religious roles and experiences. Same as AINS:2078, RELS:2778.

Upper-Level Undergraduate and Graduate

GWSS:3005 Gender, Women's, and Sexuality Studies Practicum 3-4 s.h.
Experience in volunteer work for organizations that provide services for women. Prerequisites: GWSS:1001.

GWSS:3010 Transnational Sexualities 3 s.h.
How ideas about normative and nonnormative sexuality, gender/sexual identities, and related social movements travel across geographical, political, and cultural boundaries; potentials and limits of using conceptual frameworks (i.e., sexuality, gender, LGBT, queer) across the west and global south; how sexuality always intersects with race, class, nationhood, and transnational systems of power; power structures that shape gender/sexuality through a transnational approach; connection of inequalities within the United States with those across the world. Same as GHS:3015.

GWSS:3020 Lesbian, Gay, Bisexual, and Transgender Identities 3 s.h.
Historical and contemporary experiences of sexual minorities; identity, community, culture, art, politics, representation, diversity, assimilation.

GWSS:3050 Topics in Gender, Women's, and Sexuality Studies 1,3 s.h.
Representative topics: American Indian/First Nations Women; population and the environment; feminism and the family; women, health, and healing; women of color.

GWSS:3100 LGBTQ/Queer Studies 3 s.h.
Overview of queer theory and queer studies; development of critical thinking skills in relation to cultural constructions of gender, sexuality, race, and other identity categories. Requirements: for COMM:3100 or communication studies majors — (COMM:1112 or COMM:1170) and (COMM:1117 or COMM:1130) and (COMM:1168 or COMM:1174) and COMM:1301 and COMM:1305 and g.p.a. of at least 2.30 and completion of Foundations of Communication requirement and 6 s.h. of intermediate-level course work. Same as COMM:3100.

GWSS:3101 Anthropology of Sexuality 3 s.h.
Practice, definition, and regulation of sex in different cultures and times; use of anthropological tools, including cross-cultural comparison and social constructionist analysis; how social and historical forces shape sex; how a range of topics relate to sexuality, including science, love, work, globalization, ethnicity, health, aging, pornography, and deviance; focus on ways that dynamics (i.e., class, race, gender norms) shape people's culturally- and historically-specific ways of having and thinking about sex. Same as ANTH:3101.

GWSS:3118 Politics of Reproduction 3 s.h.
Debates over women's reproductive experience, including its medicalization. Same as ANTH:3118.

GWSS:3120 Prose by Women Writers 3 s.h.
English majors may apply this course to the following area and/or period requirement. AREA: Literary Theory and Interdisciplinary Studies. PERIOD: 18th/19th-Century Literature, or 20th/21st-Century Literature. Same as ENGL:3120.

GWSS:3121 Love and Kinship in South Asia 3 s.h.
Anthropological understandings of love in India and the region of South Asia more broadly; emphasis on contemporary society; filial and motherly love, arranged marriage and romantic love, devotional and artistic expressions, love between siblings. Prerequisites: ANTH:1101 or ANTH:2100 or GWSS:1001 or GWSS:1002. Same as ANTH:3121.

GWSS:3131 Gender and Sexuality in Asia 3 s.h.
Conceptions of sex, gender, and sexuality in the religions of China, Korea, and Japan; asceticism and celibacy; sexual alchemy; the difference between male and female bodies and souls; intersexed persons; female saints and immortals; transgressive sexuality; gender and sexuality in colonial Asia; East Asian religions and postcolonial feminism. Same as RELS:3431.

GWSS:3138 Writing to Change the World 3 s.h.
Writers who can frame questions, weigh competing perspectives, structure an argument, and write with clarity and respect for diverse audiences as powerful agents for change; writers who have inspired human rights movements; public forms of writing with local organizations whose missions are shaped by social attitudes to gender and sexuality; how language, imagery, popular culture, and history affect perceptions of gender and sexuality; conducting research and evaluation of evidence; best practices for communicating and collaborating; skills needed to be an effective advocate.
GWSS:3140 Feminist Anthropology 3 s.h.
Development and evolution of feminist critiques in cultural anthropology; readings from early studies by women ethnographers, classic writings that sought to give women cross-cultural visibility, recent experimental texts. Same as ANTH:3140.

GWSS:3141 Women, Health, and Healing 3 s.h.
Women's experience as recipients and providers of health care; intersection of race, class, cultural variation, and women's health; reproductive and nonreproductive health concerns. Same as ANTH:3141.

GWSS:3154 Sexuality in the United States 3 s.h.
Same as HIST:3254.

GWSS:3157 Gender, Sexuality, and Human Rights 3 s.h.
History of gender and sexuality as components in international human rights activism and law; current debates, representative topics. Same as HIST:3157.

GWSS:3173 Gender, Sexuality, and Literature 3 s.h.
Representations of gender, class, and sexuality in British, American, or postcolonial literature. English majors may apply this course to the following area and/or period requirement. AREA: Literary Theory and Interdisciplinary Studies. PERIOD: 20th/21st-Century Literature. Same as ENGL:3173.

GWSS:3177 Women and Their Bodies in Health and Illness 3 s.h.
Basic facts about structure and functioning of female body; particular attention to adjustments the body makes during normal physiological events (menstruation, sexuality, reproduction, menopause) and during illness processes; women's mental and physical health issues in relation to women's lives and roles in society; relationship of women as consumers, practitioners, and activists to health system; achievements and limitations of women's health movements; anti-oppression, intersectionalities, and cross-cultural perspectives. Same as NURS:3739.

GWSS:3185 Global Women's Cinema 3 s.h.
Introduction to contemporary women's cinema and feminist filmmaking from around the world; emphasis on post-1968 period and cinema produced outside the United States. Same as WLLC:3185, CINE:3185.

GWSS:3200 Feminist Debates and Social Movements 3 s.h.
Historical and contemporary feminist analyses of women's position in culture and society; variety of theoretical approaches, political perspectives; contemporary issues, controversies.

GWSS:3266 Women and Nonfiction 3 s.h.
Issues of representation and self-representation by and about women through the study of documentary film and personal essay; focus on paired texts in literature and cinema for analysis and critical reflection; development along historical and transnational lines of inquiry to explore literary and cinematic depictions of racial and cultural identity; motherhood, friendship, and the family; women during wartime, violence against women, domestic and industrial women's work. Requirements: junior or senior standing.

GWSS:3300 Mothers and Motherhood 3 s.h.
Treatment of motherhood; role of motherhood and devaluation of social status. Same as ANTH:3300.

GWSS:3326 The Politics of Progress: NGOs, Development, and Sexuality 3 s.h.
How nonprofit sector increasingly plays a significant role in countering socioeconomic inequalities in the United States and global south; role of nonprofit organizations in relation to governmental policies of development, transnational funders, and ideas of sexual progress; critics of development institutions' arguments that western ideas of progress impose and adversely affect groups they claim to empower, yet also may foster struggles for social justice that go beyond development policy; examination of transnational nonprofit sector in relation to gender/sexuality and how it impacts women and gender/sexual minorities around the world. Recommendations: background in gender studies or social sciences. Same as GHS:3327.

GWSS:3360 Latin American Women Writers 3 s.h.
Focus on 20th century; how Latin American women subjects view themselves through literature; textual practice specific to women; psychoanalytic approaches, contemporary feminist criticism. Requirements: at least one course taught in Spanish at the 2000 level or above. Same as SPAN:3360.

GWSS:3400 GWSS Advocacy and Engagement Colloquium 1-3 s.h.
How to capitalize on volunteer experience; how experience can lead to careers in health care, law, advocacy, social work, social justice, education; issues related to domestic violence, community education, sexual assault, health care for women, youth, and LGBTQ populations; field journal. Recommendations: active volunteer work at feminist-centered organizations in Iowa, completion of 40-hour training, plan to serve organization for up to ten or more hours each month, and attendance at regularly scheduled volunteer meetings.

GWSS:3415 Cultural Diversity and Identity 3 s.h.
Nature of personal and cultural identity within a pluralistic society; race, ethnicity, national identity, class, sexuality, and gender as categories of cultural difference. Same as THTR:3415.

GWSS:3420 Sex and Gender in Performance 3 s.h.
Relationship between sex and gender in the performing body across a range of public venues, including stage, film, athletic events, and social spaces; articles, texts, plays, films, television, and videos; attendance at live performances of theatre, sports, and other events scheduled in the University and local community; discussion format. Same as THTR:3420.

GWSS:3421 Performing Autobiography 3 s.h.
Write and perform original pieces stemming from personal experiences and interests; readings and videos; genre of contemporary autobiographical performance as established artists have developed it; improvisational performance and writing exercises to foster deeper reflection on personal experiences; final staging of students' original work. Same as THTR:3421.

GWSS:3450 Writing About Girls 3 s.h.
Examination of a wide range of critical and creative works by contemporary women writers on girlhood; common use of the word "girls" to describe adult women; representations of girls in film and television; role of media in sexualization of girls; impact of gender, race, and class in girls' lives; nature of girls' relationships with one another; ways in which girlhood traumas can continue into adult life; contemporary issues of body image and sexuality (e.g., pressures to be thin, disparagement of sexually active girl as "slut"); poverty, hunger, and homelessness; resistance and rebellion.

GWSS:3540 Gender and Sexuality in French Cinema 3 s.h.
Cultural, historical, semiotic approach to studying construction of gender identity and sexual codes in French cinema from 1920s to present. Taught in English. Prerequisites: FREN:3060 or CINE:1601 or CINE:1602 or GWSS:1001. Same as FREN:3540, CINE:3647.

GWSS:3610 Writing in the Presence of Death: Rhetoric, Narrative, and Hospice 3 s.h.
Role of rhetoric in health care practice, decisions, and ethics; rhetorical production of patient and professional selves in health care; varied practices, diverse perspectives, and situated production of medical and health care knowledge. Requirements: satisfactory completion of General Education rhetoric requirement. Same as RHET:3610, ASP:3610.

GWSS:3710 African American Women Writers 3 s.h.
Introduction to major African American women authors of the 19th, 20th, and 21st centuries; major debates of black feminist literary scholarship; analyze African American literary representations by reading novels, poetry, short stories, plays, relevant historical and critical texts. GE: Values, Society, and Diversity. Same as AFAM:3710.

GWSS:3990 Independent Readings and Research in Gender, Women's, and Sexuality Studies 3 s.h.

GWSS:4000 Sex/Text:: Engendering the Essay 3 s.h.
Analyze and discuss significant essays that have engaged and articulated sexuality and gender in contemporary societies, in the U.S. as well as other cultures; students write and workshop on these topics: bodies are battlegrounds, gender is convoluted, sex is serious; gender and sexuality are emotionally charged, politically volatile, and socially complex issues. Recommendations: major or minor in writing-intensive disciplines, or previous writing classes.

GWSS:4026 French Women Writers 3-4 s.h.
Survey of 20th-century French women writers with emphasis on Simone de Beauvoir; broad range of literary works by writers including de Beauvoir, Colette, Marguerite Yourcenar, Nathalie Sarraute, Marguerite Duras, Sarah Kofman, Annie Ernaux, Christiane Rachefort; French feminist theorists who followed in de Beauvoir's footsteps, including Helene Cixous, Julia Kristeva, Luce Irigaray. Prerequisites: FREN:3060 or GWSS:1001. Same as FREN:4026.

GWSS:4090 Senior Research Seminar 3 s.h.
Design and development of individual creative or scholarly projects in the field of gender, women's and sexuality studies; emphasis on strengthening students' research and writing skills; synthesizing and extending work already completed in the major. Prerequisites: GWSS:1001. Requirements: two women's studies courses numbered above GWSS:1001.

GWSS:4095 Honors Senior Thesis 3 s.h.
Supervised research, writing. Requirements: honors standing and completion of course work for minor in women's studies.

GWSS:4140 The Anthropology of Women's Health 3 s.h.
How female gender intersects with culture, environment, and political economy to shape health and illness; reproductive health, violence, drug use, cancer; readings in anthropology, public health. Prerequisites: ANTH:1101. Same as ANTH:4140, CBH:5140, GHS:4140.

GWSS:4169 Feminist Rhetorics 3 s.h.
Exploration of multiple, varied, and complex histories of U.S. feminisms from rhetorical perspectives; focus on primary documents, the letters, speeches, essays, and manifesto/as that shaped women's movements and inspire social change from late 18th century to present; social, political, and personal issues that feminists sought to address and transform, communicative and rhetorical methods utilized, and implications of these efforts for women's lives and broader U.S. American culture. Prerequisites: (COMM:1112 or COMM:1170) and (COMM:1117 or COMM:1130) and (COMM:1168 or COMM:1174) and COMM:1301 and COMM:1305. Requirements: g.p.a. of at least 2.30, completion of Foundations of Communication requirement, and 6 s.h. of intermediate-level course work. Same as COMM:4169.

GWSS:4180 Women's Lives in Alternative Texts 3 s.h.
Work of contemporary comics creators; how they craft memoir-based texts that explore intersections of aging, sexuality, race, gender, and relationships. Same as INTM:4780.
GWSS:4280 Women and Power in U.S. History Through the Civil War 3 s.h.
Exploration of how women, as political actors, shaped the outcome of familiar events (the American Revolution, the Civil War); how they organized social movements around important issues of their lives such as the abolition of slavery and the right to consent to sexual intimacy; how women's inequality was established in law and social practice; how women thought about and challenged inequality, both as individuals and in social movements. Same as HIST:4280.

GWSS:4282 Women and Power in U.S. History Since the Civil War 3 s.h.
Major events and themes in U.S. women's history from late 19th century to present; how women's experiences have differed from men's; exploration of distinct, but interconnected histories of different groups of women; changing ideals of femininity; women's experience of industrialization, immigration, depression, war, and sexual revolution; women's activism for social reform, women's rights, labor, civil rights, peace, and the New Right. Same as HIST:4282.

GWSS:4283 U.S. Women's History as the History of Human Rights 3-4 s.h.
History of human rights in the United States traced through the perspective of women; aspects of women's experience (social, political, intellectual) related to fundamental human rights—right to a nationality, right to life, liberty and personal security, right to freedom of movement, right to take part in the government of their country, right to own property; these and other rights specified by the United Nations in the Universal Declaration of Human Rights, 1948; different history of men and women enjoying these rights; how human rights have been constructed and experienced in the United States from the era of colonial settlement to present. Same as HIST:4283, AMST:4283, HRTS:4283.

GWSS:4427 Society and Gender in Europe 1200-1789 3 s.h.
Social and gender ideologies as inscribed in patterns of authority (household, church, state); ranges of human endeavor (intellectual, psychological, biological); community organization (social, economic, legal, sexual); their influence on concept of community. Same as HIST:4427.

GWSS:4461 Gender and Violence 3 s.h.
Extent and nature of gendered violence, interpretation of patterns using feminist theory and perspectives on masculinities and heterosexism; examination of interpersonal violence, including criminal violence committed by women and men, violence against women and men (victimization), spousal/intimate partner abuse, youth gangs, bullying in schools, sexual violence, femicide, and genocide. Same as SOC:4461.

GWSS:4560 Native American Women and Religious Change 3 s.h.
Native women's diverse experiences and their roles in native societies, examined through contact experiences between native and nonnative peoples; changes in women's roles in context of interactions between native people, missionaries, European colonists, and Americans; approaches to re-imaging women's early contact roles presented in cultural narratives, archaeology, history, ethnography, and missionary records. Same as AINS:4560, RELS:4920.

GWSS:4725 Women and Gender in African History 3 s.h.
Importance of female agency in African history; African women's history in historiographical framework of women's history, challenges historians face in exploring African women's past; varied sources (e.g., novels, films, court records) from sub-Saharan Africa, urban and rural settings; current literature on African women, African women's experiences in a comparative context. Same as HIST:4725.

GWSS:4820 Sociology of Sexuality 3 s.h.
Sociological perspectives on sexuality, including theoretical and conceptual developments, empirical regularities, and social implications; sexual expression in the United States. Prerequisites: SOC:1010 or SOC:1020. Same as SOC:4820.

Graduate

GWSS:5000 Foundations for Feminist Inquiry I 3 s.h.
Theory, critique, methodology, practice.

GWSS:5120 Reading Transnational Feminist Theory 3 s.h.
Issues in transnational feminist scholarship, including colonialism, globalization, the nation-state, religion, cultural traditions, and human rights, in global and U.S. domestic contexts; interdisciplinary readings with focus on anthropology, other social sciences. Same as ANTH:5120.

GWSS:6050 Topics in Gender, Women's, and Sexuality Studies 3 s.h.
Special topics in women's studies.

GWSS:6125 Seminar: Feminist Ethnography 3 s.h.
Feminist critiques of traditional ethnographies; informed by contemporary feminisms. Same as ANTH:6125.

GWSS:6130 Studies in Francophone Literatures 3 s.h.
Historical, anthropological, comparative approach to Francophone literatures and cultures; Afro/Indo-Caribbean religions in literatures, theoretical and critical discourses, women's literature and cinema. Same as FREN:6130.

GWSS:6225 Feminist Critical Theory 3 s.h.
Questions of difference, the body, agency, identity politics, gender performativity, power as both productive and oppressive; perspectives from texts in poststructuralist and feminist philosophy.

GWSS:6238 Gender and Education in Historical Perspective 3 s.h.
Gender in context of history of education in the United States; coeducation in common schools, academies, and high schools; women's arrival and experiences as college students; masculinity in higher education; single-sex versus coeducation; emphasis on conflicting historical interpretations. Same as EPLS:6238.

GWSS:6256 Gender and Mass Communication
3 s.h.
Approaches to the study of gender and communication; topics vary. Same as JMC:6256.

GWSS:6310 Anthropology of Science, Technology, and Gender
3 s.h.
Science and technology done in particular social and structural contexts; theoretical approaches for understanding cultures of science and social uses of technology; focus on gender-related aspects of real world cases. Recommendations: graduate standing in any discipline with interest in understanding cultural context of scientific practice. Same as ANTH:6310.

GWSS:6350 Gender and Religion
3 s.h.
What contemporary religious and spiritual groups and their members believe about sex, sexuality, and gender; how they define and redefine what it means to be a "man" and a "woman"; exploration of contemporary "conservative" and "progressive" cosmologies and theologies; underlying beliefs that construct these perspectives and the impact on individual and group practices; broader implications of individual and group beliefs and practices on national and global policies. Same as RELS:6350.

GWSS:6415 Seminar: Language, Gender, and Sexuality
3 s.h.
Role of language and discourse in cultural constructions of gender identities and relations, including domination and subordination; theoretical perspective and methodological approaches that have shaped thought on the language/gender nexus. Same as ANTH:6415, LING:6415.

GWSS:6660 Critical Ethnography
3 s.h.
How power relations constitute the work of ethnographic research; ethnography as a rhetorical form—how ethnographic inscription renders self, other, culture, and the world intelligible in ways that reinscribe and/or challenge dominant social relations; axes of power such as race, class, gender, sexuality, and nation within postcolonial, feminist, and antiracist approaches to ethnographic/autoethnographic theory and praxis; negotiating researcher privilege and epistemic violence; crisis of representation. Same as COMM:6660.

GWSS:6710 Seminar: Women in Sport
3 s.h.
Women's sport involvement in historical and/or contemporary contexts; focus on social class, religion, race, ethnicity, sexuality, medical opinion, economic considerations, political events, and educational philosophies that have influenced women's participation. Same as SPST:6078, AMST:6078.

GWSS:6990 Independent Study
arr.

GWSS:7020 Feminist Research Seminar
Feminist research methodologies; how to conduct original research, write a research proposal and research paper, and read and criticize others' work. Same as HIST:7120.

GWSS:7205 Gender and Race in Nineteenth-Century U.S.
Same as HIST:7205, AFAM:7205.

GWSS:7207 French Theory and the Politics of Gender
3 s.h.
Introduction to structuralist, poststructuralist, and deconstructionist theory; influence of post-WWII French thought on the development of French and gender theory.

GWSS:7214 Readings: African American Women's History
Same as HIST:7214, AFAM:7214.

GWSS:7220 Readings: History of Sexuality
History of sexuality within the family, its move into the marketplace; social customs and taboos, methods of birth control and abortion, religion, medical and psychological writings, state policies. Same as HIST:7220.

GWSS:7275 Readings in the History of Women and Gender in the U.S.A.
Same as HIST:7275.

GWSS:7289 Readings: Gender in Latin American History
Same as HIST:7589.

GWSS:7400 Graduate Research Conference Presentation
1 s.h.
Presentation of conference paper based on current research activities; for students pursuing the Certificate in Gender, Women's, and Sexuality Studies. Requirements: gender, women's, and sexuality studies graduate certificate standing.

GWSS:7435 Readings: Women, Men, and Gender in Modern Europe
Same as HIST:7435.

GWSS:7500 Ph.D. Thesis
arr.

GWSS:7920 Innovative Methods in Pedagogy: Radical Feminist Pedagogy
Readings in history, theory, and practice of pedagogical innovations appropriate to composition instruction and other interdisciplinary teaching; project-based assignments that produce materials appropriate for classroom use. Same as RHET:7920.
General Education Program

Web site: http://clas.uiowa.edu/students/general-education-program-requirements

The College of Liberal Arts and Sciences General Education Program provides students with a broad foundation of knowledge and a focused practice of transferable skills necessary for a lifetime of learning.

General Education courses are particularly valuable for students making the transition into the University of Iowa. They help students understand the expectations of the College of Liberal Arts and Sciences while providing the tools needed for more advanced academic work in the major.

All students in the College of Liberal Arts and Sciences who wish to earn an undergraduate degree—Bachelor of Arts (B.A.), Bachelor of Science (B.S.), Bachelor of Fine Arts (B.F.A.), or Bachelor of Music (B.M.)—must complete the requirements of the CLAS General Education Program.

General Education Areas and Requirements

The General Education Program has 10 required areas, grouped into three categories. Students must fulfill the requirements in each General Education area.

Communication and Literacy:
- Rhetoric: a minimum of 4 s.h.
- World Languages: required credit varies by language (see “World Languages” below)
- Interpretation of Literature: a minimum of 3 s.h.

Natural, quantitative, and social sciences:
- Natural Sciences: a minimum of 7 s.h.; must include one lab
- Quantitative or Formal Reasoning: a minimum of 3 s.h.
- Social Sciences: a minimum of 3 s.h.

Culture, society, and the arts:
- Historical Perspectives: a minimum of 3 s.h.
- International and Global Issues: a minimum of 3 s.h.
- Literary, Visual, and Performing Arts: a minimum of 3 s.h.
- Values, Society, and Diversity: a minimum of 3 s.h.

Students may count transfer credit and/or credit by exam toward some General Education Program requirements. See General Education Policies for details regarding use of transfer credit, credit by exam, and other policies for how General Education requirements may be fulfilled.

Communication and Literacy

Rhetoric

Rhetoric courses develop speaking, writing, listening, and critical reading skills and build competence in research, analysis, and argumentation.

All entering first-year students are required to complete RHET:1030 Rhetoric (4-5 s.h.). Because rhetorical skills lay the foundation for further study at the University, most students register for RHET:1030 during their first year at Iowa. Students in some majors, such as English or journalism and mass communication, enroll in RHET:1030 during their first semester.

Students who must enroll in English as a Second Language (ESL) courses as determined by their English proficiency evaluation must complete all ESL courses before they may register for RHET:1030 Rhetoric.

Students who have transfer credit in composition, speech, and argumentation but have not been granted an A.A. degree must complete the equivalent of RHET:1030 Rhetoric and often must take RHET:1040 Writing and Reading or RHET:1060 Speaking and Reading in addition to their transfer courses in composition and/or speech.

Each entering student's degree audit shows the course(s) he or she must complete in order to fulfill the Rhetoric requirement.

The following courses are approved for the Rhetoric area.

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>RHET:1030 Rhetoric</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>RHET:1040 Writing and Reading</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>RHET:1060 Speaking and Reading</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

TRANSFER OF CREDIT FOR RHETORIC

Transfer students who have been granted an Associate of Arts (A.A.) degree from an Iowa community college, Waldorf College in Iowa, or Black Hawk College in Illinois have satisfied the Rhetoric requirement.

Transfer credit for students without an A.A. degree is evaluated as follows:

- transfer students who have completed composition I, composition II, and speech at another institution have satisfied the General Education Program's Rhetoric requirement of RHET:1030 Rhetoric;
- transfer students who have completed only composition I must complete RHET:1030 Rhetoric at the University of Iowa;
- transfer students who have completed composition I and speech must complete RHET:1040 Writing and Reading at the University of Iowa;
- transfer students who have completed only speech must complete RHET:1040 Writing and Reading at the University of Iowa;
- transfer students who have completed composition I and II or only composition II must complete RHET:1060 Speaking and Reading at the University of Iowa;
- transfer students who have completed any other course at another institution that may be equivalent to RHET:1030 Rhetoric, the University of Iowa Office of Admissions examines the content of the course and decides on equivalency based on the content of that course, conferring with the Department of Rhetoric on the correct equivalency, if necessary.

Interpretation of Literature

Courses in the Interpretation of Literature area focus on the major genres of literature (short and long fiction, nonfiction, poetry, and drama), improving students' abilities to read and analyze a variety of texts. Small group discussions in these courses challenge students to think critically, to share insights, and to listen thoughtfully to the arguments of others.
All students must complete at least 3 s.h. of course work in the Interpretation of Literature area. The following courses are approved for the area.

ENGL:1200 The Interpretation of Literature 3 s.h.
FREN:1005 Texts and Contexts: French-Speaking World 3 s.h.
FREN:1007 Nature/Ecology French Philosophy and Fiction 3 s.h.
HONR:1885 Reading the Ancient City 3 s.h.

World Languages

Courses in the World Languages area provide students with speaking, listening, reading, and writing skills in a second language as well as knowledge of the culture in which the language is spoken. To fulfill the World Languages requirement, students must:

- complete the fourth year in a world language in high school; or
- complete four semesters* in an approved General Education world language course sequence at the University of Iowa (note the exception for Latin) or the equivalent courses at another college or university or during study abroad; or
- pass a written and oral achievement test measuring proficiency in a world language taught at the University of Iowa, equivalent to that usually attained after four semesters of college study; or
- achieve a passing score on Advanced Placement, International Baccalaureate, or other approved college-level world languages examination program.

*A student may be required to complete fewer than four semesters based on his or her language placement test results.

For information about proficiency examinations and guidelines for taking them, see the World Languages web page. The page also provides information about how students whose first language is not English may fulfill the World Languages requirement.

Once students have completed the World Languages requirement, they may earn up to 8 s.h. of additional credit in language study; see the Furthering Language Incentive Program (FLIP) web page.

Students may use the following language course sequences to fulfill the World Languages requirement. To avoid duplication or regression, consult the appropriate language department before registering for courses.

AMERICAN SIGN LANGUAGE

Courses in American Sign Language (ASL) are offered by the American Sign Language (p. 41) Program. The following sequence fulfills the General Education Program's World Languages requirement.

ASL:1001 American Sign Language I 4 s.h.
ASL:1002 American Sign Language II 4 s.h.
ASL:2001 American Sign Language III 4 s.h.
ASL:2002 American Sign Language IV 4 s.h.

Students with previous knowledge of American Sign Language should consult the ASL program for placement.

ARABIC

Courses in Arabic are offered by the Department of French and Italian (p. 291). The following sequence fulfills the General Education Program's World Languages requirement.

ARAB:1001 Elementary Modern Standard Arabic I 5 s.h.
ARAB:1002 Elementary Modern Standard Arabic II 5 s.h.
ARAB:2001 Intermediate Modern Standard Arabic I 5 s.h.
ARAB:2002 Intermediate Modern Standard Arabic II 5 s.h.

Students with previous knowledge of Arabic should consult the department for appropriate placement.

CHINESE

Courses in Chinese are offered by the Department of Asian and Slavic Languages and Literatures (p. 100). For students without previous knowledge of Chinese, the department recommends the following sequence to fulfill the General Education Program's World Languages requirement.

CHIN:1111 First-Year Chinese: First Semester 5 s.h.
CHIN:1112 First-Year Chinese: Second Semester 5 s.h.
CHIN:2101 Second-Year Chinese: First Semester 5 s.h.
CHIN:2102 Second-Year Chinese: Second Semester 5 s.h.

Students may use varied combinations of Chinese language courses approved for General Education to fulfill the World Languages requirement. Heritage learners and students who have studied Chinese abroad may be able to fulfill the requirement by substituting CHIN:2104 Accelerated Second-Year Chinese: First Semester and CHIN:2104 Accelerated Second-Year Chinese: Second Semester for CHIN:2101 and CHIN:2102. Consult the department for more information.

CZECH

Courses in Czech are offered by the Department of Asian and Slavic Languages and Literatures (p. 100). The following sequence fulfills the General Education Program's World Languages requirement.

SLAV:1211 Conversational Czech I 3 s.h.
SLAV:1212 Conversational Czech II 3 s.h.
SLAV:2211 Conversational Czech III 3 s.h.
SLAV:2212 Conversational Czech IV 3 s.h.

Students with previous knowledge of Czech should consult the department for proper placement.

FRENCH

Courses in French are offered by the Department of French and Italian (p. 291). For students without previous knowledge of French, the department recommends the following sequence to fulfill the General Education Program's World Languages requirement.

FREN:1001 Elementary French I 5 s.h.
FREN:1002 Elementary French II 5 s.h.
Students may use varied combinations of French language courses approved for General Education to fulfill the World Languages requirement. Those with previous knowledge of French may be able to fulfill the requirement by substituting FREN:1010 First-Year French Review for FREN:1001 and FREN:1002 in the sequence above. Some students may be evaluated as ready for FREN:2001 or FREN:2002. Consult the department for appropriate placement.

GERMAN

Courses in German are offered by the Department of German (p. 336). For students without previous knowledge of German, the department recommends the following sequence to fulfill the General Education Program's World Languages requirement.

- GRMN:1001 Elementary German I 4 s.h.
- GRMN:1002 Elementary German II 4 s.h.
- GRMN:2001 Intermediate German I 4 s.h.
- GRMN:2002 Intermediate German II 4 s.h.

Students may use varied combinations of German language courses approved for General Education to fulfill the World Languages requirement. Those with previous knowledge of German may be able to fulfill the requirement by substituting GRMN:1010 First-Year German Review for GRMN:1001 and GRMN:1002 in the sequence above. Some students may be evaluated as ready for GRMN:2001 or GRMN:2002. Consult the department for appropriate placement.

The department also offers accelerated intensive courses, GRMN:1020 Intensive Elementary German and GRMN:2020 Intensive Intermediate German, which may be appropriate for students with strong language learning abilities or experience. The intensive courses may be combined with nonintensive courses to create other sequences that may be used to fulfill the General Education World Languages requirement. Consult the department to identify an appropriate course sequence.

GREEK

Courses in Greek are offered by the Department of Classics (p. 149). Students without previous knowledge of Greek should fulfill the General Education Program's World Languages requirement with the following sequence.

- CLSG:1001 Classical and New Testament Greek I 3-5 s.h.
- CLSG:1002 Classical and New Testament Greek II 3-5 s.h.
- CLSG:2001 Second-Year Greek I 3 s.h.
- CLSG:2002 Second-Year Greek II 3 s.h.

Students with previous knowledge of Greek should consult the department for appropriate placement.

HINDI-URDU

Courses in Hindi-Urdu are offered by the Department of Asian and Slavic Languages and Literatures (p. 100). Students without previous knowledge of Hindi-Urdu should fulfill the General Education Program's World Languages requirement with the following sequence. Each of these courses is open to entering first-year students.

- SOAS:2101 First-Year Hindi-Urdu: First Semester 5 s.h.
- SOAS:2102 First-Year Hindi-Urdu: Second Semester 5 s.h.
- SOAS:3101 Second-Year Hindi-Urdu: First Semester 4 s.h.
- SOAS:3102 Second-Year Hindi-Urdu: Second Semester 4 s.h.

Students with previous knowledge of Hindi-Urdu should consult the department for appropriate placement.

ITALIAN

Courses in Italian are offered by the Department of French and Italian (p. 291). Students without previous knowledge of Italian should fulfill the General Education Program's World Languages requirement with the following sequence.

- ITAL:1101 Elementary Italian 5 s.h.
- ITAL:1102 Elementary Italian II 5 s.h.
- ITAL:2203 Intermediate Italian 4 s.h.
- ITAL:2204 Intermediate Italian II 4 s.h.

Students with strong language learning abilities or a background in another Romance language may be able to complete the requirement by substituting ITAL:3002 Intensive Elementary Italian for ITAL:1101 and ITAL:1102 in the sequence above. Consult the department for appropriate placement.

JAPANESE

Courses in Japanese are offered by the Department of Asian and Slavic Languages and Literatures (p. 100). For students without previous knowledge of Japanese, the department recommends the following sequence to fulfill the General Education Program's World Languages requirement.

- JPNS:1001 First-Year Japanese: First Semester 5 s.h.
- JPNS:1002 First-Year Japanese: Second Semester 5 s.h.
- JPNS:2001 Second-Year Japanese: First Semester 4-5 s.h.

Students may use varied combinations of Japanese language courses approved for General Education to fulfill the World Languages requirement. Those with previous knowledge of Japanese should consult the department for appropriate placement.

KOREAN

Courses in Korean are offered by the Department of Asian and Slavic Languages and Literatures (p. 100). For students without previous knowledge of Korean, the department recommends the following sequence to fulfill the General Education Program's World Languages requirement.

- ASIA:1101 First-Year Korean: First Semester 4 s.h.
- ASIA:1102 First-Year Korean: Second Semester 4 s.h.
- ASIA:2101 Second-Year Korean: First Semester 4 s.h.
- ASIA:2102 Second-Year Korean: Second Semester 4 s.h.
Students with previous knowledge of Korean should consult the department for appropriate placement.

LATIN
Courses in Latin are offered by the Department of Classics (p. 149). Students without previous knowledge of Latin should fulfill the General Education Program's World Languages requirement with the following sequence.

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CLSL:1001 Elementary Latin I</td>
<td>3-5 s.h.</td>
</tr>
<tr>
<td>CLSL:1002 Elementary Latin II</td>
<td>3-5 s.h.</td>
</tr>
<tr>
<td>CLSL:2001 World of Cicero</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>CLSL:2002 Golden Age of Roman Poetry</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

Students with previous knowledge of Latin should consult the department for appropriate placement.

PORTUGUESE
Courses in Portuguese are offered by the Department of Spanish and Portuguese (p. 596). Only one sequence in Portuguese is approved to fulfill the General Education Program's World Languages requirement. Both courses in the sequence are open to entering first-year students.

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PORT:2000 Accelerated Elementary Portuguese</td>
<td>5 s.h.</td>
</tr>
<tr>
<td>PORT:2500 Accelerated Intermediate Portuguese</td>
<td>5 s.h.</td>
</tr>
</tbody>
</table>

Students with previous knowledge of Portuguese should consult the department for appropriate placement.

RUSSIAN
Courses in Russian are offered by the Department of Asian and Slavic Languages and Literatures (p. 100). Students without previous knowledge of Russian should fulfill the General Education Program's World Languages requirement with the following sequence.

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SLAV:1111 First-Year Russian I</td>
<td>5 s.h.</td>
</tr>
<tr>
<td>SLAV:1112 First-Year Russian II</td>
<td>5 s.h.</td>
</tr>
<tr>
<td>SLAV:2111 Second-Year Russian I</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>SLAV:2112 Second-Year Russian II</td>
<td>4 s.h.</td>
</tr>
</tbody>
</table>

Students with previous knowledge of Russian should consult the department for appropriate placement.

SANSKRIT
Courses in Sanskrit are offered by the Department of Asian and Slavic Languages and Literatures (p. 100). Students without previous knowledge of Sanskrit should fulfill the General Education Program's World Languages requirement with the following sequence. Each of these courses is open to entering first-year students.

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOAS:2901/CLSA:2901 First-Year Sanskrit: First Semester</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>SOAS:2902/CLSA:2902 First-Year Sanskrit: Second Semester</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>SOAS:3901/CLSA:3901 Second-Year Sanskrit: First Semester</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>SOAS:3902/CLSA:3902 Second-Year Sanskrit: Second Semester</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

Students with previous knowledge of Sanskrit should consult the department for appropriate placement.

SPANISH
Courses in Spanish are offered by the Department of Spanish and Portuguese (p. 596). For students without previous knowledge of Spanish, the department recommends the following sequence to fulfill the General Education Program's World Languages requirement.

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPAN:1001 Elementary Spanish I</td>
<td>5 s.h.</td>
</tr>
<tr>
<td>SPAN:1002 Elementary Spanish II</td>
<td>5 s.h.</td>
</tr>
<tr>
<td>SPAN:1501 Intermediate Spanish I</td>
<td>5 s.h.</td>
</tr>
<tr>
<td>SPAN:1502 Intermediate Spanish II</td>
<td>5 s.h.</td>
</tr>
</tbody>
</table>

Students may use varied combinations of Spanish language courses approved for General Education to fulfill the General Education World Languages requirement. Those with previous knowledge of Spanish may be able to fulfill the requirement by substituting SPAN:1003 Elementary Spanish Review for SPAN:1001 and SPAN:1002 in the sequence above.

The accelerated course SPAN:1503 Accelerated Intermediate Spanish, which combines SPAN:1501 and SPAN:1502, may be appropriate for some students.

Students may substitute SPAN:1504 Spanish for Healthcare Providers in place of SPAN:1502 as the last course to fulfill the General Education Program's World Languages requirement.

Students with previous knowledge of Spanish should take the language placement test in Spanish to help determine proper placement.

SWAHILI
Courses in Swahili are offered by the Department of French and Italian (p. 291). The following sequence fulfills the General Education Program's World Languages requirement. Each of these courses is open to entering first-year students.

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SWAH:3001 Elementary Swahili I</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>SWAH:3002 Elementary Swahili II</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>SWAH:3003 Intermediate Swahili I</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>SWAH:3004 Intermediate Swahili II</td>
<td>4 s.h.</td>
</tr>
</tbody>
</table>

Students with previous knowledge of Swahili should consult the department for appropriate placement.

OTHER COURSE SEQUENCES
A student who successfully completes a four-semester world language sequence that has not been approved for General Education may have the sequence substituted for a proficiency test to fulfill the General Education requirement.

Students who complete a world language sequence this way should notify the department that offers the sequence; the department will contact Graduation Analysis in the Office of the Registrar, which will update a student's degree audit to show fulfillment of the World Languages requirement.

Natural, Quantitative, and Social Sciences

Natural Sciences
Courses in the Natural Sciences area explore the scope and major concepts of a scientific discipline. Students
learn the attitudes and practices of scientific investigators: logic, precision, experimentation, tentativeness, and objectivity. In courses with a laboratory component, students gain experience in the methods of scientific inquiry.

All students must complete at least 7 s.h. of course work in the Natural Sciences area, including at least one natural science lab component. The following courses are approved for the area; courses with a lab component are noted "(lab)."

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH:1301</td>
<td>Human Origins</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ASTR:1070</td>
<td>Stars, Galaxies, and the Universe (with lab 4 s.h.; without lab 3 s.h.)</td>
<td>3-4 s.h.</td>
</tr>
<tr>
<td>ASTR:1079</td>
<td>Introductory Astronomy Laboratory (lab)</td>
<td>1 s.h.</td>
</tr>
<tr>
<td>ASTR:1080</td>
<td>Exploration of the Solar System (with lab 4 s.h.; without lab 3 s.h.)</td>
<td>3-4 s.h.</td>
</tr>
<tr>
<td>ASTR:1090</td>
<td>Life in the Universe</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ASTR:1771</td>
<td>General Astronomy I (lab)</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>ASTR:1772</td>
<td>General Astronomy II (lab)</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>BIOL:1061/ANTH:1061/ASTR:1061/EES:1061 Origins of Life in the Universe (Part 2) (lab)</td>
<td>4 s.h.</td>
<td></td>
</tr>
<tr>
<td>BIOL:1140</td>
<td>Human Biology (lab)</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>BIOL:1141</td>
<td>Introductory Animal Biology (lab)</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>BIOL:1251</td>
<td>How the Brain Works (and Why it Doesn't)</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>BIOL:1260</td>
<td>Plants and Human Affairs</td>
<td>2-3 s.h.</td>
</tr>
<tr>
<td>BIOL:1261</td>
<td>Introduction to Botany (lab)</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>BIOL:1311/ANTH:1310 Human Genetics in the Twenty-First Century</td>
<td>3 s.h.</td>
<td></td>
</tr>
<tr>
<td>BIOL:1370</td>
<td>Understanding Evolution (formerly Ecology and Evolution)</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>BIOL:1411</td>
<td>Foundations of Biology (lab)</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>BIOL:1412</td>
<td>Diversity of Form and Function (lab)</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>CHEM:1050</td>
<td>Technology and Society</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>CHEM:1060</td>
<td>Technology and Society Laboratory (lab)</td>
<td>1 s.h.</td>
</tr>
<tr>
<td>CHEM:1070</td>
<td>General Chemistry I</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>CHEM:1080</td>
<td>General Chemistry II</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>CHEM:1100</td>
<td>Chemistry in Industry and the Economy</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>CHEM:1110</td>
<td>Principles of Chemistry I (lab)</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>CHEM:1120</td>
<td>Principles of Chemistry II (lab)</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>CHEM:1160</td>
<td>Principles of Chemistry Lab (lab)</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>CHEM:1180</td>
<td>Chemical Science I</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>CHEM:1190</td>
<td>Chemical Science II</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>CHEM:1200</td>
<td>Chemical Science Laboratory (lab)</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>EES:1030/CEE:1030</td>
<td>Introduction to Earth Science (with lab 4 s.h.; without lab 3 s.h.)</td>
<td>3-4 s.h.</td>
</tr>
<tr>
<td>EES:1040</td>
<td>Evolution and the History of Life (with lab 4 s.h.; without lab 3 s.h.)</td>
<td>3-4 s.h.</td>
</tr>
<tr>
<td>EES:1050</td>
<td>Introduction to Geology (lab)</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>EES:1070</td>
<td>Age of Dinosaurs (lab)</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>EES:1080/ENVS:1080</td>
<td>Introduction to Environmental Science (with lab 4 s.h.; without lab 3 s.h.)</td>
<td>3-4 s.h.</td>
</tr>
<tr>
<td>EES:1090/ENVS:1090</td>
<td>Introduction to Environmental Sciences Laboratory (lab)</td>
<td>1 s.h.</td>
</tr>
<tr>
<td>EES:1290</td>
<td>Energy and the Environment</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>EES:1400</td>
<td>Natural Disasters</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>GEOG:1020</td>
<td>The Global Environment</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>GEOG:1021</td>
<td>The Global Environment Lab (lab)</td>
<td>1 s.h.</td>
</tr>
<tr>
<td>HHP:1100</td>
<td>Human Anatomy</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>HHP:1110</td>
<td>Human Anatomy Laboratory (lab)</td>
<td>1 s.h.</td>
</tr>
<tr>
<td>HHP:1300</td>
<td>Fundamentals of Human Physiology</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>HHP:2310</td>
<td>Nutrition and Health</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>HONR:1640</td>
<td>Honors Seminar in Natural Sciences</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>PHYS:1100</td>
<td>From Quarks to Quasars (with lab 4 s.h.; without lab 3 s.h.)</td>
<td>3-4 s.h.</td>
</tr>
<tr>
<td>PHYS:1200</td>
<td>Physics of Everyday Experience</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>PHYS:1300</td>
<td>Nanoscience</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>PHYS:1400</td>
<td>Basic Physics (with lab 4 s.h.; without lab 3 s.h.)</td>
<td>3-4 s.h.</td>
</tr>
<tr>
<td>PHYS:1410</td>
<td>Physics of Sound (with lab 4 s.h.; without lab 3 s.h.)</td>
<td>3-4 s.h.</td>
</tr>
<tr>
<td>PHYS:1511</td>
<td>College Physics I (lab)</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>PHYS:1512</td>
<td>College Physics II (lab)</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>PHYS:1611</td>
<td>Introductory Physics I (lab)</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>PHYS:1612</td>
<td>Introductory Physics II (with lab 4 s.h.; without lab 3 s.h.)</td>
<td>3-4 s.h.</td>
</tr>
<tr>
<td>PHYS:1619</td>
<td>Introductory Physics II Lab (lab)</td>
<td>1 s.h.</td>
</tr>
<tr>
<td>PHYS:1701</td>
<td>Physics I (lab)</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>PHYS:1702</td>
<td>Physics II (lab)</td>
<td>4 s.h.</td>
</tr>
</tbody>
</table>

**Quantitative or Formal Reasoning**

Courses in the Quantitative or Formal Reasoning area help develop analytical skills through the practice of quantitative or formal symbolic reasoning. Courses focus on presentation and evaluation of evidence and argument; understanding the use and misuse of data; and organization of information in quantitative or other formal symbolic systems, including those used in computer science, linguistics, mathematics, philosophy, and statistics.

All students must complete at least 3 s.h. of course work in the Quantitative or Formal Reasoning area. Students may fulfill this requirement of the General Education Program by completing a course that lists an approved course as a prerequisite. The following courses are approved for the area.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMM:1117</td>
<td>Theory and Practice of Argument</td>
</tr>
<tr>
<td>CS:1020</td>
<td>Principles of Computing</td>
</tr>
<tr>
<td>CS:1110</td>
<td>Introduction to Computer Science</td>
</tr>
<tr>
<td>CS:1210</td>
<td>Computer Science I: Fundamentals</td>
</tr>
<tr>
<td>HHP:1030</td>
<td>Introduction to Critical Thinking</td>
</tr>
<tr>
<td>HONR:1650</td>
<td>Honors Seminar in Quantitative and Formal Reasoning</td>
</tr>
<tr>
<td>LING:1050</td>
<td>Language and Formal Reasoning</td>
</tr>
<tr>
<td>MATH:1020</td>
<td>Elementary Functions</td>
</tr>
<tr>
<td>MATH:1120</td>
<td>Logic of Arithmetic</td>
</tr>
<tr>
<td>MATH:1130</td>
<td>Theory of Arithmetic</td>
</tr>
<tr>
<td>MATH:1240</td>
<td>Finite Mathematics</td>
</tr>
<tr>
<td>MATH:1340</td>
<td>Mathematics for Business</td>
</tr>
<tr>
<td>MATH:1380</td>
<td>Calculus and Matrix Algebra for Business</td>
</tr>
</tbody>
</table>
All students must complete at least 3 s.h. of course work in the Social Sciences area. The following courses are approved for the area.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH:1440</td>
<td>Mathematics for the Biological Sciences</td>
<td>4 s.h.</td>
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<tr>
<td>MATH:1460</td>
<td>Calculus for the Biological Sciences</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>MATH:1550</td>
<td>Engineering Mathematics I: Single Variable Calculus</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>MATH:1850</td>
<td>Calculus I</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>PHIL:1636</td>
<td>Principles of Reasoning: Argument and Debate</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>POLI:1700</td>
<td>Introduction to Political Analysis</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>STAT:1010</td>
<td>Statistics and Society</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>STAT:1020</td>
<td>Statistics for Business</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>STAT:2010</td>
<td>Statistical Methods and Computing</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

### Social Sciences

Courses in the Social Sciences area focus on human behavior and the institutions and social systems that shape and are shaped by that behavior. Courses provide an overview of one or more social science disciplines, their theories, and their methods.

All students must complete at least 3 s.h. of course work in the Social Sciences area. The following courses are approved for the area.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AFAM:1030</td>
<td>Introduction to African American Society</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ANTH:1101</td>
<td>Cultural Anthropology</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ANTH:1401</td>
<td>Language, Culture, and Communication</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ANTH:2100</td>
<td>Anthropology and Contemporary World Problems</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ANTH:2136</td>
<td>Urban Anthropology</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ANTH:2261</td>
<td>Human Impacts on the Environment</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ASP:1800</td>
<td>Basic Aspects of Aging</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>COMM:1170</td>
<td>Communication Theory in Everyday Life</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>COMM:1174</td>
<td>Media and Society</td>
<td>3 s.h.</td>
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<tr>
<td>CSD:3117</td>
<td>Psychology of Language</td>
<td>3 s.h.</td>
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<td>CSD:3118</td>
<td>Language Acquisition</td>
<td>1-3 s.h.</td>
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<tr>
<td>ECON:1100</td>
<td>Principles of Microeconomics</td>
<td>4 s.h.</td>
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<td>ECON:1200</td>
<td>Principles of Macroeconomics</td>
<td>4 s.h.</td>
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<tr>
<td>GEOG:1010</td>
<td>Introduction to Human Geography</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>GEOG:1070</td>
<td>Contemporary Environmental Issues</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>GEOG:1070</td>
<td>Globalization and Geographic Diversity</td>
<td>3 s.h.</td>
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<td>GEOG:2110</td>
<td>Population Geography: Societies in Flux</td>
<td>3 s.h.</td>
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<tr>
<td>GEOG:2404</td>
<td>African Development</td>
<td>3 s.h.</td>
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<tr>
<td>GEOG:2910</td>
<td>The Global Economy</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>HIST:1119</td>
<td>Policy Matters: Perspectives on Contemporary Problems</td>
<td>3 s.h.</td>
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<tr>
<td>HONR:1660</td>
<td>Honors Seminar in Social Sciences</td>
<td>3 s.h.</td>
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<tr>
<td>JMC:1100</td>
<td>Media Uses and Effects</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>LING:1010</td>
<td>Language and Society</td>
<td>3 s.h.</td>
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<tr>
<td>LING:1060</td>
<td>Languages of the World</td>
<td>3 s.h.</td>
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<tr>
<td>MPH:2099</td>
<td>Fundamentals of Public Health (effective spring 2015)</td>
<td>3 s.h.</td>
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<tr>
<td>MUSM:3001/</td>
<td>Introduction to Museum Studies</td>
<td>3 s.h.</td>
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<tr>
<td>ANTH:3001/</td>
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<td></td>
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<tr>
<td>EDTL:3001/</td>
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<tr>
<td>SIED:3001</td>
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<tr>
<td>POLI:1100</td>
<td>Introduction to American Politics</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>POLI:1200</td>
<td>Introduction to Political Behavior</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>POLI:1300</td>
<td>Introduction to Political Thought and Action</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>POLI:1400</td>
<td>Introduction to Comparative Politics</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>POLI:1401</td>
<td>Introduction to the Politics of Russia and Eurasia</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>POLI:1403</td>
<td>Introduction to Politics in the Muslim World</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>POLI:1500</td>
<td>Introduction to International Relations</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>POLI:1501</td>
<td>Introduction to American Foreign Policy</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>POLI:1600</td>
<td>Introduction to Political Communication</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>POLI:2415</td>
<td>Latin American Politics</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>POLI:3412</td>
<td>Government and Politics of Europe</td>
<td>3 s.h.</td>
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<tr>
<td>POLI:3413</td>
<td>Russian Politics</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>POLI:3414/</td>
<td>Government and Politics of the Far East</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ASIA:3414</td>
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<td></td>
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<tr>
<td>PSY:1001</td>
<td>Elementary Psychology</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>PSY:2301</td>
<td>Introduction to Clinical Psychology</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>PSY:2401</td>
<td>Introduction to Developmental Science</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>PSY:2601</td>
<td>Introduction to Cognitive Psychology</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>SOC:1010</td>
<td>Introduction to Sociology</td>
<td>3-4 s.h.</td>
</tr>
<tr>
<td>SOC:1020</td>
<td>Social Problems</td>
<td>3-4 s.h.</td>
</tr>
<tr>
<td>SOC:1410</td>
<td>Introduction to Criminology</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>SOC:2220</td>
<td>Principles of Social Psychology</td>
<td>3-4 s.h.</td>
</tr>
<tr>
<td>TR:1070</td>
<td>Perspectives on Leisure and Play</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

### Culture, Society, and the Arts

Courses in the Historical Perspectives area help students comprehend the historical processes of change and continuity; develop the ability to generalize, explain, and interpret historical change; and understand the past in its own terms.

All students must complete at least 3 s.h. of course work in the Historical Perspectives area. The following courses are approved for the area.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH:1201</td>
<td>Introduction to Prehistory</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ARTH:1010</td>
<td>Art and Visual Culture</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ARTH:1050</td>
<td>From Cave Paintings to Cathedrals: Survey of Western Art I</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ARTH:1060</td>
<td>From Mona Lisa to Modernism: Survey of Western Art II</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ARTH:1070/</td>
<td>ASIAN:1070/CHIN:1070 Asian Art and Culture</td>
<td>3 s.h.</td>
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<tr>
<td>ARTH:2920</td>
<td>Introduction to American Art</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>CLSA:1181/</td>
<td>GHS:1181/Antient Medicine</td>
<td>3 s.h.</td>
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<tr>
<td>CLSA:1830</td>
<td>Greek Civilization</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>CLSA:1840</td>
<td>Roman Civilization</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>
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EES:1115/ENVS:1115/GEOG:1115/HIST:1115 3 s.h.
Energy and Society: History and Science of Oil (effective summer 2015)

FREN:3110 French Civilization 3 s.h.
FREN:3120 French Civilization 3 s.h.

HIST:1002 Issues in Medieval Society 3 s.h.
HIST:1004 Issues in Human History: Communities and Society in History 3 s.h.
HIST:1006 Issues: Nature and Society in Historical Perspective 3 s.h.
HIST:1008 Issues in European Politics and Society 3 s.h.

HIST:1010 Issues in Human History: Gender in Historical Perspective 3 s.h.
HIST:1012 Issues in Human History: Europe's Expansion Overseas 3 s.h.
HIST:1014 Issues: Twentieth-Century Crisis 3 s.h.
HIST:3016 Issues in Human History: The Vietnam War in Historical Perspective 3 s.h.

HIST:2401 Western Civilization I 3-4 s.h.
HIST:2402 Western Civilization II 4 s.h.
HIST:2403 Western Civilization III 3-4 s.h.
HIST:2461/CLSA:2461/RELS:2361 Middle East and Mediterranean: Alexander to Suleiman 3 s.h.

HIST:2602/ASIA:2602 Civilizations of Asia: China 3 s.h.
HIST:2604/ASIA:2604 Civilizations of Asia: Japan 3 s.h.
HIST:2606/ASIA:2606 Civilizations of Asia: South Asia 3-4 s.h.
HIST:2607 Civilizations of Asia: Korea (effective spring 2015) 3-4 s.h.
HIST:3410/MDVL:3410 Medieval Civilization II 3 s.h.
HIST:4411/MDVL:4411 Economic and Social History of Medieval Europe 3 s.h.
HIST:4412/MDVL:4412 History of the Medieval Church 3 s.h.

HIST:4710/AFAM:4310 Pre-Colonial African History 3 s.h.
HONR:1610 Honors Seminar in Historical Perspectives 3 s.h.

ITAL:2550 Images of Modern Italy 3-4 s.h.
JMC:1200 Media History and Culture 3 s.h.
MUS:2301 History of Music I 3 s.h.
MUS:2302 History of Music II 3 s.h.
PHIL:1033 The Meaning of Life 3 s.h.
PHIL:1034 Liberty and the Pursuit of Happiness 3 s.h.
RELS:1001 The Judeo-Christian Tradition 3 s.h.
RELS:1225/HIST:1425 Medieval Religion and Culture 3 s.h.
RELS:1250/HIST:1450 Modern Religion and Culture 3 s.h.
SLAV:1531 Slavic Folklore 3 s.h.
SLAV:1532 Religion and Culture of Slavs 3 s.h.
THTR:1400 Theatre and Society: Ancients and Moderns 3 s.h.

THTR:1401 Theatre and Society: Romantics and Rebels 3 s.h.
THTR:2410 History of Theatre and Drama I 3 s.h.
THTR:2411 History of Theatre and Drama II 3 s.h.

International and Global Issues

Courses in the International and Global Issues area focus predominantly on countries or issues outside the United States, encouraging students to understand contemporary issues from an international perspective. Students develop knowledge of one or more contemporary global or international issues, gain a greater awareness of varied international perspectives, and improve their skills of analysis and critical inquiry.

All students must complete at least 3 s.h. of course work in the International and Global Issues area. The following courses are approved for the area.

ANTH:2100 Anthropology and Contemporary World Problems 3 s.h.
ANTH:2110 Latin American Economy and Society 3 s.h.
ANTH:2136 Urban Anthropology 3 s.h.
ANTH:2261 Human Impacts on the Environment 3 s.h.
ARTH:1040 Arts of Africa 3 s.h.
FREN:1510 Cultural Misunderstandings: France and U.S.A. 3 s.h.
GEOG:1060 Geography of Asia: From Japan to Pakistan 3 s.h.
GEOG:1070 Contemporary Environmental Issues 3 s.h.
GEOG:1090 Globalization and Geographic Diversity 3 s.h.
GEOG:2404 African Development 3 s.h.
GEOG:2910 The Global Economy 3 s.h.
GRMN:2720/HIST:2420 Germany in the World 3 s.h.
GRMN:4315 Contemporary German Civilization 3 s.h.
HIST:1016 Issues in Human History: The Vietnam War in Historical Perspective 3 s.h.
HIST:2403 Western Civilization III 3-4 s.h.
HIST:2602/ASIA:2602 Civilizations of Asia: China 3 s.h.
HIST:2604/ASIA:2604 Civilizations of Asia: Japan 3 s.h.
HIST:2606/ASIA:2606 Civilizations of Asia: South Asia 3-4 s.h.
HIST:2607 Civilizations of Asia: Korea (effective spring 2015) 3-4 s.h.
HIST:3410/MDVL:3410 Medieval Civilization II 3 s.h.
HIST:4411/MDVL:4411 Economic and Social History of Medieval Europe 3 s.h.
HIST:4412/MDVL:4412 History of the Medieval Church 3 s.h.
HIST:4710/AFAM:4310 Pre-Colonial African History 3 s.h.
HONR:1610 Honors Seminar in Historical Perspectives 3 s.h.

LING:1040/ANTH:1040 Language Rights 3 s.h.
POLI:1400 Introduction to Comparative Politics 3 s.h.
### Literary, Visual, and Performing Arts

Courses in the Literary, Visual, and Performing Arts area provide students with opportunities to appreciate the arts and to analyze them within their historical and theoretical contexts. They also help students develop the analytic, expressive, and imaginative abilities necessary for understanding, appreciating, and creating art.

All students must complete at least 3 s.h. of course work in the Literary, Visual, and Performing Arts area. The following courses are approved for the area.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARTH:1010</td>
<td>Art and Visual Culture</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ARTH:1020</td>
<td>Masterpieces: Art in Historical and Cultural Perspectives</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ARTH:1040</td>
<td>Arts of Africa</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ARTH:1050</td>
<td>From Cave Paintings to Cathedrals: Survey of Western Art I</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ARTH:1060</td>
<td>From Mona Lisa to Modernism: Survey of Western Art II</td>
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THTR:1010 Art of the Theatre 3 s.h.
THTR:1140 Basic Acting 3 s.h.
THTR:1400 Theatre and Society: Ancients and Moderns 3 s.h.
THTR:1401 Theatre and Society: Romantics and Rebels 3 s.h.
THTR:1412/DANC:1412/DPA:1412 The Arts in Performance 3 s.h.
THTR:2301 Playwriting I 3 s.h.
THTR:2410 History of Theatre and Drama I 3 s.h.
THTR:2411 History of Theatre and Drama II 3 s.h.

**Values, Society, and Diversity**

Courses in the Values, Society, and Diversity area explore fundamental questions about the human experience from a variety of perspectives. Students consider topics in relation to their own values and actions. They gain a deeper appreciation of how cultural differences arise and of the importance of diversity.

All students must complete at least 3 s.h. of course work in the Values, Society, and Diversity area. The following courses are approved for the area.

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Geographical and Sustainability Sciences

Chair
- David A. Bennett

Director, undergraduate studies
- Marc Linderman

Director, graduate studies
- Eric Tate

Undergraduate major: geography (B.A., B.S.)
Undergraduate minors: geographic information science; geography
Graduate degrees: M.A. in geography; Ph.D. in geography
Faculty: http://clas.uiowa.edu/geography/people/faculty
Web site: http://clas.uiowa.edu/geography/

Geographical and sustainability sciences are concerned with place, environment, and the ongoing processes of change within and between social and physical systems. Geographical and sustainability sciences' importance to scholarly inquiry is rooted in the complexity of social and environmental problems. Three concepts at the core of the disciplines—space, place, and scale—provide theoretical constructs and methodological tools for sciences that investigate the complex character of social and environmental phenomena.

Geographical and sustainability scientists examine issues such as distribution and consumption of natural resources, air and water quality, climate changes and ecosystem dynamics, growth and development of urban areas, population dynamics, politics and practice of international development, and social justice. They view society and the environment as a physical/social/cultural system. They apply uniquely geographical and sustainability perspectives and tools, as well as knowledge from other social and scientific disciplines, to analyze the emergent properties of these systems.

Department of Geographical and Sustainability Sciences graduates find employment opportunities in government, nongovernmental organizations, and business. For example, many geographical and sustainability scientists are employed in resource management, urban and regional development, public health, and market area analysis. They analyze problems in the distribution and interactions among physical, ecological, social, and political systems.

Geographical and sustainability sciences students acquire skills in computer-based cartography and geographic information systems (GIS) software used to investigate and solve many environmental and social problems. Opportunities for graduates with GIS training are growing rapidly in both private and governmental organizations.

The geographical and sustainability sciences faculty has developed an undergraduate instructional program that serves students majoring or minoring in geography as well as students in other disciplines. Courses in geography are commonly required for students preparing to teach at the elementary and secondary school levels and for those who want to pursue careers in urban and regional planning. They also provide a background for many related professions, including law, health care, environmental or transportation engineering, and international business.

Geographical and sustainability sciences students use the University's Geographical Information Systems Instructional Lab (GISIL) for GIS instruction and research. The lab is located in the department; see "Facilities and Resources" later in this Catalog section.

The Department of Geographical and Sustainability Sciences participates in a number of University of Iowa interdisciplinary programs that have international, area studies, urban, or environmental components, including an interdisciplinary undergraduate major, which it administers; see Environmental Policy and Planning (p. 275) in the Catalog. The Department of Geographical and Sustainability collaborates with other departments to offer the Certificates in Social Science Analytics (p. 571) and in Wind Energy (p. 915). It also participates in the University's internship program for students; see "Internships" later in this Catalog section.

Undergraduate Programs of Study
- Major in geography (Bachelor of Arts, Bachelor of Science)
- Minor in geographic information science
- Minor in geography

Bachelor of Arts, Bachelor of Science

The Bachelor of Arts with a major in geography requires a minimum of 120 s.h., including at least 38-43 s.h. of work for the major. The Bachelor of Science with a major in geography requires a minimum of 120 s.h., including at least 44-50 s.h. of work for the major. Credit required for the major depends on the student's choice of track. Students must maintain a g.p.a. of at least 2.00 in all courses for the major and in all UI courses for the major. They also must complete the College of Liberal Arts and Sciences General Education Program (p. 313). Transfer students majoring in geography must earn a minimum of 15 s.h. for the major in residence at the University of Iowa.

Students majoring in geography may not earn the minor in geographic information science.

The major in geography (either B.A. or B.S.) is appropriate preparation for advanced training or careers in geographical and sustainability sciences. Students with strong interest in quantitative analysis and model building should pursue the Bachelor of Science and are encouraged to master an appropriate computer programming language.

Students choose one of three tracks in the major: environmental studies, geographic information science (GISci), or health and society. All students majoring in geography complete a common set of foundation courses in addition to the requirements for their choice of track.

Bachelor of Science students take additional mathematics course work.

Consistent with the College of Liberal Arts and Sciences maximum semester hours rule, students may count a maximum of 56 s.h. earned in their major department toward graduation.
The major in geography requires the following work.

**Common Requirements (B.A. and B.S.)**

All geography majors must complete the following courses. Students may not use a course to fulfill more than one major requirement.

One of these:

- GEOG:1010 Introduction to Human Geography 3 s.h.
- GEOG:1090 Globalization and Geographic Diversity 3 s.h.

All of these:

- GEOG:1020 The Global Environment 3 s.h.
- GEOG:1021 The Global Environment Lab 1 s.h.
- GEOG:1050 Foundations of GIS 3 s.h.

One of these, in addition to any course required to fulfill a track requirement:

- GEOG:1060 Geography of Asia: From Japan to Pakistan 3 s.h.
- GEOG:1070 Contemporary Environmental Issues 3 s.h.
- GEOG:1090 Globalization and Geographic Diversity (if not chosen above) 3 s.h.
- GEOG:2110 Population Geography: Societies in Flux 3 s.h.
- GEOG:2130 World Cities 3 s.h.
- GEOG:2910 The Global Economy 3 s.h.
- GEOG:2950 Environmental Conservation 3 s.h.

One of these (not required for GISci track students):

- GEOG:1060 Geography of Asia: From Japan to Pakistan 3 s.h.
- GEOG:1070 Contemporary Environmental Issues 3 s.h.
- GEOG:1090 Globalization and Geographic Diversity (if not chosen above) 3 s.h.
- GEOG:2110 Population Geography: Societies in Flux 3 s.h.
- GEOG:2130 World Cities 3 s.h.
- GEOG:2910 The Global Economy 3 s.h.
- GEOG:2950 Environmental Conservation 3 s.h.

One of these (required for GISci track students):

- GEOG:3340 Ecosystem Services: Human Dependence on Natural Systems 3 s.h.
- GEOG:3500 Introduction to Environmental Remote Sensing 3 s.h.
- GEOG:3520 GIS for Environmental Studies 3 s.h.
- GEOG:3540 Introduction to Geographic Visualization 3 s.h.
- GEOG:3560 Spatial Analyses of Wind Energy (LIDAR): Principles and Applications 3 s.h.
- GEOG:3570 Light Detection and Ranging (LIDAR): Principles and Applications 3 s.h.
- GEOG:4010 Field Methods in Physical Geography 3 s.h.
- GEOG:4020 Field Methods: Mapping and Mobile Computing 3 s.h.
- GEOG:4150 Health and Environment: GIS Applications 3 s.h.
- GEOG:4650 Simulation in Environmental Geography 3 s.h.
- GEOG:5129 Information Systems for Resource Management 3 s.h.

One of these:

- GEOG:4030 Senior Project Seminar 3 s.h.
- GEOG:4995 Honors Thesis (must enroll for 3 s.h.) arr.

Senior Project Seminar [GEOG:4030] is offered only in spring semesters. Students who choose GEOG:4995 Honors Thesis must make arrangements with a faculty advisor.

One of these (at least 1 s.h. required):  

- GEOS:3400 Iowa Environmental Policy in Practice 3 s.h.
- GEOS:3992 Undergraduate Research (including through ICIGO or independent research) arr.
- CCP:1201 Academic Internship 1-3 s.h.

The Department of Geographical and Sustainability Sciences is a participant in the University's internship program, which provides opportunities for both undergraduate and graduate students to participate in paid and unpaid activities related to their academic programs. The Pomerantz Career Center works with students to develop appropriate internships.

**STATISTICS COURSES (B.A.)**

Bachelor of Arts students must earn a minimum of 3 s.h. in statistics by completing one of the following courses or a statistics course equivalent to or numbered above one of these.

- GEOS:1065 Introduction to Spatial Analysis: Patterns and Processes 3 s.h.
- PSQF:4143/STAT:4143 Introduction to Statistical Methods 3 s.h.
- STAT:1020/PSQF:1020 Elementary Statistics and Inference 3 s.h.
- STAT:1030 Elementary Statistics for Business 4 s.h.
- STAT:2010 Statistical Methods and Computing 3 s.h.
- STAT:2020 Probability and Statistics for the Engineering and Physical Sciences 3 s.h.
- STAT:3510 Biostatistics 3 s.h.

**STATISTICS/MATHEMATICS COURSES (B.S.)**

Bachelor of Science students must earn a minimum of 9 s.h. in statistics/mathematics by completing one of the following options or courses equivalent to or numbered above these.

**Option 1**

This sequence:

- PSQF:4143/STAT:4143 Introduction to Statistical Methods 3 s.h.
- PSQF:6243/STAT:6513 Intermediate Statistical Methods 4 s.h.

Or this sequence:

- BIOS:5110 Introduction to Biostatistics 3 s.h.
- BIOS:5120 Design and Analysis of Biomedical Studies 3 s.h.

Or this sequence:

- STAT:2010 Statistical Methods and Computing 3 s.h.
- STAT:3200 Applied Linear Regression 3 s.h.

And one of these:

- EES:4870 Applied Geostatistics 3 s.h.
- MATH:1380 Calculus and Matrix Algebra for Business 4 s.h.
- MATH:1460 Calculus for the Biological Sciences 4 s.h.
MATH:1550 Engineering Mathematics I: Single Variable Calculus 4 s.h.
MATH:1850 Calculus I 4 s.h.

Option 2
One of these:
PSQF:4143/STAT:4143 Introduction to Statistical Methods 3 s.h.
STAT:2010 Statistical Methods and Computing 3 s.h.
And one of these sequences:
MATH:1440 & MATH:1460 Mathematics for the Biological Sciences - Calculus for the Biological Sciences 8 s.h.
MATH:1850 & MATH:1860 Calculus I-II 8 s.h.

Tracks (B.A. and B.S.)
All geography majors must complete one of the three tracks described below: environmental studies, geographic information science (GISci), or health and society. Students should pay close attention to prerequisites for the upper-level courses in each track in order to develop a study plan that allows them to complete their major in a timely way.

Students in the environmental studies track and sustainability sciences courses.

Students choose a total of four upper-level courses (at least 12 s.h.) from the following lists, in consultation with their advisors. Those who wish to gain additional experience in theory and application of GIS systems should take GEOG:3520 GIS for Environmental Studies and GEOG:4520 GIS for Environmental Studies: Applications, or they should earn 6 s.h. in other GIS-based geographical and sustainability sciences courses.

At least one of these:
GEOG:2310 Introduction to Climatology 3 s.h.
GEOG:2374 Biogeography 3 s.h.
GEOG:2410 Environment and Development 3 s.h.
GEOG:2930 Water Resources 3 s.h.
GEOG:3500 Introduction to Environmental Remote Sensing 3 s.h.
GEOG:3520 GIS for Environmental Studies 3 s.h.

At least one of these:
GEOG:3210 Health, Work, and the Environment 3 s.h.
GEOG:3310 Landscape Ecology 3 s.h.
GEOG:3320 Wetlands: Function, Geography, and Management 3 s.h.
GEOG:3340 Ecosystem Services: Human Dependence on Natural Systems 3 s.h.
GEOG:3350 Urban Ecology 3 s.h.
GEOG:3400 Iowa Environmental Policy in Practice 3 s.h.
GEOG:3560 Spatial Analyses of Wind Energy 3 s.h.
GEOG:3750 Environmental Quality: Science, Technology, and Policy 3 s.h.
GEOG:3760 Hazards and Society 3 s.h.
GEOG:3920 Planning Livable Cities 3 s.h.
GEOG:4010 Field Methods in Physical Geography 3 s.h.
GEOG:4500 Applications in Environmental Remote Sensing 4 s.h.
GEOG:4520 GIS for Environmental Studies: Applications 3 s.h.
GEOG:4650 Simulation in Environmental Geography 3 s.h.
GEOG:4750 Environmental Impact Analysis 4 s.h.
GEOG:4770 Environmental Justice 3 s.h.

ENVIRONMENTAL STUDIES TRACK
The environmental studies track requires a minimum of 15 s.h. It is designed for students interested in the interrelationships among social and natural processes that affect the environment. The track prepares students for careers or pursuit of personal interests in resource management, landscape ecology, water resources, environmental policy or law, global environmental change, sustainable development, or other complex environmental issues. Graduates may find employment in an environmental profession such as conservation, environmental planning and regulation; or environmental law, policy, and politics.

The environmental studies track offers training in field observation, remote sensing, geographical information systems, quantitative analysis/computing, and cartographic representation. It also provides a sound foundation for graduate or professional-level studies in the natural or social aspects of the environment.

In addition to satisfying the common requirements for all geography majors, students in the environmental studies track complete a common track course (3 s.h.) and at least 12 s.h. of upper-level geographical and sustainability sciences courses.

Common course—all environmental studies track students take this:

GEOG:1070 Contemporary Environmental Issues 3 s.h.

Students choose a total of four upper-level courses (at least 12 s.h.) from the following lists, in consultation with their advisors. Those who wish to gain additional experience in theory and application of GIS systems should take GEOG:3520 GIS for Environmental Studies and GEOG:4520 GIS for Environmental Studies: Applications, or they should earn 6 s.h. in other GIS-based geographical and sustainability sciences courses.

At least one of these:
GEOG:2310 Introduction to Climatology 3 s.h.
GEOG:2374 Biogeography 3 s.h.
GEOG:2410 Environment and Development 3 s.h.
GEOG:2930 Water Resources 3 s.h.
GEOG:3500 Introduction to Environmental Remote Sensing 3 s.h.
GEOG:3520 GIS for Environmental Studies 3 s.h.

At least one of these:
GEOG:3210 Health, Work, and the Environment 3 s.h.
GEOG:3310 Landscape Ecology 3 s.h.
GEOG:3320 Wetlands: Function, Geography, and Management 3 s.h.
GEOG:3340 Ecosystem Services: Human Dependence on Natural Systems 3 s.h.
GEOG:3350 Urban Ecology 3 s.h.
GEOG:3400 Iowa Environmental Policy in Practice 3 s.h.
GEOG:3560 Spatial Analyses of Wind Energy 3 s.h.
GEOG:3750 Environmental Quality: Science, Technology, and Policy 3 s.h.
GEOG:3760 Hazards and Society 3 s.h.
GEOG:3920 Planning Livable Cities 3 s.h.
GEOG:4010 Field Methods in Physical Geography 3 s.h.
GEOG:4500 Applications in Environmental Remote Sensing 4 s.h.
GEOG:4520 GIS for Environmental Studies: Applications 3 s.h.
GEOG:4650 Simulation in Environmental Geography 3 s.h.
GEOG:4750 Environmental Impact Analysis 4 s.h.
GEOG:4770 Environmental Justice 3 s.h.

GEORGIC INFORMATION SCIENCE TRACK
The geographic information science track (GISci) requires a minimum of 18-19 s.h. It is designed for students preparing for positions in government agencies, nongovernment organizations, international development agencies, and business. It also provides preparation for graduate study in geography, planning, and other disciplines. The track focuses on the design, implementation, and use of geographic information systems. Courses address how geographic data are acquired, stored, accessed, displayed, managed, and analyzed.

Students in the geographic information science track learn to address problems involved in modeling environmental systems, identifying the best locations for service facilities,
assessing environmental impacts, and forecasting the populations of small areas. They use the department’s Geographical Information Systems Instructional Lab (GISIL) extensively to develop expertise in using GIS software.

Course work in the track covers methods of spatial analysis and geographical modeling and involves database management and computer programming.

In addition to the common requirements for all geography majors, students in the geographic information science track complete a common track course (3-4 s.h.) and at least 15 s.h. of upper-level geographical and sustainability sciences courses.

Common course—all GISci track students take one of these:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>S.H.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS:1110</td>
<td>Introduction to Computer Science</td>
<td>3</td>
</tr>
<tr>
<td>CS:1210</td>
<td>Computer Science I: Fundamentals</td>
<td>4</td>
</tr>
<tr>
<td>CS:2110</td>
<td>Programming for Informatics</td>
<td>4</td>
</tr>
</tbody>
</table>

Students choose a total of five upper-level courses (at least 15 s.h.) from the following lists in consultation with their advisors (at least one course from each list). GISci track students are encouraged to add breadth to their degree by taking additional upper-level courses in the department. Students interested in the application of GIS to environmental issues should select additional courses from the department’s environmental studies area; those interested in health or other socioeconomic issues should select additional courses from the department’s health and society area.

At least one of these:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>S.H.</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOG:3500</td>
<td>Introduction to Environmental Remote Sensing</td>
<td>3</td>
</tr>
<tr>
<td>GEOG:3520</td>
<td>GIS for Environmental Studies</td>
<td>3</td>
</tr>
<tr>
<td>GEOG:3530</td>
<td>Mapping American Cities and Regions</td>
<td>3</td>
</tr>
<tr>
<td>GEOG:3540</td>
<td>Introduction to Geographic Visualization</td>
<td>3</td>
</tr>
<tr>
<td>GEOG:4650</td>
<td>Simulation in Environmental Geography</td>
<td>3</td>
</tr>
</tbody>
</table>

At least one of these:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>S.H.</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOG:4500</td>
<td>Applications in Environmental Remote Sensing</td>
<td>4</td>
</tr>
<tr>
<td>GEOG:4520</td>
<td>GIS for Environmental Studies: Applications</td>
<td>3</td>
</tr>
<tr>
<td>GEOG:4570</td>
<td>Spatial Analysis and Location Models</td>
<td>3</td>
</tr>
<tr>
<td>GEOG:4580</td>
<td>Introduction to Geographic Databases</td>
<td>3</td>
</tr>
</tbody>
</table>

At least one of these:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>S.H.</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOG:3340</td>
<td>Ecosystem Services: Human Dependence on Natural Systems</td>
<td>3</td>
</tr>
<tr>
<td>GEOG:3560</td>
<td>Spatial Analyses of Wind Energy</td>
<td>3</td>
</tr>
<tr>
<td>GEOG:3760</td>
<td>Hazards and Society</td>
<td>3</td>
</tr>
<tr>
<td>GEOG:4010</td>
<td>Field Methods in Physical Geography</td>
<td>3</td>
</tr>
<tr>
<td>GEOG:4020</td>
<td>Field Methods: Mapping and Mobile Computing</td>
<td>3</td>
</tr>
<tr>
<td>GEOG:4150</td>
<td>Health and Environment: GIS Applications</td>
<td>3</td>
</tr>
</tbody>
</table>

HEALTH AND SOCIETY TRACK

The health and society track requires a minimum of 15 s.h. It is designed for students interested in understanding the causes and consequences of social inequalities, the long-term effects that changing human/environmental interactions have on human health, and emerging transnational challenges to the sustainability of livelihoods. The track provides students with foundational knowledge and skills to support postgraduate employment in governmental or nongovernmental positions, graduate study in public health or in health-related fields, and service experiences such as the Peace Corps and AmeriCorps.

Students in the health and society track gain understanding of the factors and processes that determine geographic patterns of health. They explore the effects of the social, built, and natural environments on the physical, social, and mental health of populations. Course work in the track examines patterns and causes of infectious and chronic diseases; hazards, vulnerability, and environmental justice; and the spatial methods used to understand such issues.

Thematic content from courses is complemented by quantitative spatial and statistical analysis course work, enabling students to analyze and understand geographic patterns of health. Students have opportunities to work on applied problems, such as assessing patterns of disease, identifying the underlying population and environmental drivers of good or poor health, and evaluating the social dimensions of environmental impacts.

In addition to satisfying the common requirements for all geography majors, students in the health and society track complete three common track courses (9 s.h.) and at least two upper-level geographical and sustainability sciences courses (6 s.h.).

Common courses—all health and society track students take these:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>S.H.</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOG:2110</td>
<td>Population Geography: Societies in Flux</td>
<td>3</td>
</tr>
<tr>
<td>GEOG:3110</td>
<td>Geography of Health</td>
<td>3</td>
</tr>
<tr>
<td>GEOG:4150</td>
<td>Health and Environment: GIS Applications</td>
<td>3</td>
</tr>
</tbody>
</table>

Students choose two upper-level courses (at least 6 s.h.) from the following list, in consultation with their advisors. Those who wish to gain additional experience in theory and application of GIS systems should also take an additional 6 s.h. in GIS-based geographical and sustainability sciences courses.

At least two of these:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>S.H.</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOG:3070</td>
<td>Hungry Planet: Global Geographies of Food</td>
<td>3</td>
</tr>
<tr>
<td>GEOG:3210</td>
<td>Health, Work, and the Environment</td>
<td>3</td>
</tr>
<tr>
<td>GEOG:3760</td>
<td>Hazards and Society</td>
<td>3</td>
</tr>
<tr>
<td>GEOG:3920</td>
<td>Planning Livable Cities</td>
<td>3</td>
</tr>
<tr>
<td>GEOG:4770</td>
<td>Environmental Justice</td>
<td>3</td>
</tr>
</tbody>
</table>

B.A. or B.S. with Teacher Licensure

Geography majors interested in earning licensure to teach in elementary and/or secondary schools must complete
the College of Education's Teacher Education Program (TEP) in addition to the requirements for the major and all requirements for graduation. The TEP requires several College of Education courses and student teaching. Contact the Office of Education Services for details.

Students must satisfy all degree requirements and complete Teacher Education Program licensure before degree conferral.

**Four-Year Graduation Plan**

The following checkpoints list the minimum requirements students must complete by certain semesters in order to stay on the University's Four-Year Graduation Plan. (Courses in the major are those required to complete the major; they may be offered by departments other than the major department.)

**Bachelor of Arts**

*Before the third semester begins:* one introductory course in the major

*Before the fifth semester begins:* five courses in the major

*Before the seventh semester begins:* 11 courses in the major and at least 90 s.h. earned toward the degree

*Before the eighth semester begins:* 14 courses in the major

*During the eighth semester:* enrollment in all remaining course work in the major, all remaining General Education courses, and a sufficient number of semester hours to graduate

**Bachelor of Science**

*Before the third semester begins:* two introductory courses in the major

*Before the fifth semester begins:* six courses in the major

*Before the seventh semester begins:* 12 courses in the major and at least 90 s.h. earned toward the degree

*Before the eighth semester begins:* 15 courses in the major

*During the eighth semester:* enrollment in all remaining course work in the major, all remaining General Education courses, and a sufficient number of semester hours to graduate

**Honors in the Major**

Students majoring in geography have the opportunity to graduate with honors in the major. Departmental honors students must maintain a cumulative University of Iowa g.p.a. of at least 3.33 and a g.p.a. of at least 3.33 in all work for the major. They must be admitted to the department's honors program by the first semester of their senior year or earlier.

Honors students in geography pursue study beyond the typical undergraduate level. In order to graduate with honors in the major, they work under the direction of a faculty member to conduct original research and then prepare and present an honors thesis based on their research. The thesis is reviewed by a committee of at least three faculty members. Departmental honors students earn credit for their thesis by registering for GEOG:4995 Honors Thesis. They may substitute GEOG:4030 Senior Project Seminar for GEOG:4995, as long as they continue to work on the thesis under the direction of a faculty member.

In addition to honors in their majors, undergraduate students have a variety of opportunities for honors study and activities through membership in the University of Iowa Honors Program; visit Honors at Iowa to learn about the University's honors program.

**Minor: Geographic Information Science**

The minor in geographic information science requires a minimum of 15 s.h. in geographical and sustainability sciences courses, including 12 s.h. in University of Iowa courses numbered 3000 or above. Students must maintain a g.p.a. of at least 2.00 in all courses for the minor and in all UI courses for the minor. Course work in the minor may not be taken pass/nonpass.

Students majoring in geography may not earn the minor in geographic information science.

Geographic Information Science is the study of geography using digital technology. The field uses geographic information systems (computer-based technologies designed to facilitate the capture, organization, analysis, and display of geographic data), remote sensing (primarily interpretation of satellite imagery), and spatial modeling (viewing, analyzing, and mapping spatial data) to study geographic patterns and processes and to examine research on the nature, development, and use of these tools.

The minor in geographic information science requires one core course, three mid-level specialization courses, and an advanced course that builds on one of the three mid-level courses. Students should contact the department secretary to request an advisor for help in selecting the advanced course.

Core course—one of these:

- GEOG:1050 Foundations of GIS 3 s.h.
- GEOG:3010 Geographic Information Systems and Science 3 s.h.

Mid-level specialization courses—all of these:

- GEOG:3500 Introduction to Environmental Remote Sensing 3 s.h.
- GEOG:3520 GIS for Environmental Studies 3 s.h.
- GEOG:3540 Introduction to Geographic Visualization 3 s.h.

Advanced course—one of these:

- GEOG:3570 Light Detection and Ranging (LiDAR): Principles and Applications 3 s.h.
- GEOG:4020 Field Methods: Mapping and Mobile Computing 3 s.h.
- GEOG:4150 Health and Environment: GIS Applications 3 s.h.
- GEOG:4500 Applications in Environmental Remote Sensing 4 s.h.
- GEOG:4520 GIS for Environmental Studies: Applications 3 s.h.
- GEOG:4570 Spatial Analysis and Location Models 3 s.h.
GEOG:4580 Introduction to Geographic Databases 3 s.h.
GEOG:4650 Simulation in Environmental Geography 3 s.h.

Minor: Geography
The minor in geography requires a minimum of 15 s.h. in geographical and sustainability sciences courses, including 12 s.h. in University of Iowa courses numbered 3000 or above. Students must maintain a g.p.a. of at least 2.00 in all courses for the minor and in all UI courses for the minor. Course work in the minor may not be taken pass/nonpass. Students are encouraged to concentrate their course work in tracks—environmental studies, geographic information science, or health and society (see "Bachelor of Arts, Bachelor of Science" above). For help in selecting courses, students should contact the department secretary to request an advisor for the minor.

Courses for General Education
The Department of Geographical and Sustainability Sciences offers a number of courses that students in other majors may use to satisfy requirements of College of Liberal Arts and Sciences General Education Program. Look for courses with the prefix GEOG under "Natural Sciences," "Social Sciences," and "International and Global Issues" in the General Education Program (p. 313) section of the Catalog.

Nonmajors also may choose geographical and sustainability sciences courses as electives.

Certificate in Social Science Analytics
The Department of Geographical and Sustainability Sciences collaborates with the Departments of Political Science (p. 520), Sociology (p. 585), and Statistics and Actuarial Science (p. 613) to offer the undergraduate program in social science analytics; see Social Science Analytics (p. 571) in the Catalog.

Certificate in Wind Energy
The Department of Geographical and Sustainability Sciences (College of Liberal Arts and Sciences) and the Department of Mechanical and Industrial Engineering (College of Engineering) administer the undergraduate certificate program in wind energy; see Wind Energy (p. 915) (College of Engineering) in the Catalog.

Graduate Programs of Study
- Master of Arts in geography
- Doctor of Philosophy in geography

In addition to offering graduate degree programs, the department administers the geoinformatics subprogram of the graduate Certificate in Informatics; see Informatics (p. 942) (Graduate College) in the Catalog.

Department of Geographical and Sustainability Sciences graduate programs focus on investigating the environmental consequences of human decisions on local, regional, and global scales. Central to the department's studies are geographic information science and the theories and models of environmental and social sciences. Within this broad domain, the department is developing strengths in environmental justice, environmental modeling, GIScience and GIS, land use and its environmental consequences, and health geography.

The Master of Arts and Doctor of Philosophy programs prepare students to carry on creative and productive research in selected areas of geography. University of Iowa graduates hold positions on college and university faculties, in private research organizations, and in business and government.

The department provides opportunities for graduate students to gain practical teaching experience through service as departmental teaching assistants or graduate instructors.

Graduate students present research papers at conferences and regularly win awards. Students are involved in faculty research that leads to coauthored publications; they also publish their own papers. Graduate students compete successfully for intramural and extramural funding for graduate education and research.

Master of Arts
The Master of Arts program in geography requires a minimum of 30 s.h. of graduate credit with thesis and 32 s.h. of graduate credit without thesis. The program is designed to be completed in four semesters.

Thesis students must earn 15 s.h. of credit in Department of Geographical and Sustainability Sciences courses numbered 5000 or above; they may count 6 s.h. of thesis credit and 2 s.h. earned in GEOG:7000 Geography Colloquium toward the degree. Students who earn more than 30 s.h. may use the additional work to increase their breadth of knowledge in geography and to tailor their study programs to their individual interests.

Nonthesis students build skills across a range of topics in geographical and sustainability sciences during their first year and develop skills in particular application areas during their second year. Nonthesis students must earn 15 s.h. of credit in Department of Geographical and Sustainability Sciences courses numbered 5000 or above.

M.A. students demonstrate competence by completing appropriate course work; completing and defending an M.A. thesis (for thesis students) or completing a portfolio of finished work and having it reviewed (nonthesis students).

More detailed information about M.A. requirements is provided in the department's Manual for Graduate Degree Requirements; contact the Department of Geographical and Sustainability Sciences.

Doctor of Philosophy
The Doctor of Philosophy program in geography requires 72 s.h. of graduate credit and is designed to be completed in four or five years. The degree prepares students for college and university teaching and for advanced research. It provides study programs that lead to broad knowledge of a field of geography and its literature and to special expertise in a subfield.

Students may enter the Ph.D. program upon completing an undergraduate degree or with advanced standing corresponding to previous graduate education.
All Ph.D. students take the following courses. They take GEOG:7000 Geography Colloquium (1 s.h.) each semester they are in residence.

**GEOG:5010 Fundamentals of Geography** 3 s.h.
**GEOG:5050 Research and Writing in Geography** 3 s.h.
**GEOG:7000 Geography Colloquium (taken each semester)** 1 s.h.
Two courses in geography numbered above GEOG:5001 6 s.h.
Two research seminars chosen from GEOG:6500 through GEOG:6900; each course for 3 s.h.

Doctoral students complete a set of research milestones, including a research paper, an area of concentration bibliography, and a written qualifying examination in the discipline. With the approval of his or her dissertation advisor, each student submits a dissertation proposal to the dissertation committee for critical comments, oral questioning, and approval. Once the dissertation is completed, an oral defense of the dissertation is held.

More detailed information about Ph.D. requirements is provided in the department’s Manual for Graduate Degree Requirements; contact the Department of Geographical and Sustainability Sciences.

**Admission**

Applicants must meet the admission requirements of the Graduate College; see the Manual of Rules and Regulations of the Graduate College.

A bachelor's degree with a major in geography is not required, but applicants must have an undergraduate background relevant to the field. Strength in social science, environmental science, or geographic information science and interest in exploring the spatial perspectives that characterize modern geography are important in admission decisions. Depending on their prior training, graduate students may be required to take courses that are prerequisites for course work in their chosen area of graduate study; credit earned in prerequisites does not count toward the graduate degree.

Application materials include an undergraduate transcript with grade-point average, scores on the Graduate Record Examination (GRE) General Test, three letters of recommendation, and an essay in which the applicant states his or her reasons for wanting to study geography at the University of Iowa.

Applicants whose first language is not English must take the Test of English as a Foreign Language (TOEFL). Their scores must be provided to the University’s Office of Admissions.

New graduate students whose first language is not English are required to take a speaking proficiency test when they arrive at the University; eventually they take the English Language Performance Test (ELPT). Students must be fully certified by the ELPT before they begin their fourth semester in order to be considered for funding in succeeding semesters. Students who do not pass the tests are required to take Teaching Assistant Preparation in English (TAPE) courses until they have achieved proficiency in spoken English.

**Financial Support**

A number of graduate teaching and research assistantships are available. In addition, outstanding applicants and underrepresented minorities are eligible for several fellowships. Awards are based on merit. In making awards, the department pays particular attention to grade-point average, especially for the junior and senior years; score on the Graduate Record Examination (GRE) General Test; letters of recommendation; and fit of the student's objectives with department specializations. Applications for graduate appointments must be received by February 1. Applications for fellowships are due by January 15.

**Facilities and Resources**

The department houses three geographic information computational laboratories. They support a variety of GIS software packages, including the latest software from ESRI (ArcGIS) and Erdas (Imagine) as well as a suite of other commercial and open-source software. All lab computers are regularly updated to ensure that they are capable of running the latest software at peak performance.

The Geographical Information Systems Instructional Lab (GISIL) is the department's center for GIS teaching as well as a place where students conduct geographic and GIS-related projects. It is equipped with 27 networked student workstations, instructional support technology (e.g., CRT projection), and a suite of peripherals, including a LiDAR 3-D scanner, high-end global positioning system (GPS) units, and a large-format printer.

Environmental modeling and GIS research laboratories contain state-of-the-art machines (Windows and Linux platforms), geoprocessing and statistical software, and an array of software development tools. Projects requiring massive storage or high-performance computing have access to additional resources managed by the University's Information Technology Services research support group. The University of Iowa is a charter member of Internet2, with a high-performance network link to the Department of Geographical and Sustainability Sciences. The University also is a member of the University Consortium on Geographic Information Science.

To aid studies of water resources and physical geography, the department has a laboratory for the analysis of vegetation, soil, and water quality. The laboratory has a variety of field equipment, including soil probes, portable meteorological stations, GPS, ground-based 3-D LiDAR, anemometers, spectrometers, light sensors, and data loggers.

Faculty and graduate students participate in multidisciplinary working groups through the University's Program in Applied Mathematical and Computational Sciences (p. 925), the Center for Global and Regional Environmental Research, the Center for Health Effects of Environmental Contamination, International Programs, the Institute for Rural and Environmental Health, the Iowa Quaternary Studies Group, and the Public Policy Center. Participation in multidisciplinary working groups also is available through interdisciplinary research grants with investigators from other UI academic units, for example, the College of Engineering, the Carver College of Medicine, and the College of Public Health.

Geographic researchers have access to other University of Iowa resources, as well, such as the University’s Main Library, whose collections include more than 115,500...
maps; 3,600 atlases and reference works; and around 100,000 aerial photographs, primarily of Iowa.

Courses

Lower-Level Undergraduate

**GEOG:1000 First-Year Seminar** 1 s.h.
Small discussion class taught by a faculty member; topics chosen by instructor; may include outside activities (e.g., films, lectures, performances, readings, visits to research facilities). Requirements: first- or second-semester standing.

**GEOG:1010 Introduction to Human Geography** 3 s.h.
Geographic examination of how people occupy and shape physical space; examination of global population distribution and migration, language and religion, urban and economic spaces; application of geographic principles to contemporary global issues including social and political conflicts, globalization, and economic development. GE: Social Sciences.

**GEOG:1020 The Global Environment** 3 s.h.
Climate change and interactions between atmosphere and geological, hydrological, and biological systems; response of these systems to climate change and how such responses affect atmospheric processes through feedbacks (e.g., flows of energy, cycles of carbon and water); how geographic differences in such interactions create ecological patterns around the world (e.g., rainforests, prairies). GE: Natural Sciences without Lab.

**GEOG:1021 The Global Environment Lab** 1 s.h.
Laboratory complement to GEOG:1020. Corequisites: GEOG:1020, if not taken as a prerequisite. GE: Natural Sciences Lab only.

**GEOG:1030 Our Digital Earth** 3 s.h.
New technologies that have revolutionized how people navigate in unfamiliar places, locate friends and colleagues, manage cities, and confront environmental problems during the past decade; fundamental concepts related to how geographic information is used to better understand and manage the world and our everyday lives.

**GEOG:1046 People and the Environment: Technology, Culture, and Social Justice** 3 s.h.
How resources, commodities, people, and ideas connect across borders; examination of globalization through issues of technology, social justice, environment; perspectives from anthropology, gender studies, geography, energy science, and development. GE: International and Global Issues. Same as ANTH:1046, GWSS:1046.

**GEOG:1050 Foundations of GIS** 3 s.h.
Cartography, map analysis, and geographic information systems; map projections and scale; data collection, remote sensing, and GPS; data structures and organization; cartometry; symbolization and visualization.

**GEOG:1060 Geography of Asia: From Japan to Pakistan** 3 s.h.
Varied cultures and environments of Asia; exploration of physical and cultural landscapes of region; processes of development in context of globalization and regionalism; population growth; rise of megacities and urban agglomerations; ethnic, religious and political diversity and tensions; colonial legacies and emerging economies; food and water scarcity; climate change and biodiversity; natural hazards; migration and double burden of disease. GE: International and Global Issues.

**GEOG:1065 Introduction to Spatial Analysis: Patterns and Processes** 3 s.h.
How patterns of disease are described across a community; how clusters of crime in a community are identified; how we make inferences about processes that shape spatial patterns in society and environment; examples drawn from spatial sciences to introduce fundamental aspects of spatial analysis and develop powerful ways to think about spatial problems; emphasis on applications and interpretation, application of techniques using programs such as Matlab and SPSS; programming experience not required.

**GEOG:1070 Contemporary Environmental Issues** 3 s.h.
Political, economic, cultural, technologic, ecological, and geographic issues associated with natural resource and environmental problems, including population, global climate change, food production, tropical deforestation, waste management. GE: International and Global Issues; Social Sciences.

**GEOG:1090 Globalization and Geographic Diversity** 3 s.h.
Examination of contemporary global society; focus on world regions including physical environment, culture, economy, politics of each region, and relationships between regions; analysis of current conflicts within and between regions including social, religious, political, and economic issues. GE: International and Global Issues; Social Sciences.

**GEOG:1115 Energy and Society: History and Science of Oil** 3 s.h.
History, politics, and science of oil and oil industry. GE: Historical Perspectives. Same as EES:1115, ENVS:1115, HIST:1115.

**GEOG:2110 Population Geography: Societies in Flux** 3 s.h.
Ten million people populated the earth 5,000 years ago, and today there are nearly 20 cities with populations over 10 million and global population over 7 billion—why and where this population growth occurred, consequences of this rapid growth; trends in population processes (e.g., migration, social networks, household structure); population processes crucial to understanding changes to global systems related to energy use, human health, and sustainability; GE: Social Sciences.
GEOG:2130 World Cities 3 s.h.
Exploration of important urban centers, past and present; focus on why cities exist, how they are organized; key social, economic, and cultural roles played in human societies; examination of different historical eras, including ancient, medieval, and modern; analysis of urban physical structures and spatial organization, how they reflect societies that created them; case study cities include Ancient Rome, medieval Vienna, baroque Versailles, mercantile Amsterdam and London, major contemporary industrial and financial centers.

GEOG:2310 Introduction to Climatology 3 s.h.
Introduction to fundamental physical science principles that govern climatic processes and patterns; emphasis on scientific thinking and practice through lecture, discussion, exercises; opportunities to explore real-world climatology applications and questions (What is climate change? How fast is the climate actually warming? What are the contributions from us and how much is natural variability? How is climate change going to affect our weather?). Recommendations: GEOG:1020 or similar earth systems science course. Same as EES:2310.

GEOG:2331 Human Dimensions of Climate 3 s.h.
How climate shapes human societies; focus on how climate and climate variability affects food production, water use, energy use, and human disease systems (e.g., influenza, malaria, air pollution, diarrheal disease); climate change impacts (e.g., sea level rise, droughts, wildfires, famine); societal impact, adaptation and vulnerability, mitigation strategies; policy.

GEOG:2374 Biogeography 3 s.h.
Patterns of plant and animal distribution and their interpretation; historical geography including glaciation and plate tectonics; ecological geography, including physical factors (e.g., climate and geology); applications to conservation in diverse regions. Prerequisites: GEOG:1020 or BIOL:1141 or BIOL:1261 or BIOL:1370 or BIOL:1412. Same as BIOL:2374.

GEOG:2404 African Development 3 s.h.
Problems of economic, political, spatial integration in Africa; patterns and processes of economic development and nation building. GE: International and Global Issues; Social Sciences.

GEOG:2410 Environment and Development 3 s.h.
Environmental impacts of industrial and rural development explored through Third World case studies (Latin America, Africa, South and East Asia); environmental degradation from perspectives of political economy and ecology; class, gender, and indigenous peoples' issues; industry-agriculture linkages.

GEOG:2910 The Global Economy 3 s.h.
Examination of contemporary economic geography; types of national economies, uneven development, role of government in shaping economy, multinational corporations; foundation for understanding national economies and economic statistics; contemporary issues including economic globalization, commodification of nature, de-industrialization. GE: International and Global Issues; Social Sciences.

GEOG:2930 Water Resources 3 s.h.
Introduction to science and policy issues affecting water resources management in the United States; how intersection of people, climate, technology, and geography affects quality, availability, and demand for freshwater resources; basic hydrological processes; water needs of people and ecosystems; influence of regulations and management on water quality, availability, and hazards; historical and contemporary developments in management of water, including international conflicts.

GEOG:2950 Environmental Conservation 3 s.h.
Scientific foundations of biological conservation; strategies used to better connect conservation practice with needs of a growing human population. Prerequisites: (GEOG:1020 or ENVS:1080) and GEOG:1070.

GEOG:2990 Readings for Undergraduates arr.
Supervised readings in geography.

Upper-Level Undergraduate and Graduate

GEOG:3001 Special Topics arr.
Contemporary fields of inquiry, such as political economy, regional/African development, biophysical systems, GIS, locational analysis, water resources, economic geography, demographic analysis, environment, urbanization, transportation.

GEOG:3010 Geographic Information Systems and Science 3 s.h.
Solid foundation and introduction to GIS and digital map making; what GIS is and how GIS can contribute to research, careers, and everyday life; fundamentals that underlie GIS, including methods for GIS data collection and georeferencing, spatial modeling, spatial data analysis, and visualization; GIS trends including mobile GIS and the Web.

GEOG:3020 Earth Surface Processes 3 s.h.
Basic geomorphic and environmental processes that shape the earth's surface; emphasis on erosion, transport, deposition by land mass movement (creep, landslides, earth flow), fluid agents (wind, water, ice); methods used to study these processes. Prerequisites: EES:1050 or EES:1080 or ENVS:1080 or GEOG:1020. Same as ENVS:3020, EES:3020.

GEOG:3070 Hungry Planet: Global Geographies of Food 3 s.h.
Societal and environmental implications of past, current, and future global food supply examined from a geographical perspective; focus on questions of who eats what, where, and why; transformative history of agriculture, modern agribusiness and alternative food supplies, geopolitical implications of food production, food scarcity and rising food costs, urban versus rural agriculture, the obesity epidemic versus malnutrition, and the future of food. Same as GHS:3070.
**GEOG:3310 Geography of Health**  3 s.h.
Provision of health care in selected countries, with particular reference to the Third World; focus on problems of geographical, economic, cultural accessibility to health services; disease ecology, prospective payment systems, privatization, medical pluralism. Same as GHS:4111.

**GEOG:3320 Health, Work, and the Environment**  3 s.h.
Current topics in occupational and environmental health; how the United States protects workers, protects people from environmental agents, and reduces environmental harm. Same as OEH:3210.

**GEOG:3330 Landscape Ecology**  3 s.h.
Effects of spatial pattern on spatial processes in ecology; characteristics of matrix, patch, corridor; fragmentation, deforestation, habitat loss; spatial flows of energy, matter, genetic information; relationship to human impact, global climate change. Requirements: GEOG:2374 or ecology course numbered 1000-4999.

**GEOG:3340 Ecosystem Services: Human Dependence on Natural Systems**  3 s.h.
Ecosystem services—valuable goods and services produced by ecosystems (e.g., flood control, food production, water purification)—from an interdisciplinary perspective centering on geographic techniques used to measure, map, and model ecosystem services; methods used to incorporate ecosystem services into decision and policy making; how human activities alter these services. Prerequisites: GEOG:1050 and (GEOG:1020 or GEOG:1070 or GEOG:2374 or GEOG:3310 or BIOL:1370 or BIOL:2673 or EES:1080 or ENVS:1080 or ENVS:2673).

**GEOG:3350 Urban Ecology**  3 s.h.
Main theories and concepts of urban ecology; examination of urban ecosystems from an interdisciplinary perspective; how cities function as socioecological systems in their own right and how urban areas function as parts of larger regional and global ecosystems; how urban form and dynamics influence ecological functioning; urban species and nature conservation; urban ecological planning and design. Requirements: GEOG:2374 or ENVS:2673 or introductory course in ecology, and junior standing.

**GEOG:3360 Soil Genesis and Geomorphology**  3 s.h.
Introduction to soil genesis, soil geomorphology, and classification including the basics of soil profile description and soil-landscape, soil-vegetation, and soil-climate relationships; emphasis on study of soils as the interface between living and non-living Earth systems and the role of soils in sustaining ecosystems and human societies; short field excursions and a weekend field trip. Requirements: college earth science and chemistry. Same as EES:3360.

**GEOG:3400 Iowa Environmental Policy in Practice**  3 s.h.
How Iowa government addresses environmental policy development and implementation; policy process and current environmental issues; meetings with Iowa state legislators and relevant agency personnel in Des Moines, attendance at legislative sessions and hearings, and observation of how policies move into practice in agency offices; small group work to prepare a presentation on a policy or planning issue. Requirements: GEOG:3780 or ANTH:3102 or ANTH:3112 or POLI:3111 or mid-level or higher course in environmental policy and planning curriculum; and junior or higher standing.

**GEOG:3500 Introduction to Environmental Remote Sensing**  3 s.h.
Basic concepts and principles of remote sensing; sources of data; georegistration; digital processing and classification of remotely sensed images for extraction of environmental information; linkage of remote sensing techniques with GIS analysis.

**GEOG:3505 Foundations of GIS**  3 s.h.
Cartography, map analysis, and geographic information systems; map projections and scale; data collection, remote sensing, GPS; data structures and organization; cartometry; symbolization and visualization.

**GEOG:3520 GIS for Environmental Studies**  3 s.h.
Methods of managing and processing geographic information for environmental analysis; basic concepts, structures, theories of geographic information system (GIS), basic analytical techniques, and hands-on experience in GIS operations. Prerequisites: GEOG:1050.

**GEOG:3530 Mapping American Cities and Regions**  3 s.h.
Foundation concepts for GIS-based analysis of urban, social, and economic data for the United States; geo-referenced sources of U.S. national and state data; application to contemporary social issues. Prerequisites: GEOG:1050.

**GEOG:3540 Introduction to Geographic Visualization**  3 s.h.
Basic concepts and techniques that underlie cartographic representation and the broader field of geographic visualization; digital cartographic practices; how scientific visualization, information visualization, and user interface design contribute to geographic visualization; map symbolization, scale and generalization, animation and dynamic map design, multimedia, virtual and mixed environments, interfaces for GIS; experience applying cartographic and visualization techniques. Prerequisites: GEOG:1050.
GEOG:3550 Integrating Time into GIS 3 s.h.
Fundamental concepts for integrating temporal elements into geographic information systems (GIS); conceptual and formal models of time, models of change, event-based modeling, modeling of moving entities; topics related to fundamentals of spatiotemporal databases and query languages. Prerequisites: GEOG:1050.

GEOG:3560 Spatial Analyses of Wind Energy 3 s.h.
Introduction to underlying processes, measurement methods, and spatial analyses related to wind energy; siting criteria, techniques for data collection and analysis, GIS-based approaches to renewable energy siting.

GEOG:3570 Light Detection and Ranging (LiDAR): Principles and Applications 3 s.h.
Basic principles and applications of Light Detection and Ranging (LiDAR); LiDAR as an essential technology for mapping and analysis of a vast range of surfaces; application examples include floodplain mapping, forestry management, transportation planning, vegetation analysis, urban planning, and 3-D modeling; theoretical understanding and practical experience using different software. Recommendations: GEOG:3500 or EES:3100.

GEOG:3750 Environmental Quality: Science, Technology, and Policy 3 s.h.
Geographical perspectives in the study and interpretation of chemicals in the environment; environmental standards under existing laws; local, regional, national, international case studies in environment and health; socioeconomic and institutional considerations in designing environmental protection strategies. Prerequisites: STAT:1020.

GEOG:3760 Hazards and Society 3 s.h.
Introduction to social science perspectives on societal responses to natural and technological hazards; risk perception and communication, disaster management, social vulnerability, and risk assessment; case studies of recent major disasters (e.g., Haiti earthquake, Tohoku earthquake/tsunami/nuclear accident, Hurricane Katrina); current directions in hazards research, policy, and practice. Same as GHS:3760.

GEOG:3780 U.S. Energy Policy in Global Context 3 s.h.
Historical and contemporary aspects of U.S. governmental planning and policy on a wide range of energy issues in global context. Prerequisites: (GEOG:1020 or EES:1080) and GEOG:1070. Same as GHS:3780.

GEOG:3910 Geographic Perspectives on Development 3 s.h.
Theoretical and empirical studies of the regional development process, with emphasis on developing countries; alternative regional development theories and changes in development theories in the literature of geography, related disciplines.

GEOG:3920 Planning Livable Cities 3 s.h.
Development of livable cities in the United States; economic, physical, environmental, and political forces that shape their growth; impact of planning, how it shapes the future of cities. Same as URP:3001.

GEOG:3940 Transportation Economics 3 s.h.
Overview of transportation markets—intercity, rural, urban; transportation modes—rail, highway, air, water, pipeline, transit; issues in finance, policy, planning, management, physical distribution, and environmental, economic, and safety regulation. Recommendations: ECON:1100 and ECON:1200. Same as URP:3350, ECON:3750.

GEOG:3992 Undergraduate Research arr.
Supervised research in geography.

GEOG:4010 Field Methods in Physical Geography 3 s.h.
Project design and sampling methods of climate, vegetation, soil, landforms, water; projects in areas including field meteorology, soil surveying, vegetation sampling, water quality sampling, use of global positioning systems; introduction to research design.

GEOG:4020 Field Methods: Mapping and Mobile Computing 3 s.h.
Development and application of mobile geographic information technologies; key issues associated with global positioning systems (GPS), wireless technologies, field-based data collection and analysis, ubiquitous computing, and location-based services; experience using GPS, advanced mobile computing technologies, mobile GIS software to construct geographic datasets, and data sampling techniques.

GEOG:4030 Senior Project Seminar 3 s.h.
Development of a research project and preparation of a research report. Offered spring semesters.

GEOG:4150 Health and Environment: GIS Applications 3 s.h.
Applications of GIS and spatial analysis for studying health outcomes and exposure to environmental contaminants at different geographical scales. Same as GHS:4150.

GEOG:4500 Applications in Environmental Remote Sensing 4 s.h.
Theory and practice of remote sensing and digital image processing; practical applications to human-environment interactions. Recommendations: GEOG:3500 or EES:3110 or ENVS:3110.

GEOG:4520 GIS for Environmental Studies: Applications 3 s.h.
Applications of geographic information system (GIS) techniques in environmental change analysis (especially land use/cover change), environmental assessment, hazard/risk analysis, environmental decision making. Prerequisites: GEOG:3520.

GEOG:4570 Spatial Analysis and Location Models 3 s.h.
Application of location models within GIS environments to support decision making; small area demographic forecasting, location-allocation models, regionalization problems, shortest path models, other spatial analysis methods used to support spatial decisions. Prerequisites: GEOG:1050.

GEOG:4580 Introduction to Geographic Databases 3 s.h.
Introduction to key aspects of database design for GIS applications; major database models that support spatial data; formal models for key spatial relationships that underlie many different GIS applications; basics of SQL for making queries on datasets; design and construction of ArcGIS geodatabases; ArcGIS tools for geoprocessing. Prerequisites: GEOG:1050.

GEOG:4650 Simulation in Environmental Geography 3 s.h.
How computer simulations are used in environmental studies, with focus on landscape ecology (spatial patterns of organisms and ecosystems); basics of performing simulations; principles and applications of simulation through readings and performing simulations; frontiers of simulation use in the field; hands-on experience writing computer simulations that capture environmental processes (e.g., changing climate, predator-prey relations, nutrient flux), and analyzing the outcomes. Requirements: advanced courses in environmental geography or environmental science and senior standing.

GEOG:4750 Environmental Impact Analysis 4 s.h.
Environmental impact assessment methodologies; emphasis on cost-benefit-risk, cost-effectiveness and incremental analysis, and overlay and graphic techniques; optimal resource use, system simulation; field trips to local environmental control facilities. Prerequisites: GEOG:1070. Same as URP:4750.

GEOG:4770 Environmental Justice 3 s.h.
Review of theoretical positions for examining environmental justice, application of those theories to environmental controversies around the globe.

GEOG:4870 Applied Geostatistics 3 s.h.
Applications of geostatistical methods to geology, geography, hydrology, environmental sciences, and engineering; variogram, Kriging, analysis of spatial-varied data with varied computer software in participants' specialties. Same as EES:4870.

GEOG:4930 Urban Geography 3 s.h.
Central ideas of modern urban geography, their links to social theory; focus on interrelation between social change, urban environment; evolution of urban systems, emergence of the capitalist city, urban social and residential differentiation, local politics of uneven development.

GEOG:4960 The Middle East 3 s.h.
Middle East cultures, political economy, conflict; significance of the Middle East in world affairs, vice versa.

GEOG:4990 Senior Thesis 3 s.h.
Original research. Requirements: senior standing.

GEOG:4995 Honors Thesis arr.
Original research. Requirements: honors standing.

Graduate
GEOG:5001 Readings arr.
Supervised readings by graduate students in topics of their choice.

GEOG:5010 Fundamentals of Geography 3 s.h.
Geography as an academic discipline; history, advances, epistemology, common themes.

GEOG:5050 Research and Writing in Geography 3 s.h.
Identification of research areas; research questions and hypotheses; responsible conduct of research; methodological decisions; research proposal and paper writing.

GEOG:5070 Special Topics arr.
Contemporary fields of inquiry, such as political economy, regional/African development, biophysical systems, GIS, locational analysis, water resources, economic geography, demographic analysis, environment, urbanization, transportation.

GEOG:5129 Information Systems for Resource Management 3 s.h.
Understanding and managing natural and engineered resources requiring data-reach foundation; management of data; complex data-driven technologies integrated into data and information systems (DIS); hands-on opportunity to develop or use capabilities of DIS for study or research area of interest (science, engineering, industrial operation); wind power generation, an emerging field in Iowa, used as a case study for illustrating key DIS components, links, and functionalities. Same as IE:5129, ME:5129, CEE:5129, ECE:5129.

GEOG:5550 Modeling Space and Time 3 s.h.
How to generate time-space-resolved estimates of sociophysical environmental contexts with the aid of modern geo-spatial technologies; how to model social, behavioral, and health outcomes with reference to multilevel time-space-resolved sociophysical environmental contexts; environmental contexts from air pollution and pesticide concentration to neighborhood diversity; statistical modeling of varied social, behavioral, and health outcomes such as dropping out of college, smoking, excessive weight, asthma, mental and physical disability. Requirements: a course in statistics and good understanding of correlation and regression.

GEOG:5650 Simulations in Landscape Ecology 3 s.h.
Dynamics of land use and land cover change explored through advanced use of computer simulations in landscape ecology; how simulation is used in the field; simulations based on landscape ecology questions, with analysis of results using typical landscape ecology metrics. Prerequisites: GEOG:4650.

GEOG:6100 Seminar in Health and Environment 3 s.h.
Research on health and environment.

GEOG:6264 Planning Sustainable Transportation 2-4 s.h.
Theories and methods of exerting public control over passenger and freight transportation; social and environmental regulation; effects of changing finance, regulation, and pricing policies, including privatization, tolls, impact fees. Same as URP:6264.
GEOG:6300 Seminar in Environment, Conservation, and Land Use
Research on land use, water resources, conservation.

GEOG:6500 Seminar in Spatial Analysis and Modeling
Research themes in spatial analysis, GIScience, simulation, remote sensing.

GEOG:6632 Crossing Borders Proseminar

GEOG:6635 Crossing Borders Seminar

GEOG:6900 Seminar in International Development
Research on GIScience and development.

GEOG:7000 Geography Colloquium
arr.

GEOG:7150 Research in Health and Environment
Directed research in health and environment.

GEOG:7350 Seminar: Environment, Conservation, and Land Use
Directed research in land use, water resources, conservation.

GEOG:7550 Research in Spatial Analysis and Modeling
Directed research in spatial analysis, GIScience, simulation.

GEOG:7750 Research in Environmental Policy
Directed research in environmental justice and policy.

GEOG:7950 Research in International Development
Directed research in international development.

GEOG:7999 Thesis
arr.
German

Director, Division of World Languages, Literatures, and Cultures
• Russell Ganim
Chair, Department of German
• Russell Ganim

General Education language coordinator
• Bruce Nottingham-Spencer

Undergraduate major: German (B.A.)
Undergraduate minor: German
Faculty: http://clas.uiowa.edu/dwllc/german/people
Web site: http://clas.uiowa.edu/dwllc/german

The Department of German provides education in the language, literature, and culture traditionally designated as German, as expressed in the language and cultural heritage of Germany, Austria, and Switzerland. Its faculty members conduct research and teach on topics in German language, literature, and culture from disciplinary and interdisciplinary perspectives.

Undergraduate students in all majors may satisfy the World Languages requirement of the General Education Program with courses in German; see "Language for General Education" below. They may satisfy other General Education requirements with courses on German literature and culture that are taught in English; look for courses with the prefix GRMN in the area lists under "Culture, Society, and the Arts" in the General Education Program (p. 313) section of the Catalog. General Education courses on German literature and culture also are listed with departmental courses taught in English under "Courses" at the end of this Catalog section.

University graduates with degrees in German frequently enter the teaching profession. They also find positions in government, foreign service, and commercial enterprise.

The Department of German is one of the academic units in the Division of World Languages, Literatures, and Cultures (p. 228).

Undergraduate Programs of Study

• Major in German (Bachelor of Arts)
• Minor in German

Bachelor of Arts

The Bachelor of Arts with a major in German requires a minimum of 120 s.h., including at least 30 s.h. of work for the major. Students must maintain a g.p.a. of at least 2.00 in all courses for the major and in all UI courses for the major. They also must complete the College of Liberal Arts and Sciences General Education Program (p. 313). Students who plan to earn licensure to teach in elementary and/or secondary schools should see "B.A. with Teacher Licensure" below.

Students who begin a German major with no previous German language experience must complete the following courses or their equivalents.

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tr>
<td>GRMN:1001 Elementary German I</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>GRMN:1002 Elementary German II</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>GRMN:2001 Intermediate German I</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>GRMN:2002 Intermediate German II</td>
<td>4 s.h.</td>
</tr>
</tbody>
</table>

This requirement also may be satisfied by various combinations of GRMN:1020 Intensive Elementary German, GRMN:1010 First-Year German Review, and GRMN:2020 Intensive Intermediate German.

The 30 s.h. required for the major must include at least five German courses numbered 3000 or above taken at the University of Iowa. Note: GRMN:3501 Introduction to German Literature (or equivalent) is prerequisite for some other German literature courses.

The major in German requires the following course work.

Core courses—all of these:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GRMN:3103 Composition and Conversation I</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>GRMN:3104 Composition and Conversation II</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>GRMN:3501 Introduction to German Literature</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

Linguistics—one of these:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GRMN:3807 Introduction to German Linguistics</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>GRMN:3855 The Sounds of German</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>GRMN:3865 History of the German Language</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

Culture—one of these:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GRMN:3405 German Cultural History</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>GRMN:4315 Contemporary German Civilization</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

Capstone course:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GRMN:4850 Senior Seminar</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

Electives:

Four electives chosen from Department of German courses (prefix GRMN), with at least two numbered 3000-4999 | 12 s.h. |

Students may count a maximum of two Department of German courses taught in English and numbered 2500-2999 toward the major by registering for 4 s.h. of credit for each course instead of 3 s.h.; the additional 1 s.h. of credit reflects an added research component. See "German in Translation" under "Courses"/"Lower-Level Undergraduate" toward the end of this Catalog section. Courses taught in English that are taken for 3 s.h. do not count toward the major in German.

With the approval of the departmental director of undergraduate studies, students also may apply one course from the University of Iowa Honors Program to the requirements of the German major or minor when that course concerns German culture or language. Honors courses are subject to the same limits on courses taught in English as are Department of German courses.

German majors, both undergraduate and graduate, are urged to supplement their degree programs with relevant courses in areas such as German history, philosophy, and business.
B.A. with Teacher Licensure

German majors interested in earning licensure to teach in elementary and/or secondary schools must complete the College of Education’s Teacher Education Program (TEP) in addition to the requirements for the major and all requirements for graduation. The TEP requires several College of Education courses and student teaching. Contact the Office of Education Services for details.

Students must satisfy all degree requirements and complete Teacher Education Program licensure before degree conferral.

Students who plan to use their work toward a German minor as academic background for earning teacher licensure should contact the Office of Education Services about requirements.

Four-Year Graduation Plan

The following checkpoints list the minimum requirements students must complete by certain semesters in order to stay on the University’s Four-Year Graduation Plan.

Before the third semester begins: language competency equal to first-year German

Before the fifth semester begins: language competency equal to second-year German

Before the seventh semester begins: four courses in the major and at least 90 s.h. earned toward the degree

Before the eighth semester: two or three additional courses in the major

During the eighth semester: enrollment in all remaining course work in the major, all remaining General Education courses, and a sufficient number of semester hours to graduate

Honors in the Major

Exceptional students majoring in German have the opportunity to pursue honors study in the major and to graduate with honors in the major. To participate in the department’s honors program, students must have completed three years of college-level German, or the equivalent, with a g.p.a. of at least 3.50 in upper-level German courses.

Students working toward graduation with honors in the German major must register for GRMN:4990 Honors Program in German and must meet regularly with their faculty director of studies. They are expected to engage in readings and discussions in German linguistics, literature, or culture and to write essays in German and English. They also must complete honors research and write an honors thesis, registering for GRMN:4991 Honors Research and Thesis. They complete their honors requirements by presenting their honors thesis to a faculty committee of at least three members.

In addition to honors in their majors, undergraduate students have a variety of opportunities for honors study and activities through membership in the University of Iowa Honors Program; visit Honors at Iowa to learn about the University’s honors program.

Minor

The minor in German requires a minimum of 15 s.h. in college-level German courses, including at least 12 s.h. in courses taken at the University of Iowa. All Department of German courses numbered 3000 or above count toward the minor. Students must maintain a g.p.a. of at least 2.00 in all courses for the minor and in all UI courses for the minor. Course work in the minor may not be taken pass/nonpass.

The minor must include 9 s.h. in Department of German courses (prefix GRMN) numbered 3000 or above. It also may include a maximum of 3 s.h. in Department of German courses numbered 2002-2100.

Students may count one Department of German course taught in English and numbered 2500-2999 toward the minor by registering for 4 s.h. of credit for the course instead of 3 s.h.; the additional 1 s.h. of credit reflects an added research component. See “German in Translation” under “Courses”/“Lower-Level Undergraduate” toward the end of this Catalog section. Courses taught in English that are taken for 3 s.h. do not count toward the minor in German.

With the approval of the director of undergraduate studies, students may count up to 6 s.h. earned in study abroad at a university in a German-speaking country toward the minor.

Language for General Education

The department offers several sequences of German language courses that students in all majors may use to satisfy the World Languages requirement of the College of Liberal Arts and Sciences General Education Program (p. 313). Students who have had experience with German should take the online World Languages Placement Test, which helps determine the level at which a student should begin German language study at the University of Iowa. Students with no background in German should begin their study with GRMN:1001 Elementary German I.

The following sequences satisfy the World Languages Requirement of the General Education Program. Students using German to satisfy the World Languages requirement should talk with departmental advisors to determine which sequence is best for them.

GRMN:1001 Elementary German I 4 s.h.
GRMN:1002 Elementary German II 4 s.h.
GRMN:2001 Intermediate German I 4 s.h.
GRMN:2002 Intermediate German II 4 s.h.
or
GRMN:1001 Elementary German I 4 s.h.
GRMN:1002 Intermediate German II 4 s.h.
GRMN:2020 Intensive Intermediate German 4-6 s.h.
or
GRMN:1020 Intensive Elementary German 4,6 s.h.
GRMN:2020 Intensive Intermediate German 4-6 s.h.
or
GRMN:1010 First-Year German Review 5 s.h.
GRMN:2001 Intermediate German I 4 s.h.
GRMN:2002 Intermediate German II 4 s.h.
or
GRMN:1010 First-Year German Review 5 s.h.
GRMN:2020 Intensive Intermediate German 4-6 s.h.
Joint B.A./M.A.
The joint Bachelor of Arts/Master of Arts program in German permits students to count 12 s.h. of approved course work toward both degrees and to take graduate-level German courses while they are still undergraduates. Students may complete both degrees in five years. They receive the B.A. when they have satisfied all requirements for the bachelor's degree, and they receive the M.A. when they have completed all master's degree requirements.

The joint B.A./M.A. is appropriate for students who enter the University from high school with advanced German language preparation. It is attractive to highly motivated students who plan to study abroad and who plan to pursue a Ph.D. in German or second language acquisition. It may serve as preparation for other programs, such as those related to international studies, library science, business with an international focus, or international relations. Students seeking careers in teaching or other fields may pursue the joint degree as a credential.

Joint program students must fulfill all requirements for the B.A. They ordinarily spend two semesters in their junior year enrolled in the study abroad program at the University of Freiburg, in Germany (see "Study Abroad" below), unless they have satisfied this requirement another way (e.g., a year abroad during high school or another study abroad program with similar content).

During the last two semesters of their senior year, they may take up to 12 s.h. of graduate-level courses that count toward both degrees (for the B.A., 6 s.h. toward required courses and 6 s.h. toward electives). Once they complete all B.A. requirements, they complete the remaining M.A. requirements.

Students must maintain an undergraduate German g.p.a. of at least 3.50; if they fail to meet this standard for more than one semester, they may be required to leave the program. They must have an overall undergraduate g.p.a. of at least 3.00 when they achieve graduate standing.

Applicants must be admitted to the joint program before the beginning of their seventh semester (senior year). They must be University of Iowa undergraduate students; must have completed 80 s.h. or be in the process of completing 90 s.h. of undergraduate work; and must have completed or be in the process of completing at least 21 s.h. of courses in the German major numbered 3000 or above. They must have completed or be in the process of completing a study abroad program in a German-speaking country or have satisfied this requirement another way. They also must have a g.p.a. of at least 3.50 in German when they apply to the program or a letter from a Department of German faculty member recommending an exception.

Students pay undergraduate tuition and fees during their first semester in the joint program (normally their seventh semester); beginning with their second semester in the program (normally their eighth semester), they begin paying graduate tuition and fees. Students may hold a graduate appointment beginning with their second semester in the joint program.

Study Abroad
The Department of German participates in an academic year abroad program for undergraduates at the Albert Ludwig University of Freiburg, in Germany. The Freiburg program is offered by a consortium made up of the University of Iowa, Michigan State University, the University of Michigan, and the University of Wisconsin-Madison.

Students arrive during the first week of September and participate in a four-week intensive language program. Then they take a blend of special program classes and regular German university courses. Organized field trips are designed to give students a broader perspective on German culture. Vacation periods permit extensive travel throughout Europe, and students are encouraged to use weekends for shorter trips in the region.

To apply, students must have reached at least sophomore standing by the beginning of the program, must have completed at least the first four semesters of college German or the equivalent with a g.p.a. of at least 3.00 in German, and must be in good academic standing at a U.S. college or university.

Students earn resident credit in all courses successfully completed in the program. They may count up to 21 s.h. earned at Freiburg toward the major in German. Credit also counts toward the minor in German. Students in other majors should consult with their advisor or their department's undergraduate director.

Contact the Department of German or International Programs Study Abroad for more information.

Graduate Program of Study

• Master of Arts in German

Advanced undergraduate students majoring in German may begin working toward a master’s degree in German while completing their bachelor's degree; see "Joint B.A./M.A." above.

Master of Arts
The Master of Arts program in German requires a minimum of 33 s.h. of graduate credit. It is offered with or without thesis.

M.A. students choose one of two concentrations: German literature or Germanic linguistics. The German literature concentration requires seven literature courses (21 s.h.) and four linguistics courses (12 s.h.). The Germanic linguistics concentration requires seven linguistics courses (21 s.h.) and four literature courses (12 s.h.).

M.A. students are expected to complete at least 24 s.h. in the Department of German. All M.A. course work taken outside the department requires the graduate advisor’s approval.

Before taking the M.A. exam, students must demonstrate reading knowledge of a foreign language other than German, at a level equivalent to two years of college study or four years of high school study. Students may demonstrate competence by submitting proof that they have taken the required course work with a g.p.a. of at least 3.00 or by passing an exam at the fourth-semester college level, as determined by the appropriate language department.

Admission
Applicants must meet the admission requirements of the Graduate College; see the Manual of Rules and Regulations of the Graduate College.
Financial Support
Teaching assistantships, research assistantships, and partial tuition scholarships are available for qualified graduate students. The department awards the Wilson and the Funke prizes to students of distinction.

Facilities and Resources
Students have the opportunity to improve their comprehension and command of German by working with recorded materials in the Language Media Center. They also may benefit from the multimedia courseware and digital video recordings from German television.

An extensive collection of works and periodicals at University of Iowa Libraries facilitates research in all major areas of German literature and Germanic linguistics and at all levels of study.

The Global Mosaic and Spoken Here Living-Learning Communities are two on-campus housing options of special interest to undergraduate world languages students.

Courses
Lower-Level Undergraduate

GRMN:1001 Elementary German I 4 s.h.
Understanding and speaking "everyday German"; reading and writing skills; acquaintance with the German-speaking world through discussion, readings, videos. GE: World Languages First Level Proficiency.

GRMN:1002 Elementary German II 4 s.h.

GRMN:1005 German Conversation and Culture I 1 s.h.
Conversational practice and exposure to German culture; development of listening and speaking skills, expansion of vocabulary, and exposure to contemporary culture of German-speaking countries; conversation practice, games, and introduction to cultural topics through short texts, videos, and songs. Corequisites: GRMN:1001 or GRMN:1020.

GRMN:1006 German Conversation and Culture II 1 s.h.
Conversational practice and exposure to German culture; development of listening and speaking skills, expansion of vocabulary, and exposure to contemporary culture of German-speaking countries; conversation practice, games, and introduction to cultural topics through short texts, videos, and songs. Prerequisites: GRMN:1001. Corequisites: GRMN:1002 or GRMN:1010.

GRMN:1010 First-Year German Review 5 s.h.
Accelerated course in preparation for third-semester German. Requirements: at least two years of high-school German. GE: World Languages Second Level Proficiency.

GRMN:1020 Intensive Elementary German 4,6 s.h.
Elementary German I and II combined in one intensive course. GE: World Languages Second Level Proficiency.

GRMN:1040 German for Travelers 2 s.h.
Basic German skills for tourists; for students with no previous knowledge of German.

GRMN:2001 Intermediate German I 4 s.h.
Proficiency in spoken and written German; German-speaking cultures of central Europe, their historical background; emphasis on refinement of reading skills. Prerequisites: GRMN:1002 or GRMN:1010. GE: World Languages Second Level Proficiency.

GRMN:2002 Intermediate German II 4 s.h.

GRMN:2005 German Conversation and Culture III 1 s.h.
Conversational practice and exposure to German culture; development of listening and speaking skills, vocabulary expansion, and exposure to contemporary culture of German-speaking countries; conversation practice, games, and introduction to cultural topics in the form of short texts, videos, and songs. Prerequisites: GRMN:1002. Corequisites: GRMN:2001 or GRMN:2020.

GRMN:2006 German Conversation and Culture IV 1 s.h.
Conversational practice and exposure to German culture; development of listening and speaking skills, vocabulary expansion, and exposure to contemporary culture of German-speaking countries; conversation practice, games, and introduction to cultural topics through short texts, videos, and songs. Prerequisites: GRMN:2001. Corequisites: GRMN:2002 or GRMN:2020.

GRMN:2020 Intensive Intermediate German 4-6 s.h.
Intermediate German I and II combined in one intensive course. Prerequisites: GRMN:1002 or GRMN:1010 or GRMN:1020. GE: World Languages Fourth Level Proficiency.

German in Translation

GRMN:1000 First-Year Seminar 1 s.h.
Small discussion class taught by a faculty member; topics chosen by instructor; may include outside activities (e.g., films, lectures, performances, readings, visits to research facilities). Requirements: first or second semester standing.

GRMN:2550 Mardi Gras and More: Cultures of Carnival 3-4 s.h.
Literature and customs associated with carnival from antiquity through present day; readings on theories of carnivalesque (Mikhail Bakhtin, Peter Burke, and others); materials from three distinct carnival cultures—Renaissance Europe (Francois Rabelais, German carnival plays), 19th-century New Orleans, and present day Rio de Janeiro. GE: Values, Society, and Diversity. Same as WLLC:2550.
GRMN:2618 The Third Reich and Literature 3 s.h.
Nazi literature, literature of the Holocaust and the Opposition, exile literature, in English translation. Taught in English. GE: Values, Society, and Diversity. Same as CL:2618.

GRMN:2620 Anne Frank and Her Story 3 s.h.
Analysis of the Diary of Anne Frank, its media adaptations, and related materials (e.g., fictionalizations, additional first-hand accounts); examination of Holocaust in the Netherlands, Belgium, and other countries outside Germany; anti-Semitism, discrimination, tolerance, resistance, identity formation, human aspiration and belief.

GRMN:2630 German Cinema: Greatest Hits 3-4 s.h.
Overview of German cinema; expressionist film of the Weimar Republic; Nazi cinema; post-war cinema; East German film; New German Cinema; post-unification and contemporary cinema. Taught in English. GE: Literary, Visual, and Performing Arts.

GRMN:2650 German Nationalism After WWII 3-4 s.h.
Introduction to contemporary nationalism and national identity in context of modern Germany; examination of various theories on nationalism. Taught in English. GE: Values, Society, and Diversity.

GRMN:2655 Muslim Minorities in the West 3-4 s.h.
Introduction to lives of Muslim immigrants in the USA, France, Germany, and England; examination of various theories on multiculturalism. Taught in English. Same as IS:2600.

GRMN:2660 Magic Mirrors, Self-Discovery, and Murder: Gender Trouble in German Literature 3-4 s.h.
German literature since Romantic era as an intensifying battle of wits over language in which gender has played a central role; a stark rift open where literary space offers much less hospitable conditions to women writers than to men; exploration of gendered fault line that runs through literary space; how women writers respond to and rewrite language that confronts them; readings from German literary texts (in English translation) from 1800 to present; emphasis on writings of women supplemented with key texts by major authors to which they respond and reread; knowledge of German not required. Same as CL:2660.

GRMN:2666 Pact with the Devil 3-4 s.h.
Pact with the devil—a metaphor for humankind's desire to surpass the limits of knowledge and power—in German literature and culture from early modern time to early 20th century; Goethe's Faust, Klaus Mann's Mephisto, Thomas Mann's Doctor Faustus, Weber opera; fascination with the forbidden in regard to women, such as in Meinhold's Amber Witch; the pact in other cultures and in contemporary American literature and culture. Taught in English. Requirements: RHET:1030 or completion of General Education rhetoric requirement. GE: Literary, Visual, and Performing Arts.

GRMN:2675 The Politics of Memory: Holocaust, Genocide, and 9/11 3-4 s.h.
How contested legacies of genocide, global violent conflict, and 9/11 continue to pose an urgent and generationally mediated challenge for critical politics of memory; various approaches to effective or failed coming-to-terms with injurious and difficult past (e.g., Holocaust, Armenian genocide); analysis of museums, sites of memory, and art work. Taught in English.

GRMN:2720 Germany in the World 3-4 s.h.

GRMN:2770 Norse Mythology: Gods, Heroes, and Monsters of Northern Europe 3-4 s.h.
Introduction to Norse mythology and related West Germanic mythologies; readings from primary sources in translation (Prose Edda, Poetic Edda, Icelandic sagas); social, historical, and geographic context in northern Europe; reception of Norse mythology in 19th and 20th centuries; incorporation of figures and themes from Norse mythology in works ranging from opera to fantasy fiction and comic books. Taught in English.

GRMN:2775 Scandinavian Crime Fiction 3 s.h.
Contemporary Scandinavian crime novel in its literary, historical, geographic, cultural, and social context. Taught in English. GE: Literary, Visual, and Performing Arts.

GRMN:2780 King Arthur Through the Ages 3-4 s.h.
Representation and function of King Arthur in European literature and film, from Geoffrey of Monmouth's History of the Kings of Britain (ca. 1136) to present. Taught in English. GE: Literary, Visual, and Performing Arts; Values, Society, and Diversity.

GRMN:2785 The Fantastic and Supernatural in German Fiction and Film 3-4 s.h.
Themes of the fantastic and supernatural in German literature; works by well-known authors from 18th century to present (Goethe to Kafka, the Romantics, Magic Flute to latest science fiction or fantasy) in historical context; writers' struggle to define and maintain themselves through tumultuous social and personal changes. GE: Literary, Visual, and Performing Arts.

Upper-Level Undergraduate and Graduate

GRMN:3010 Stories in German 3 s.h.
Stories and other relatively short prose by representative authors; discussion and response; varied topics. Taught in German. Prerequisites: GRMN:3501.

GRMN:3103 Composition and Conversation I 3 s.h.
Active command of German in reading, speaking, writing. Taught in German. Prerequisites: GRMN:2002.

GRMN:3104 Composition and Conversation II 3 s.h.
Taught in German. Prerequisites: GRMN:2002.

GRMN:3199 German Readings and Research 1 s.h.
Research and readings in German language, literature, and culture. Prerequisites: GRMN:2002. Requirements: (German major or minor) and concurrent registration in one German course numbered 2500-2999.

GRMN:3214 Business German
3 s.h.
World of German business, role of German-speaking countries in world trade; emphasis on German business protocol, correspondence. Taught in German. Prerequisites: GRMN:2002 or GRMN:2020.

GRMN:3236 German Film
3 s.h.
Overview 1925-1987; examples of avant-garde films of the Weimar Republic, propagandist filmmaking from the Third Reich, filmmaking traditions of the German Democratic Republic (GDR) and the Federal Republic of Germany (FRG). Prerequisites: GRMN:2002.

GRMN:3250 Brief Texts About Big Events
3 s.h.
Twentieth-century German literature in context of major historical events. Taught in German. Prerequisites: GRMN:2002.

GRMN:3260 German Cultural History
3 s.h.
Emphasis on mythical historical persons and places. Taught in German. Prerequisites: GRMN:3103 or GRMN:3104 or GRMN:3501.

GRMN:3510 Introduction to German Literature
3 s.h.
Literary works from various genres. Taught in German. Prerequisites: GRMN:2002.

GRMN:3540 Grammar in Second Language Teaching/Learning
3 s.h.
Grammar, second language acquisition, and teaching. Taught in English, projects in varied languages. Same as SLA:5973.

GRMN:3550 The Politics of Remembrance in German Multicultural Literature and Film
3 s.h.
Exploration of contemporary literary texts and films by multicultural German authors and filmmakers who deal critically with German collective memory and the politics of remembrance. Prerequisites: GRMN:2002 or GRMN:2020.

GRMN:3555 Image of America in German Literature and Film
3 s.h.
Examination of real and imagined cultural stereotypes; representations of the United States in German literature, film, and media. Prerequisites: GRMN:3103 or GRMN:3104 or GRMN:3501.

GRMN:3807 Introduction to German Linguistics
3 s.h.
Phonology, morphology, syntax, semantics, historical development. Taught in German. Offered spring semesters of even years. Prerequisites: GRMN:3103 or GRMN:3104 or GRMN:3501.

GRMN:3845 The Structure of German
3 s.h.
Structure analysis of German words and sentences; emphasis on vocabulary expansion and writing with increased grammatical accuracy and complexity; can be taken concurrently with other German courses numbered above GRMN:2002. Taught in German. Prerequisites: GRMN:2002.

GRMN:3855 The Sounds of German
3 s.h.
Analysis of sounds and sound system of German; practice in listening and speaking. Prerequisites: GRMN:2002.

GRMN:3865 History of the German Language
3 s.h.
History of the German language; its Indo-European roots, important characteristics of the language's major periods. Prerequisites: GRMN:3103 or GRMN:3104 or GRMN:3501.

GRMN:4315 Contemporary German Civilization
3 s.h.
Government and political structure, economy, mass media, education, social and cultural life of Germany, Austria, Switzerland from the end of World War II to present. Taught in German. Offered spring semesters of odd years. Prerequisites: GRMN:3103 or GRMN:3104 or GRMN:3501. GE: International and Global Issues.

GRMN:4540 Literature in Film
3 s.h.
Representative texts of German literature with film adaptations as specific readings. Taught in German. Requirements: GRMN:3501 or one upper-level literature/culture course taught in German.

GRMN:4589 Tyrants and Terror
3 s.h.
Introduction to literature and adaptations in film from 1750 to the present; artists' and writers' views of appalling events and historical figures; application of creative role playing to better understand structural and psychological components and describing and generating emotions; readings range from Schiller's classical dramatization of the Wilhelm Tell myth to recent Nobel-prize winner Herta Mueller writing about communist Romania. Prerequisites: GRMN:2002 and GRMN:3501. Requirements: two years of German language.

GRMN:4643 Witch Trials: Fact and Fiction
3 s.h.
Historical construction and fictional representation of women and men persecuted as witches and witchmasters in German-speaking countries. Prerequisites: GRMN:3501.

GRMN:4730 Beautiful Souls and Scandalous Writing
3 s.h.
Varied works of and about the 18th century; fairy tales, plays, short novels, poems, and other texts by authors such as Lichtenberg, Goethe, Naubert, Schiller, Schlegel, Sueskind; gender roles ascribed to women and men. Prerequisites: GRMN:2002.

GRMN:4850 Senior Seminar
arr.
Capstone course for majors in their last year; online graduation portfolio. Prerequisites: GRMN:3103 and GRMN:3104. Requirements: German major and undergraduate standing.

GRMN:4900 Individual German
arr.
Requirements: German major or minor.
GRMN:4990 Honors Program in German 3 s.h.
Individual work in literature, linguistics, and culture.
Requirements: three years of college-level German and g.p.a. of at least 3.50 in German.

GRMN:4991 Honors Research and Thesis 3 s.h.
Prerequisites: GRMN:4990. Requirements: honors standing.

German in Translation
GRMN:4512 Topics in Global and Transnational Culture 3-4 s.h.
In-depth look at a theme in cultural expression arising from interactions between countries and regions; focus on contemporary or historical issues; use of materials ranging from literature and the visual arts to music, mass media, and more; general processes through which cultures are formed in mutual and uneven relationships; research project. Recommendations: completion of an international and global issues GE course. Same as WLLC:4512, ARAB:4512.

Graduate
Graduate Nonmajors
Graduate students not pursuing a degree in German also may take GRMN:1020 Intensive Elementary German and GRMN:2020 Intensive Intermediate German; see "Lower-Level Undergraduate" above.

GRMN:5000 German Reading for Graduate Students 3 s.h.
Grammar review, vocabulary building, extensive reading of sophisticated texts. Offered spring semesters. Prerequisites: GRMN:1002 or GRMN:1010 or GRMN:1020. Requirements: non-German graduate standing.

Graduate Students in German
GRMN:5001 Teaching and Learning Languages 3 s.h.
Readings in pedagogical theory and practice, second language acquisition; experience designing activities for teaching and assessment with critiques based on current theories and approaches; development of reflective practices toward one's language teaching. Same as WLLC:5000, SLA:5000, FREN:5000, SPAN:5000.

GRMN:6632 Crossing Borders Proseminar 2-3 s.h.

GRMN:6635 Crossing Borders Seminar 2-3 s.h.

GRMN:6920 Multimedia and Second Language Acquisition 3 s.h.
Foreign language multimedia in context of current second language acquisition theories and research; readings on interactivity, interface design, feedback, learner control; acquisition of vocabulary, grammar, and culture. Requirements: foreign language teaching methodology course. Same as SLA:6920, FREN:6920, SPAN:6920.

GRMN:7000 Advanced Studies arr.
Special problems in German literature and linguistics. Requirements: German graduate standing.

GRMN:7300 Master's Thesis arr.

GRMN:7400 Ph.D. Dissertation arr.
Global Health Studies

**Director, Division of Interdisciplinary Programs**
- Helena R. Dettmer

**Director, Global Health Studies**
- Christopher A. Squier

**Undergraduate minor:** global health studies  
**Undergraduate certificate:** global health studies  
**Graduate certificate:** global health studies  
**Faculty:** [http://clas.uiowa.edu/global-health-studies/faculty](http://clas.uiowa.edu/global-health-studies/faculty)  
**Web site:** [http://clas.uiowa.edu/global-health-studies](http://clas.uiowa.edu/global-health-studies)

Education, research, and practice in global health places a priority on improving health and achieving equity for all people worldwide. Issues in the field include social determinants of health, health care disparities, infectious and noncommunicable diseases, environmental challenges, and human rights as well as economic development, health policy, and health systems.

The University of Iowa’s Global Health Studies Program examines the complex processes influencing health and disease around the world. It considers not only the manifestations of significant diseases and public health and health care systems, but also the underlying forces and institutions—such as technology, politics, culture, legal structure, history, and economics—that collectively influence patterns of health and disease.

The Global Health Studies Program equips its students to:
- Identify the nature, magnitude, and distribution of factors that contribute to excess morbidity and mortality, including disparities in health status by gender, race, ethnicity, rural or urban location, and economic status;
- Understand how commerce, labor, food supply and sustainability, the environment, climate change and natural disasters, pharmaceuticals, international aid, human rights, and conflict may contribute to health status; and
- Be aware of and able to assess the appropriateness of intervention strategies to promote health and to address major health problems, particularly in low-resource settings, and be able to evaluate the effectiveness and sustainability of such interventions.

The Global Health Studies Program attracts undergraduate, graduate, and professional students from a wide range of disciplines, including international studies, anthropology, public health, health and pre-health sciences, health economics, nursing, environmental engineering, history, law, business, journalism, social work, and education.

The Global Health Studies Program is one of the academic units in the Division of Interdisciplinary Programs (p. 226).

### Undergraduate and Graduate Programs of Study

- **Certificate in Global Health Studies (undergraduate and graduate)**
- **Minor in global health studies (undergraduate)**

The College of Liberal Arts and Sciences grants the undergraduate certificate and minor; the Graduate College confers the graduate certificate.

### Certificate

The Certificate in Global Health Studies requires 18 s.h. of credit. Students must maintain a g.p.a. of at least 3.00 in work for the certificate.

The undergraduate certificate program is open to current University of Iowa undergraduate students and to all individuals who hold a bachelor's degree, but are not enrolled in a graduate or professional degree program. Undergraduates may earn the certificate or the minor in global health studies, but not both. Students in the College of Pharmacy who have earned the Pharm.D. degree may earn an undergraduate global health studies certificate.

The graduate certificate is open to University of Iowa graduate and professional students except for those in the College of Pharmacy who have earned the Pharm.D. degree; they are awarded the undergraduate certificate.

Admission to the certificate program is competitive. Applicants must be in good academic standing and must be able to demonstrate interest in and understanding of the field of global health. For application forms and deadline information, contact the Global Health Studies Program advisor.

Work for the certificate includes core courses, electives, an international experience that culminates in a public presentation and written report, and study of a world language. Students must earn at least 15 s.h. of credit for the certificate in courses numbered 3000 or above taken at the University of Iowa. They may choose courses offered by the Global Health Studies Program (see "Courses" below) and those offered by other departments and programs (see "Associated Courses" below).

Students may be granted credit toward the certificate for course work they completed up to two years before beginning the program. Graduate and professional students who would like to count credit from a degree program toward the global health studies certificate should consult their major academic programs.

The Certificate in Global Health Studies requires the following work.

### CORE COURSES

All of these:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>GHS:3010 Identifying and Developing a Global Health Project (may be repeated for elective credit)</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>GHS:3020 Proseminar in Global Health</td>
<td>1 s.h.</td>
</tr>
<tr>
<td>GHS:3030 Global Health Conference (may be repeated for elective credit)</td>
<td>1 s.h.</td>
</tr>
<tr>
<td>GHS:3720 Global Health Seminar</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>
GHS:4210/EPID:4210/OEH:4210 International Health 3 s.h.

**ELECTIVES**

Students complete 7 s.h. of approved electives chosen from the lists under "Associated Courses" and "Courses" below. They may petition to use other courses as electives if they can demonstrate that the courses include substantial material related to global health. Students may apply up to 3 s.h. of academic credit earned for research, internship, or study abroad experiences to the elective requirement. Contact the Global Health Studies Program for details.

**INTERNATIONAL EXPERIENCE**

Students must complete an international experience in which they systematically address an important global health issue. The experience typically takes place in an international setting and lasts eight weeks. The international experience may be completed as part of a study abroad program, a service learning course, an internship, a volunteer experience, or an independent research project.

Projects require approval by the Global Health Studies Program steering committee and must be supervised by a faculty member. Students may apply for an international travel scholarship ($1,000); other financial support may be available for some projects. Visit International Experience on the program’s web site for more information.

**Language Study**

Students should complete four semesters of modern language study or course work that fulfills or is equivalent to the College of Liberal Arts and Sciences General Education Program (p. 313) World Languages requirement.

The Global Health Studies Program steering committee may require students to take additional language study in preparation for a research or internship program. Students interested in learning an infrequently taught language to facilitate their participation in an international experience should investigate the Autonomous Language Learning Network (ALLNET).

**Public Presentation and Report**

Certificate requirements culminate in a public presentation and report. Each student presents the results of his or her international experience in GHS:3010 Identifying and Developing a Global Health Project or in an equivalent public forum. Students also must submit a 10-12 page report that summarizes their international experience.

**Minor**

The minor in global health studies requires a minimum of 15 s.h., including 12 s.h. in courses numbered 3000 or above taken at the University of Iowa. Students must maintain a g.p.a. of at least 2.00 in all courses for the minor and in all UI courses for the minor. Course work in the minor may not be taken pass/nonpass. Students may earn either the certificate or the minor in global health studies, but not both.

The minor is interdisciplinary, designed for undergraduates who wish to study health issues in a global context. Each student's plan of study for the minor is developed according to the student's interests and in consultation with a program advisor. Students may choose courses from those offered by the Global Health Studies Program (see "Courses" below) or by other departments and programs (see "Associated Courses" below); they should choose course work from at least two different disciplines. Students are strongly encouraged to include one of the core courses required for the Certificate in Global Health Studies in their plan of study for the minor. The program highly recommends that students complete a period of study abroad focused on global health issues.

**Activities and Resources**

University of Iowa global health studies faculty members conduct research at a variety of sites worldwide, including South India, Haiti, South Africa, and Romania. Students in the program are eligible to participate in experiential learning activities at those locations, as well as at other sites. A variety of funding resources are available, including the Stanley Award for undergraduate and graduate research. Contact the Global Health Studies Program for details.

**Associated Courses**

In addition to courses offered by the Global Health Studies Program (see “Courses” below), students may use the following courses to complete requirements for the certificate or minor.

**AGING STUDIES**

ASP:1800 Basic Aspects of Aging 3 s.h.

**COMMUNITY AND BEHAVIORAL HEALTH**

CBH:5205 Social Determinants of Health 3 s.h.
CBH:5220 Health Behavior and Health Education 3 s.h.

**ECONOMICS**

ECON:3760 Health Economics 3 s.h.

**EDUCATION**

EPLS:5195 Research in Cross-Cultural Settings 3 s.h.

**OCCUPATIONAL AND ENVIRONMENTAL HEALTH**

OEH:4240 Global Environmental Health 3 s.h.

**PUBLIC HEALTH**

MPH:4101 Introduction to Public Health 3 s.h.

**Courses**

**Lower-Level Undergraduate**

GHS:1029 First-Year Seminar 1 s.h.
Introduction to intellectual life of the University; opportunity to work closely with a faculty member or senior administrator; active participation to ease transition to college-level learning.

GHS:1100 Contraception Across Time and Cultures 3 s.h.
Methods and history of contraception and abortion; issues of unwanted pregnancy and birth control in fiction, film, and media around the world. Same as WLLC:1100, CLSA:1100.
GHS:1181 Ancient Medicine
Thematic examination of theories and practices of Greco-Roman physicians, which in turn became the medical tradition of medieval Islamic world and European medicine until mid-19th century; historical medical terms, theories, and practices. GE: Historical Perspectives. Same as CLSA:1181.

GHS:2000 Introduction to Global Health Studies
Global health as a study of the dynamic relationship between human health and social, biological, and environmental factors that drive the spread of disease; core areas of global health research that may include health inequalities, maternal and child health, infectious diseases, nutrition, environmental health, and health interventions. Same as ANTH:2103.

GHS:2080 The Cultural Politics of HIV-AIDS
Complex historical shifts in cultural perceptions about HIV-AIDS in the U.S. and transnationally; controversies around HIV-AIDS and their links with questions of gender and sexuality; how HIV-AIDS subsequently became the basis of a transnational industry comprising nongovernmental organizations, donors, and activists across the global north and south, starting from 1980s in the U.S. when HIV-AIDS first emerged into public sphere as a gay disease; link between HIV-AIDS and ideologies of development or progress, neocolonialism, and emergence of lesbian, gay, bisexual, transgender, intersex, and questioning (LGBTIQ) movements in many parts of world. Recommendations: background in gender studies, and completion of Rhetoric or at least one social sciences course. Same as GWSS:2080.

GHS:2150 Natural Environmental Systems
Environmental chemistry and biology of air, water, and soil quality, air and water pollution, limnology, global atmospheric change, fate and transport of pollutants; hazardous substances, risk analysis, standard setting. Prerequisites: CHEM:1110. Same as CEE:2150.

GHS:2164 Culture and Healing for Future Health Professionals
Health professions increasingly focused on how to best provide health care to culturally diverse populations; introduction to key cultural and social influences on sickness and healing; worldwide examples. Same as ANTH:2164.

GHS:2181 The Anthropology of Aging
Comparative anthropological perspective on aging; ethnographies from diverse contexts used to examine intersections of kinship, religion, health, and medicine in later life. Same as ANTH:2181, ASP:2181.

GHS:2320 Anthropological Perspectives on Human Infectious Disease: Origins and Evolution
Origin and evolution of important infectious diseases in human history; biological evolution of infectious agents and biocultural responses to emerging infectious diseases; primary focus on viruses and bacteria; selected world problems from an anthropological perspective; current dilemmas and those faced by diverse human groups in recent times and distant past. Same as ANTH:2320.

GHS:3010 Identifying and Developing a Global Health Project
Preparation for an international experience (study abroad, service learning, volunteering, internship, or independent research project); addressing a global health issue in a systematic way.

GHS:3015 Transnational Sexualities
How ideas about normative and nonnormative sexuality, gender/sexual identities, and related social movements travel across geographical, political, and cultural boundaries; potentials and limits of using conceptual frameworks (i.e., sexuality, gender, LGBT, queer) across the west and global south; how sexuality always intersects with race, class, nationhood, and transnational systems of power; power structures that shape gender/sexuality through a transnational approach; connection of inequalities within the United States with those across the world. Same as GWSS:3010.

GHS:3020 Proseminar in Global Health
Important health problems and issues of a global and interrelated nature that affect the developed and developing world.

GHS:3030 Global Health Conference
Annual research conference on major global health issues.

GHS:3035 Engaging in Global Health
How to become a participant in promoting health throughout the world; student peers and global health professionals share their experiences in global health; how professionals and volunteers work in a broad variety of settings; working with government-based programs, international organizations (e.g., UNICEF, World Vision), health care agencies, faith-based organizations, industry, and academic institutions; various ways to become engaged and be involved in global health.

GHS:3040 Health in Mexico
Use of anthropological perspectives to examine disease, healing systems, and ideas about health and the body in Mexico and its diaspora; relationships between structural conditions and historical and political transformations; ideas about gender and race; chronic and acute disease in Mexico; conquest and disease; racialized bodies; sexual health; biomedicine; shamanism; immigration and health; pollution and narcoviolence; readings in English. Same as ANTH:3111.

GHS:3050 Global Aging
Demographic factors that contribute to the world wide phenomena of population aging in context of WHO Active Aging and the United Nation's Principles for Older Persons frameworks. Same as SSW:3135, ASP:3135.

GHS:3060 Studies in Complementary and Alternative Medicine

Topics vary; may include studies in mind-body medicine; complementary and alternative medicine (CAM); group of medical and health care systems, practices, and products that are not considered to be part of conventional medicine; treatments used instead of standard ones (alternative treatments); nonstandard treatments used together with standard ones (complementary medicine); examples of CAM therapies (acupuncture, chiropractic, herbal medicines); approaches widely used in other parts of the world that may represent an important component of health care in a country (e.g., ayurvedic medicine in India).

**GHS:3070 Hungry Planet: Global Geographies of Food**

Societal and environmental implications of past, current, and future global food supply examined from a geographical perspective; focus on questions of who eats what, where, and why; transformative history of agriculture, modern agribusiness and alternative food supplies, geopolitical implications of food production, food scarcity and rising food costs, urban versus rural agriculture, the obesity epidemic versus malnutrition, and the future of food. Same as GEOG:3070.

**GHS:3102 Medical Anthropology**

Major theoretical, methodological approaches; international health and development; biomedicine as a cultural system; ethnomedicine; human reproduction, epidemiology, ethnopsychiatry. Prerequisites: ANTH:1101 or ANTH:2100. Same as ANTH:3102, CBH:3102.

**GHS:3110 Health of Indigenous Peoples**

Health problems and services for indigenous populations worldwide, from perspective of Fourth World postcolonial politics. Prerequisites: ANTH:1101. Same as ANTH:3110, AINS:3110.

**GHS:3113 Religion and Healing**


**GHS:3131 Health Care and Health Reforms in Russia**

Societal changes and their continuing effect on the Russian health care system since 1991; guest lectures from public health, nursing, medicine, cultural anthropology. Same as SLAV:3131.

**GHS:3141 Design With the Developing World**

Experience working on interdisciplinary teams to solve problems of the developing world; technologies for improving water and sanitation, energy, housing, and health; community building strategies, participatory methods, other techniques essential to good design; service-learning component. Recommendations: junior or higher standing. Same as CEE:3141.

**GHS:3150 Media and Health**

Potential and limits of mass media's ability to educate the public about health; research and theory on the influence of information and entertainment media; theories, models, assumptions of mass communication in relation to public health issues. Same as JMC:3150, CBH:3150.

**GHS:3151 The Anthropology of the Beginnings and Ends of Life**

Examination of diverse understandings of birth and death, drawing on anthropological analysis of personhood, kinship, ritual, and medicine; how social inequality and new technologies shape human experience at life's margins. Prerequisites: ANTH:1101 or ANTH:2100. Same as ANTH:3151, ASP:3151.

**GHS:3152 Anthropology of Caregiving and Health**

Diverse understandings and practices of care around the world; focus on relationships between caregiving practices and health across the life course. Same as ANTH:3152, ASP:3152.

**GHS:3191 Sustainable Development: India and the Global Context**

Introduction to development in India; critical examination of current discourses on domestic sociological, economic, and ecological environmental effects of the current model of development; taught in Mysore, India.

**GHS:3192 Environment and Health in Modern India**

Introduction to India's environmental and health traditions; major contemporary scenarios; taught in Mysore, India.

**GHS:3326 Infectious Disease and Human Evolution**

Infectious disease as a central and important role in evolution of modern humans; impact of important infectious diseases on human history through primary literature. Recommendations: evolutionary theory background or interest. Same as ANTH:3326.

**GHS:3327 The Politics of Progress: NGOs, Development, and Sexuality**

How nonprofit sector increasingly plays a significant role in countering socioeconomic inequalities in the United States and global south; role of nonprofit organizations in relation to governmental policies of development, transnational funders, and ideas of sexual progress; critics of development institutions' arguments that western ideas of progress impose and adversely affect groups they claim to empower, yet also may foster struggles for social justice that go beyond development policy; examination of transnational nonprofit sector in relation to gender/sexuality and how it impacts women and gender/sexual minorities around the world. Recommendations: background in gender studies or social sciences. Same as GWSS:3326.

**GHS:3355 Understanding Health and Disease in Africa**

3 s.h.
Applications of GIS and spatial analysis for studying health outcomes and exposure to environmental contaminants at different geographical scales. Same as GEOG:4150.

GHS:4160 History of Public Health  3 s.h.
State-endorsed measures to avert or control disease in society. Same as HIST:4160.

GHS:4162 History of Global Health  3 s.h.
Foremost problems of health and disease in colonial and postcolonial societies; topical approach. Same as HIST:4162.

GHS:4210 International Health  3 s.h.
Urgent health problems in the developing world and among disadvantaged populations in developed countries; biological, social, cultural, political aspects of international health problems; applications of research methods from epidemiology, environmental health, social sciences. Same as EPID:4210, OEH:4210.

GHS:4220 U.S. and Global Environmental Health Policy  3 s.h.
Major concerns in environment and human health, legislation enacted to deal with these concerns; emphasis on contemporary issues. Offered fall semesters of odd years. Requirements: for OEH:4220 — OEH:4240; for CEE:4220 — CEE:2150. Same as CEE:4220, OEH:4220.

GHS:4230 Health Experience of Immigrants, Migrants, and Refugees  3 s.h.

GHS:4275 Research Methods in Disaster Studies  3 s.h.
Epidemiologic study of disasters and their health consequences; research to identify and reduce health effects, research in context of response and preparedness. Same as EPID:4520, OEH:4520.

GHS:4340 Global Health and Global Food  3 s.h.
Practices, patterns, and policies that contribute to the epidemics of obesity, diabetes, and heart disease in wealthy populations; environmental degradation, hunger, and malnutrition among impoverished populations; strategies to meet food and agricultural needs for the world; local/global aspects or perspectives on food/health concerns for Iowa and the international community. Same as HHP:4340.

GHS:4508 Medicine and Public Health in Latin America, 1820-2000  3 s.h.
Survey of major topics in modern Latin American history in relation to development of medicine and public health. Same as HIST:4508.

GHS:4600 Global Health and Human Rights  2-3 s.h.
Requirements: sophomore or higher standing.

GHS:4605 Disease, Politics, and Health in South Asia  2-4 s.h.
South Asia's long-term success lengthening lives and stopping disease, weighed against its continuing burden of infection, violence, pollution, and class-based suffering. Same as HIST:4605.

GHS:4990 Special Projects in Global Health  arr.
GHS:4991 Honors Thesis in Global Health Studies 3 s.h.
Completion of honors thesis in consultation with a faculty mentor.

Graduate

GHS:5000 Graduate Seminar in Global Health 2 s.h.
In-depth discussion and analysis of rotating topics pertinent to global health studies.

GHS:5455 Health Insurance and Managed Care 3 s.h.
History and theory of insurance, comparative health systems, health systems and networks, HMOs, public health insurance, care for uninsured; emphasis on public policy. Prerequisites: HMP:5005. Corequisites: PHAR:6330 or HMP:5410. Same as HMP:5450.

GHS:6550 Epidemiology of Infectious Diseases 3 s.h.
Underlying epidemiological concepts of infection disease, including causation and surveillance; prevention and control; case studies. Offered fall semesters. Prerequisites: EPID:4400. Same as EPID:6550.
Health and Human Physiology

Chair
• Kelly J. Cole

Undergraduate majors: health and human physiology (B.A.); human physiology (B.S.); athletic training (B.S.); sport and recreation management (B.S.); therapeutic recreation (B.S.)

Undergraduate minors: human physiology; physical activity and nutrition science; sport and recreation management

Graduate degrees: M.A. in leisure studies; M.S. in health and human physiology; Ph.D. in health and human physiology

Faculty: http://clas.uiowa.edu/hhp/people/faculty

Web site: http://clas.uiowa.edu/hhp/

The Department of Health and Human Physiology offers undergraduate majors and minors and graduate degree programs in health and human physiology and related areas. The department also administers the Certificate in Disability Studies (p. 224). In addition, the Department of Health and Human Physiology is home to the Health and Physical Activity Skills Program, which offers courses that provide instruction and practice in lifetime sports, fitness training, and wellness activities aimed at enhancing physical health and well-being. Undergraduates in all majors may use several health and human physiology courses to fulfill requirements of the College of Liberal Arts and Sciences General Education Program (p. 313). The department’s First-Year Seminar is designed for entering undergraduate students.

Undergraduate Programs of Study

• Major in health and human physiology (Bachelor of Arts)
• Major in human physiology (Bachelor of Science)
• Major in athletic training (Bachelor of Science)
• Major in sport and recreation management (Bachelor of Science)
• Major in therapeutic recreation (Bachelor of Science)
• Minor in human physiology
• Minor in physical activity and nutrition science
• Minor in sport and recreation management

Students may complete a major in health and human physiology (B.A.) or a major in human physiology (B.S.), but not both.

Students majoring in health and human physiology (B.A.) or human physiology (B.S.) or athletic training (B.S.) may not earn the minor in human physiology or the minor in physical activity and nutrition science.

Students majoring in sport and recreation management (B.S.) may not earn the minor in sport and recreation management.

Bachelor of Arts: Health and Human Physiology

The Bachelor of Arts with a major in health and human physiology requires a minimum of 120 s.h., including work for the major, which varies by track. The health promotion track requires a total of 49-51 s.h. of work for the major; the health studies track requires 40-42 s.h. of work for the major; and the exercise science track requires 51-53 s.h. of work for the major. Students must maintain a g.p.a. of at least 2.00 in all courses for the major and in all UI courses for the major. They also must complete the College of Liberal Arts and Sciences General Education Program (p. 313).

The health promotion track is intended for students seeking careers that promote wellness in the community and the workplace. The health studies track is designed for students who want a more flexible health science curriculum. The exercise science track is intended for students seeking careers as professionals in fitness and in strength and conditioning.

Students majoring in health and human physiology (B.A.) may not earn a second degree in human physiology (B.S.).

Students in all tracks are required to complete a set of common requirements as well as additional courses required specifically for their track.

The major in health and human physiology requires the following course work.

Common Requirements

Each track requires the following science and math foundation (minimum of 10 s.h.) and the departmental core (15 s.h.).

SCIENCE AND MATH FOUNDATION

All students complete three foundation courses (minimum of 10 s.h.): one each in chemistry, biology, and mathematics or statistics.

Chemistry—one of these:
CHEM:1080 General Chemistry II 3 s.h.
CHEM:1120 Principles of Chemistry II 4 s.h.

Biology—one of these:
BIOL:1140 Human Biology 4 s.h.
BIOL:1141 Introductory Animal Biology 4 s.h.
BIOL:1411 Foundations of Biology 4 s.h.

Mathematics or statistics—one of these:
MATH:1020 Elementary Functions 4 s.h.
MATH:1380 Calculus and Matrix Algebra for Business 4 s.h.
MATH:1440 Mathematics for the Biological Sciences 4 s.h.
MATH:1460 Calculus for the Biological Sciences 4 s.h.
MATH:1850 Calculus I 4 s.h.
PSQF:4143/STAT:4143 Introduction to Statistical Methods 3 s.h.
STAT:1020 Elementary Statistics and Inference 3 s.h.
Health and Human Physiology

STAT:1030 Statistics for Business 4 s.h.
STAT:3510 Biostatistics 3 s.h.

DEPARTMENTAL CORE
All students must complete the five-course departmental core (15 s.h.).

All of these:
HHP:1100 Human Anatomy 3 s.h.
HHP:1300 Fundamentals of Human Physiology 3 s.h.
HHP:2200 Physical Activity and Health 3 s.h.
HHP:2310 Nutrition and Health 3 s.h.
HHP:3400 Applied Exercise Physiology 3 s.h.

Health Promotion Track Requirements
Health promotion track students also complete the following health promotion core courses (15 s.h.) and guided electives (9 s.h.) in addition to the courses listed under "Common Requirements" above (math and science foundation and departmental core).

HEALTH PROMOTION: CORE
All of these:
HHP:3200 Health Behavior and Health Promotion 3 s.h.
HHP:3430 Community and Worksite Health Promotion 3 s.h.
HHP:4200 Metabolic Exercise Testing and Prescription 3 s.h.
HHP:4320 Nutrition Interventions 3 s.h.
HHP:4420 Planning and Evaluating Health Interventions 3 s.h.

HEALTH PROMOTION: GUIDED ELECTIVES
Students must complete at least 9 s.h. selected from the courses below, including at least 6 s.h. in courses numbered 3000 or above.

HHP:2130 Human Development Through the Life Span 3 s.h.
HHP:3050 Obesity: Causes, Consequences, Prevention, and Treatment 3 s.h.
HHP:3100 Health Literacy 3 s.h.
HHP:3420 College Health Education 3 s.h.
HHP:3440 Physical Activity and Healthy Communities 3 s.h.
HHP:3850 Promoting Health Globally 3 s.h.
HHP:4195 Exercise Programming for Special Populations 3 s.h.
HHP:4210 Musculoskeletal Exercise Testing and Prescription 3 s.h.
HHP:4390 Understanding Human Disease 3 s.h.
HHP:4400 Health Promotion Clinical Practicum (may be taken twice) 1 s.h.
HHP:4405 Health Promotion Community and Worksite Practicum (may be taken twice) 1 s.h.
HHP:4440 Physiology of Nutrition 3 s.h.
HHP:4500 Undergraduate Independent Study arr.
HHP:4950 Health Promotion Honors Problems 3-4 s.h.
ACCT:2100 Introduction to Financial Accounting 3 s.h.
ASP:1800 Basic Aspects of Aging 3 s.h.
JMC:3150 Media and Health 3 s.h.
RCE:4175 Motivational Interviewing 3 s.h.
RCE:4185 Introduction to Substance Abuse 3 s.h.

Health Studies Track Requirements
In addition to completing the courses listed under "Common Requirements" above (math and science foundation and departmental core), health studies track students must earn at least 15 s.h. in courses chosen from the list below, including 12 s.h. in courses numbered 3000 or above.

HHP:1110 Human Anatomy Laboratory 1 s.h.
HHP:1310 Human Physiology Laboratory 1 s.h.
HHP:2130 Human Development Through the Life Span 3 s.h.
HHP:2500 Psychological Aspects of Sport and Physical Activity 3 s.h.
HHP:3000 Equity Issues in the Health Sciences 3 s.h.
HHP:3030 Coaching for Health and Wellness 3 s.h.
HHP:3050 Obesity: Causes, Consequences, Prevention, and Treatment 3 s.h.
HHP:3300 Human Growth and Motor Development 3 s.h.
HHP:3440 Physical Activity and Healthy Communities 3 s.h.
HHP:3655 Emotional and Psychological Aspects of Health 3 s.h.
HHP:4195 Exercise Programming for Special Populations 3 s.h.
HHP:4220 Biomechanics of Human Motion 3 s.h.
HHP:4230 Motor Learning: Theory and Application 3 s.h.
HHP:4390 Understanding Human Disease 3 s.h.
HHP:4440 Physiology of Nutrition 3 s.h.
HHP:4500 Undergraduate Independent Study arr.

Exercise Science Track Requirements
Exercise science track students complete the following exercise science core courses (18 s.h.) and guided electives (8 s.h.) in addition to the courses listed under "Common Requirements" above (the math and science foundation and the departmental core).

EXERCISE SCIENCE: CORE
All of these:
HHP:2350 Biomechanics of Sport and Physical Activity 3 s.h.
HHP:2500 Psychological Aspects of Sport and Physical Activity 3 s.h.
HHP:4200 Metabolic Exercise Testing and Prescription 3 s.h.
HHP:4210 Musculoskeletal Exercise Testing and Prescription 3 s.h.
HHP:4310 Sport and Exercise Nutrition 3 s.h.
HHP:4390 Understanding Human Disease 3 s.h.

EXERCISE SCIENCE: GUIDED ELECTIVES
Students must complete at least 8 s.h. from the courses below, including at least 6 s.h. in courses numbered 3000 or above.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATEP:2030</td>
<td>Basic Athletic Training</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>HHP:1110</td>
<td>Human Anatomy Laboratory</td>
<td>1 s.h.</td>
</tr>
<tr>
<td>HHP:1310</td>
<td>Human Physiology Laboratory</td>
<td>1 s.h.</td>
</tr>
<tr>
<td>HHP:2210</td>
<td>Principles of Exercise Leadership</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>HHP:3030</td>
<td>Coaching for Health and Wellness</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>HHP:3050</td>
<td>Obesity: Causes, Consequences, Prevention, and Treatment</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>HHP:3148</td>
<td>Introduction to Personal Training</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>HHP:3300</td>
<td>Human Growth and Motor Development</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>HHP:3500</td>
<td>Human Physiology</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>HHP:3650</td>
<td>Advanced Sport and Exercise Psychology</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>HHP:3860</td>
<td>Leadership Theory for Health and Fitness</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>HHP:4150</td>
<td>Clinical Exercise Physiology</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>HHP:4190</td>
<td>Scientific Basis of Training for Elite Performance</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>HHP:4195</td>
<td>Exercise Programming for Special Populations</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>HHP:4230</td>
<td>Motor Learning: Theory and Application</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>HHP:4350</td>
<td>Practicum in Personal Training</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>HHP:4360</td>
<td>Practicum in Group Fitness</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>HHP:4370</td>
<td>Practicum in Strength and Conditioning</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>SRM:3151</td>
<td>Liability in Sport and Recreation</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>SPST:2081</td>
<td>Theory and Ethics of Coaching</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

The department recommends that exercise science students also complete the following two courses.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATEP:1000</td>
<td>First Aid and CPR</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>PSY:1001</td>
<td>Elementary Psychology</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

### Bachelor of Science: Human Physiology

The Bachelor of Science with a major in human physiology requires a minimum of 120 s.h., including 57 s.h. of work for the major (26 s.h. in health and human physiology and 31 s.h. in required cognate courses). Students must maintain a g.p.a. of at least 2.00 in all courses for the major and in all UI courses for the major. They also must complete the College of Liberal Arts and Sciences General Education Program (p. 313).

The major in human physiology is designed primarily for individuals who intend to continue their education beyond the B.S. in the health professions, including medicine, dentistry, optometry, physician assistant, physical therapy, and podiatry, and for those who intend to pursue graduate degrees in basic life sciences.

Students majoring in human physiology (B.S.) may not earn a second degree in health and human physiology (B.A.).

In addition to course work required for the major, students are encouraged to include specific electives to complete the credit required for graduation; see “Recommended Electives” below. The department recommends that students fulfill the General Education Program’s Natural Sciences requirement by taking CHEM:1110 Principles of Chemistry I, CHEM:1120 Principles of Chemistry II, and BIOL:1411 Foundations of Biology. It also recommends that they fulfill the Social Sciences requirement with PSY:1001 Elementary Psychology.

The major in human physiology requires the following course work.

#### HUMAN PHYSIOLOGY

All of these:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HHP:1100</td>
<td>Human Anatomy</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>HHP:1110</td>
<td>Human Anatomy Laboratory</td>
<td>1 s.h.</td>
</tr>
<tr>
<td>HHP:1310</td>
<td>Human Physiology Laboratory</td>
<td>1 s.h.</td>
</tr>
<tr>
<td>HHP:3500</td>
<td>Human Physiology</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

At least 18 s.h. from these:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HHP:3110</td>
<td>Advanced Anatomy Laboratory</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>HHP:3300</td>
<td>Human Growth and Motor Development</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>HHP:3450</td>
<td>Immunology in Health and Disease</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>HHP:3510</td>
<td>Advanced Human Physiology Laboratory</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>HHP:3900</td>
<td>Writing for Health and Human Physiology</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>HHP:4130</td>
<td>Skeletal Muscle Physiology</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>HHP:4150</td>
<td>Clinical Exercise Physiology</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>HHP:4200</td>
<td>Metabolic Exercise Testing and Prescription</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>HHP:4210</td>
<td>Musculoskeletal Exercise Testing and Prescription</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>HHP:4220</td>
<td>Biomechanics of Human Motion</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>HHP:4230</td>
<td>Motor Learning: Theory and Application</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>HHP:4250</td>
<td>Human Pathophysiology</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>HHP:4300</td>
<td>Neural Control of Posture and Movement</td>
<td>3 s.h.</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HHP:4410</td>
<td>Exercise Physiology</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>HHP:4440</td>
<td>Physiology of Nutrition</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>HHP:4450</td>
<td>Genetic Basis of Disease</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>HHP:4460</td>
<td>Cardiovascular Physiology</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>HHP:4470</td>
<td>Physiology of Aging</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>HHP:4480</td>
<td>Introduction to Human Pharmacology</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>HHP:4500</td>
<td>Undergraduate Independent Study</td>
<td>arr.</td>
</tr>
<tr>
<td>HHP:4510</td>
<td>Energy Metabolism in Health and Disease</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HHP:4900</td>
<td>Honors Research II</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>BIOL:3110</td>
<td>Biochemistry</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>BIOL:2254</td>
<td>Endocrinology</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>BIOL:2512</td>
<td>Fundamental Genetics</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>BIOL:2603</td>
<td>Mechanisms of Aging</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>BIOL:2723</td>
<td>Cell Biology</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>BIOL:2753</td>
<td>Introduction to Neurobiology</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>BIOL:3233</td>
<td>Introduction to Developmental Biology</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>MICR:2157</td>
<td>General Microbiology</td>
<td>5 s.h.</td>
</tr>
</tbody>
</table>

### COGNATE AREAS

Students must earn a minimum of 31 s.h. in cognate areas—subjects outside of human physiology—by completing courses from the following lists.
Biology
This sequence:
Biol:1411-Biol:1412 Foundations of Biology - Diversity of Form and Function  8 s.h.

Chemistry
Students must complete CHEM:1110 before they may register for CHEM:1120.
Both of these:
CHEM:1110 Principles of Chemistry I  4 s.h.
CHEM:1120 Principles of Chemistry II  4 s.h.
These additional chemistry courses are highly recommended.
CHEM:2210 Organic Chemistry I  3 s.h.
CHEM:2220 Organic Chemistry II  3 s.h.
CHEM:2410 Organic Chemistry Laboratory  3 s.h.

Mathematics
One of these:
MATH:1460 Calculus for the Biological Sciences  4 s.h.
MATH:1550 Engineering Mathematics I: Single Variable Calculus  4 s.h.
MATH:1850 Calculus I (or a mathematics course numbered above 1850)  4 s.h.

Physics
This sequence:
PHYS:1511-PHYS:1512 College Physics I-II  8 s.h.

Statistics
At least 3 s.h. from these:
BIOS:4120 Introduction to Biostatistics  3 s.h.
STAT:2010 Statistical Methods and Computing  3 s.h.
STAT:3510 Biostatistics  3 s.h.
STAT:4143/PSQF:4143 Introduction to Statistical Methods  3 s.h.

RECOMMENDED ELECTIVES
The department recommends that students choose from the following electives in order to complete the minimum of 120 s.h. required for a Bachelor of Science. Additional recommended courses in biology and chemistry are listed under "Courses for the Major: Cognates" above.

Anthropology
ANTH:3305 Human Osteology  3 s.h.

Biochemistry
BIOC:3110 Biochemistry  3 s.h.
BIOC:3120 Biochemistry and Molecular Biology I  3 s.h.
BIOC:3130 Biochemistry and Molecular Biology II  3 s.h.
BIOC:3140 Experimental Biochemistry  2 s.h.

Biology
BIOL:2512 Fundamental Genetics  4 s.h.
BIOL:2723 Cell Biology  3 s.h.
BIOL:2753 Introduction to Neurobiology  3 s.h.
BIOL:3244 Animal Behavior  3, 5 s.h.
BIOL:3253 Neurobiology  4 s.h.
BIOL:3343 Animal Physiology  3 s.h.
BIOL:4353 Neurophysiology  3 s.h.

Chemistry
CHEM:2210 Organic Chemistry I  3 s.h.
CHEM:2220 Organic Chemistry II  3 s.h.
CHEM:2410 Organic Chemistry Laboratory  3 s.h.
CHEM:3110 Analytical Chemistry I  3 s.h.
CHEM:3120 Analytical Chemistry II  3 s.h.
CHEM:4431 Physical Chemistry I  3 s.h.

Classics
CLSA:3750 Medical and Technical Terminology  2 s.h.

Communication Sciences and Disorders
CSD:2140 Manual Communication  1 s.h.
CSD:3116 Basic Neuroscience for Speech and Hearing  3 s.h.

Computer Science
CS:1020 Principles of Computing  3 s.h.
CS:1110 Introduction to Computer Science  3 s.h.
CS:1210 Computer Science I: Fundamentals  4 s.h.
ENGR:2730 Computers in Engineering  3 s.h.

Education
RCE:4185 Introduction to Substance Abuse  3 s.h.

Engineering
ENGR:2110 Engineering Fundamentals I: Statics  2 s.h.
ENGR:2710 Dynamics  3 s.h.
ENGR:2750 Mechanics of Deformable Bodies  3 s.h.

English
CNW:2680 The Art and Craft of Creative Nonfiction  3 s.h.

Free Radical and Radiation Biology
FRRB:5000 Radiation Biology  4 s.h.

Microbiology
MICR:2157 General Microbiology  5 s.h.
MICR:3112 Pharmacy Microbiology  4 s.h.
MICR:3147 Survey of Immunology  3 s.h.
MICR:3164 Nursing Microbiology  4 s.h.

Pharmacology
PCOL:2120 Drugs: Their Nature, Action, and Use  2 s.h.
PCOL:4130 Drug Mechanisms and Actions  3 s.h.

Psychological and Brain Sciences
PSY:1001 Elementary Psychology  3 s.h.
PSY:2930 Abnormal Psychology: Health Professions  3 s.h.
**Bachelor of Science: Athletic Training**

The Bachelor of Science with a major in athletic training requires a minimum of 120 s.h., including 53 s.h. of work for the major plus one prerequisite (1 s.h.) for application to the major and several prerequisites (34-36 s.h.) to course work for the major. Students must maintain a g.p.a. of at least 2.00 in all courses for the major and in all UI courses for the major. They also must complete the College of Liberal Arts and Sciences General Education Program (p. 313).

The major provides concentrated studies and clinical experiences that lead to national certification in athletic training. The Department of Health and Human Physiology collaborates with the Department of Orthopaedics and Rehabilitation (Carver College of Medicine) to offer the major.

Athletic trainers work with active patients, including athletes, to help prevent injuries, offer advice about appropriate equipment, recognize and evaluate injuries, administer emergency treatment, and determine need for specialized medical care. Athletic trainers also work as members of health care teams involved in postinjury rehabilitation.

Employment opportunities for graduates include work as health care professionals for sports medicine clinics and hospitals; these individuals often work with secondary school athletic teams. Additional education usually is required for employment with professional, college, and university athletic teams and for specialized positions in corporations, industry, and other areas. Teacher certification is recommended but not required.

Admission to the major in athletic training is competitive; students must apply, meet technical standards, and comply with health and safety policies. They may be admitted as first-year students and begin clinical experience as sophomores. Applicants must have at least 11 s.h. of graded college credit (pass/fail credit does not count), including ATEP:1010 Exploring Athletic Training with a grade of C or higher; and they must have a g.p.a. of at least 2.50 on all undergraduate course work. Preference is given to applicants with high scholastic standing, strong writing skills, and varied athletic training and health care experience. A personal interview may be required; the athletic training program contacts applicants about interviews.

Fulfillment of admission requirements does not ensure admission to the athletic training major. The program selects candidates who appear to be best qualified for the study and practice of athletic training. Students denied admission to the major may reapply in a subsequent fall semester.

All students admitted to the major in athletic training are required to comply with entrance and periodic health screening history and immunization, which is coordinated through the program's clinical coordinator.

Students who have not formally contacted the athletic training program director before enrolling at the University of Iowa should talk to an athletic training advisor or their academic advisor upon entering the University.

Early advising for course selection is vital to ensure that students take prerequisites and sequenced skill development courses in the right order. Students should begin taking prerequisites for required major courses during their first year and should complete their final prerequisites after admission to the athletic training major.

For current information on rules, procedures, and curriculum, contact the athletic training program director.

The major in athletic training requires the following course work.

**ADMISSION PREREQUISITE**

Students must complete this course before they apply for admission to the athletic training major.

ATEP:1010 Exploring Athletic Training 1 s.h.

**PREREQUISITES TO COURSE WORK FOR THE MAJOR**

Students must complete the following courses (34-36 s.h.) as they begin course work for the major.

One of these:

- BIOL:1140 Human Biology 4 s.h.
- BIOL:1141 Introductory Animal Biology 4 s.h.
- BIOL:1411 Foundations of Biology 4 s.h.

One of these sequences:

- CHEM:1070 & CHEM:1080 General Chemistry I-II 6 s.h.
- CHEM:1110 & CHEM:1120 Principles of Chemistry I-II 8 s.h.

One of these:

- PHYS:1400 Basic Physics 4 s.h.
- PHYS:1511 College Physics I 4 s.h.

All of these:

- ATEP:1000 First Aid and CPR (or certification with adult, infant, AED) 2 s.h.
- ATEP:2030 Basic Athletic Training 3 s.h.
- HHP:1100 Human Anatomy 3 s.h.
- SRM:1045 Health for Living 3 s.h.
- PSQF:1075 Educational Psychology and Measurement 3 s.h.
- PSY:1001 Elementary Psychology 3 s.h.
- STAT:1020/PSQF:1020 Elementary Statistics and Inference (or equivalent) 3 s.h.

**COURSES FOR THE MAJOR**

Students must complete the following course work for the major (53 s.h.).

All of these:

- ATEP:2040 Clinical Sciences I 2 s.h.
Bachelor of Science: Sport and Recreation Management

The Bachelor of Science with a major in sport and recreation management requires a minimum of 120 s.h., including 48 s.h. of work for the major (27 s.h. in sport and recreation management, 12 s.h. in supporting course work from other disciplines, and 9 s.h. in field experience). Students must maintain a g.p.a. of at least 2.00 in all courses for the major and in all UI courses for the major. They also must complete the College of Liberal Arts and Sciences General Education Program (p. 313).

The sport and recreation management major prepares students for leadership in meeting the challenges of sport. Its comprehensive curriculum uses an integrative business approach and provides a collaborative environment for learning how to analyze and resolve challenges in the business and culture of sport locally, nationally, and internationally.

The major is appropriate for students who want to work with sport and club teams, intercollegiate and high school athletic programs, international sport organizations, national and international amateur sport organizations, community recreation, and firms specializing in sport marketing, sport sponsorship, and commercial fitness businesses.

Students interested in sport and recreation management learn skills for organizing, planning, and budgeting in a variety of settings. They prepare for work in positions such as activities director, community recreation specialist, campus recreation professional, and program coordinator in a park or recreation department.

The major also provides a foundation for graduate study in sport or recreation management and related graduate degree programs.

The sport and recreation management major requires the following course work.

FOUNDATION COURSES
All of these:

- SRM:1060 Contemporary Issues in Sports 3 s.h.
- SRM:3157 Managerial Operations in Sport and Recreation 3 s.h.
- SRM:3175 Sales in Sport 3 s.h.
- SRM:3178 Communications and Public Relations in Sports 3 s.h.

Students must have completed 30 s.h. before they enroll in the following courses.

All of these:

- SRM:3151 Liability in Sport and Recreation 3 s.h.
- SRM:3152 Sport and Recreation Facility Management 3 s.h.
- SRM:3153 Sport Business Practices 3 s.h.
- SRM:3158 Sport and Recreation Promotion 3 s.h.
- SRM:3172 Finance in Sport and Recreation 3 s.h.

FIELD EXPERIENCE
Students are required to complete 9 s.h. of field experience (consult with the departmental field experience coordinator).

Any combination of these courses for a minimum of 9 s.h.

- SRM:4196 Internship 9 s.h.
- SRM:4197 Sport and Recreation Business Practicum 1-3 s.h.

CONCENTRATION AREAS
Students must complete 12 s.h. in one of the following concentration areas: business studies; coaching and sport instruction; communications public relations/journalism; entrepreneurship; event management; sport and diversity; or the student-designed concentration. Some of these courses below have prerequisites; students must complete all of a course's prerequisites before they may register for the course.

Business Studies Concentration

- SRM:2065 The Experience Economy 3 s.h.
- SRM:3176 Sports Analytics for Coaches, Managers, and Other Decision Makers 3 s.h.
- SRM:3300 Writing for Sport and Recreation Managers 3 s.h.
- SRM:4198 NCAA Rules Compliance and Enforcement 3 s.h.
Communications Public Relations/Journalism Concentration

JMC:1100 Media Uses and Effects 3 s.h.
JMC:1200 Media History and Culture 3 s.h.
JMC:1500 Social Media Today 3 s.h.
JMC:2200 Communication and Public Relations 3 s.h.
JMC:3135 New Media and the Future of Sport 3 s.h.
JMC:3181 The Business of Sport Communication 3 s.h.
JMC:3182 Sport, Scandal, and Strategic Communication in Media Culture 3 s.h.
JMC:3190 Classics of Sports Journalism: From Jack London to Grantland 3 s.h.
JMC:3400 Specialized Reporting and Writing 4 s.h.
JMC:3412 Strategic Communication Writing 4 s.h.
RHET:2085 Speaking Skills 3 s.h.
SRM:3300 Writing for Sport and Recreation Managers 3 s.h.

Entrepreneurship Concentration


ECON:3690 Sports Economics 3 s.h.
ENTR:1350 Foundations in Entrepreneurship 2 s.h.
ENTR:2000 Entrepreneurship and Innovation 3 s.h.
ENTR:3100 Entrepreneurial Finance 3 s.h.
ENTR:3200 Entrepreneurial Marketing 3 s.h.
ENTR:3300 Legal Aspects of Entrepreneurship 3 s.h.
ENTR:3400 Strategic Management of Technology and Innovation 3 s.h.
ENTR:3500 Social Entrepreneurship 3 s.h.
ENTR:3595 Nonprofit Organizational Effectiveness I 3 s.h.
ENTR:3600 E-Commerce Strategies for Entrepreneurs 3 s.h.
ENTR:4400 Managing the Growth Business 3 s.h.
ENTR:4450 Professional Sports Management 3 s.h.

Event Management Concentration

Students complete the requirements as designated below. No more than 6 s.h. may be applied to this concentration if also used toward the completion of the Certificate in Event Planning (p. 289). In order to avoid duplication of course work beyond the allowed 6 s.h., students should take additional course work.

Both of these:

SRM:3147 Sport Event Management 3 s.h.
SRM:3154 Foundations of Event Management 3 s.h.

And, they must complete at least 6 s.h. from these.

SRM:2065 The Experience Economy 3 s.h.
SRM:3300 Writing for Sport and Recreation Managers 3 s.h.
BUS:3800 Business Writing 3 s.h.
ENTR:1350 Foundations in Entrepreneurship 2 s.h.
ENTR:2000 Entrepreneurship and Innovation 3 s.h.
ENTR:3500 Social Entrepreneurship 3 s.h.
ENTR:3600 E-Commerce Strategies for Entrepreneurs 3 s.h.
ENTR:4450 Professional Sports Management 3 s.h.
JMC:1500 Social Media Today 3 s.h.
RHET:2085 Speaking Skills 3 s.h.
Sport and Diversity Concentration

SRM:1040 The Good Society 3 s.h.
SRM:1072 Leisure and the Liberal Arts 3 s.h.
SRM:3300 Writing for Sport and Recreation Managers 3 s.h.
AFAM:1030 Introduction to African American Society 3 s.h.
AFAM:3925 African Americans and the Media 3 s.h.
ANTH:1401 Language, Culture, and Communication 3 s.h.
CLSA:1875 Ancient Sports and Leisure 3 s.h.
COMM:1174 Media and Society 3 s.h.
COMM:4143 Classical Rhetoric and Greek Culture 3 s.h.
HHP:2500 Psychological Aspects of Sport and Physical Activity 3 s.h.
HIST:1040 Perspectives: Diversity in American History 3 s.h.
JMC:1200 Media History and Culture 3 s.h.
JMC:3125 Media and Consumers 3 s.h.
RELS:2700 Sacred World of Native Americans 3 s.h.
RHET:2085 Speaking Skills 3 s.h.
SPAN:2700 Introduction to Latin American Studies 3 s.h.
SPST:1074/AMST:1074/GWSS:1074 Inequality in American Sport 3 s.h.
TR:1070 Perspectives on Leisure and Play 3 s.h.

Student-Designed Concentration

Students may develop a concentration in consultation with an academic advisor. They must submit a two-page proposal to the recreation and sport business committee. The proposal should provide a rationale for the student-designed concentration and a description of the student-designed concentration. The concentration requires at least 12 s.h. of course work.

Bachelor of Science: Therapeutic Recreation

The Bachelor of Science with a major in therapeutic recreation requires a minimum of 120 s.h., including 63-64 s.h. of work for the major (total credit depends on the track). Students must maintain a g.p.a. of at least 2.00 in all courses for the major and in all UI courses for the major. They also must complete the College of Liberal Arts and Sciences General Education Program (p. 313).

The therapeutic recreation program prepares students for professional work with persons who have disabilities, impairments, and illnesses. Both of the major's tracks emphasize the use of a systematic process of assessment, planning, implementation, and evaluation in order to provide recreation, leisure, and play activities to individuals and populations.

Admission to both tracks is selective; students must apply and be admitted.

The major in therapeutic recreation (child life track and inclusive recreation track) requires the following course work.

Child Life Track

The child life track requires 63 s.h. of work for the major (12 s.h. in admission prerequisites plus a total of 51 s.h. in additional courses, supporting course work from other departments, and the required internship). Students must apply and be admitted to the child life track, and they must complete the admission prerequisites before they may enter the track.

Child life specialists are professionals with expertise in child development who advance effective coping through play activities, preparation for medical procedures and operations, patient and family education, and self-expressive activities. Child life specialists provide services to support families and to promote children's mastery of varied experiences, particularly children's health care events. They provide care to children's families by assisting in accurate information processing and helping family members and other caregivers. Child life specialists also help educate other medical staff and community members regarding issues and developmental needs of children involved in health care events or other stressful experiences. For more information about the profession, visit Child Life Council.

Before students who apply to the child life track may be admitted, they must complete 24 s.h. at the University of Iowa (or 12 s.h. for transfer students), including the courses listed under "Child Life: Admission Prerequisites" below. Applicants must have a University of Iowa g.p.a. of at least 3.00 and a cumulative g.p.a. of at least 3.00; students with lower grade-point averages may apply for exceptional admission.

Applicants for admission to the track should use the child life track application form on the Department of Health and Human Physiology web site. Completed applications must be submitted by March 15 for admission the following fall semester (students may enter the child life track only in fall).

Students who complete the child life track curriculum, including the child life internship, are eligible to sit for the Child Life Professional Certification Examination administered by the Child Life Council. Successful completion of the exam confers the Certified Child Life Specialist (CCLS) credential.

The major in therapeutic recreation with the child life track requires the following course work.

CHILD LIFE: ADMISSION PREREQUISITES

All of these:

HHP:1100 Human Anatomy 3 s.h.
TR:1070 Perspectives on Leisure and Play 3 s.h.
PSY:1001 Elementary Psychology 3 s.h.

One of these:

PSY:2501 Introduction to Social Psychology 3 s.h.
SOC:1010 Introduction to Sociology 3-4 s.h.
SOC:2220 Principles of Social Psychology 3-4 s.h.

CHILD LIFE: COMMON CORE

All of these:

TR:1061 Recreation Leadership and Programming 3 s.h.
TR:1077 Introduction to Child Life 3 s.h.
The inclusive recreation track requires 64 s.h. of work for the major (12 s.h. in admission prerequisites plus a total of 52 s.h. in additional courses, supporting course work from other departments, and the required internship). Students must apply and be admitted to the inclusive recreation track, and they must complete the admission prerequisites before they may enter the track.

Therapeutic recreation (inclusive recreation) is a health-oriented field that involves providing recreation programs designed to improve or maintain the physical, emotional, mental, and social functioning of patients and consumers. Therapeutic services involve a continuum of care that uses recreational activities to improve functional abilities; leisure education to help individuals acquire skills, knowledge, and attitudes that facilitate an independent lifestyle; and other activities to enhance health, growth, development, and independence through intrinsically rewarding leisure behavior. Inclusive recreation provides opportunities for people with all abilities and disabilities to participate together in therapeutic recreation programs based on choice and common interests.

Professionals in the therapeutic recreation (inclusive recreation) field are commonly employed in settings such as skilled nursing facilities, community recreation departments, state and community mental health institutions, general hospitals, physical rehabilitation centers, special recreation districts, correctional facilities, senior centers, facilities for persons with intellectual disabilities or mental illness, and substance-abuse programs.

Before students who apply to the inclusive recreation track may be admitted, they must complete 24 s.h. at the University of Iowa (or 12 s.h. for transfer students), including the courses listed under "Inclusive Recreation: Admission Prerequisites" below. Applicants must have a University of Iowa g.p.a. of at least 2.50 and a cumulative g.p.a. of at least 2.50; students with lower grade-point averages may apply for exceptional admission.

Applicants for admission to the track should use the inclusive recreation track application form on the Department of Health and Human Physiology web site. Completed applications must be submitted by October 15 for admission the following spring semester or by March 15 for admission the following fall semester.

Students who complete the inclusive recreation curriculum, including the therapeutic recreation internship, are eligible to sit for the National Council for Therapeutic Recreation Certification Exam. Successful completion of the exam confers the Certified Therapeutic Recreation Specialist (CTRS) credential.

The major in therapeutic recreation with the inclusive recreation track requires the following course work:

INCLUSIVE RECREATION: ADMISSION PREREQUISITES
All of these:

- HHP:1100 Human Anatomy 3 s.h.
- TR:1070 Perspectives on Leisure and Play 3 s.h.
- PSY:1001 Elementary Psychology 3 s.h.

One of these:

- PSY:2501 Introduction to Social Psychology 3 s.h.
- SOC:1010 Introduction to Sociology 3-4 s.h.
- SOC:2220 Principles of Social Psychology 3-4 s.h.

CHILD LIFE: FOUNDATION
All of these:

- TR:3160 Introduction to Therapeutic Recreation 3 s.h.
- TR:3161 Assessment and Evaluation in Therapeutic Recreation 3 s.h.
- TR:3162 Therapeutic Recreation: Clientele 3 s.h.

CHILD LIFE: SUPPORTING COURSE WORK
Students must complete 9 s.h. from these. Other supporting courses may be added with consent of the student's advisor.

- TR:3170 Children and Health Care 3 s.h.
- TR:3171 Child Life Practical Application 3 s.h.
- TR:3174 Cultural Perspectives in Health Care 3 s.h.
- TR:4169 Spring Break Child Life Experience 1 s.h.
- CLSA:3750 Medical and Technical Terminology 2 s.h.
- DST:3101 Introduction to Disability Studies 3 s.h.
- EDTL:3114 Parent-Child Relationships 3 s.h.
- EDTL:4940 Characteristics of Disabilities 3 s.h.
- EDTL:4990 Interdisciplinary Issues in Disabilities 3 s.h.
- HHP:2130 Human Development Through the Life Span 3 s.h.
- NURS:1030 Human Development and Behavior 3 s.h.
- PSY:2401 Introduction to Developmental Science 3 s.h.
- SSW:3786 Death/Dying: Issues Across the Life Span 3 s.h.
- SOC:1010 Introduction to Sociology 3 s.h.
- SOC:2220 Principles of Social Psychology 3 s.h.
- SOC:2220 Principles of Social Psychology 3-4 s.h.
- SOC:2220 Principles of Social Psychology 3-4 s.h.

CHILD LIFE: INTERNSHIP
Child life students must complete an internship; they register for the following course.

- TR:4192 Child Life Internship 12 s.h.

Inclusive Recreation Track

- RCE:4145 Marriage and Family Interaction 3 s.h.
- RCE:4176 Child Abuse: Assessment, Intervention, and Advocacy 3 s.h.
- RCE:4199 Counseling for Related Professions 3 s.h.
- SOC:2222 Introduction to Social Work 4 s.h.
- SOC:3710 The American Family 3 s.h.
- SSW:3786 Death/Dying: Issues Across the Life Span 3 s.h.
- SSW:6238 Introduction to Play Therapy 2 s.h.
INCLUSIVE RECREATION: COMMON CORE
All of these:
TR:1061 Recreation Leadership and Programming 3 s.h.
TR:1077 Introduction to Child Life 3 s.h.
TR:3160 Introduction to Therapeutic Recreation 3 s.h.
TR:3161 Assessment and Evaluation in Therapeutic Recreation 3 s.h.
TR:3162 Therapeutic Recreation: Clientele 3 s.h.

INCLUSIVE RECREATION: FOUNDATION
All of these:
TR:3163 Concepts and Issues in Therapeutic Recreation: Advancement of the Profession 3 s.h.
TR:3164 Therapeutic Recreation: Rehabilitation 3 s.h.
TR:3261 Inclusive Recreation 3 s.h.
PSY:2930 Abnormal Psychology: Health Professions 3 s.h.

One of these:
HHP:2130 Human Development Through the Life Span 3 s.h.
NURS:1030 Human Development and Behavior 3 s.h.

INCLUSIVE RECREATION: SUPPORTING COURSE WORK
Students must complete 9 s.h. in supporting course work in human services (aging studies, disability studies, psychology, sociology, social work, and special education). Students should consult their advisor for specific recommendations.

INCLUSIVE RECREATION: INTERNSHIP
Both of these:
TR:4190 Preinternship Seminar 1 s.h.
TR:4191 Therapeutic Recreation Internship 12 s.h.

Four-Year Graduation Plan
The following checkpoints list the minimum requirements students must complete by certain semesters in order to stay on the University’s Four-Year Graduation Plan. (Courses in the major are those required to complete the major; they may be offered by departments other than the major department.)

B.A.: Health and Human Physiology
Before the fifth semester begins: one foundation course and at least six more courses in the major
Before the seventh semester begins: at least six more courses in the major (total of 13) and at least 90 s.h. earned toward the degree
Before the eighth semester begins: at least two more courses in the major (total of 15)
During the eighth semester: enrollment in all remaining course work in the major, all remaining General Education courses, and a sufficient number of semester hours to graduate

B.S.: Human Physiology
Before the fifth semester begins: calculus and at least six more courses in the major
Before the seventh semester begins: at least six more courses in the major (total of 13) and at least 90 s.h. earned toward the degree
Before the eighth semester begins: at least two more courses in the major (total of 15)
During the eighth semester: enrollment in all remaining course work in the major, all remaining General Education courses, and a sufficient number of semester hours to graduate

B.S.: Athletic Training
Students entering the major in athletic training must be admitted to the major on schedule in order to complete the Four-Year Graduation Plan.
Before the fifth semester begins: nine courses in the major
Before the seventh semester begins: at least 90 s.h. earned toward the degree
Before the eighth semester begins: three more courses in the major (total of 12)
During the eighth semester: enrollment in all remaining course work in the major, all remaining General Education courses, and a sufficient number of semester hours to graduate

B.S.: Sport and Recreation Management
Students who choose the internship option, SRM:4196 Internship, should work with their advisor to develop individual graduation plans.
Before the fifth semester begins: four foundation courses, at least 3 s.h. in the concentration area, and 3 s.h. in SRM:4197 Sport and Recreation Business Practicum
Before the seventh semester begins: two more foundation courses (total of six), an additional 6 s.h. in the concentration area, and at least 90 s.h. earned toward the degree
Before the eighth semester begins: two more foundation courses (total of eight), an additional 3 s.h. of SRM:4197, and one remaining concentration area course (3 s.h.)
During the eighth semester: enrollment in final 3 s.h. of SRM:4197, all remaining course work in the major, all remaining General Education courses, and a sufficient number of semester hours to graduate

B.S.: Therapeutic Recreation
Before the fifth semester begins: all core courses and at least one foundation course
Before the seventh semester begins: two more foundation courses (total of three), 3 s.h. of supporting course work, and at least 90 s.h. earned toward the degree
Before the eighth semester begins: two more foundation courses (total of five) and the remaining supporting course work
During the eighth semester: enrollment in all remaining course work in the major, all remaining General Education courses, and a sufficient number of semester hours to graduate

Honors in the Major

Students majoring in health and human physiology, human physiology, athletic training, sport and recreation management, or therapeutic recreation have the opportunity to graduate with honors in the major. Departmental honors students must maintain an overall g.p.a. of at least 3.33 in work for their major.

Exercise science, health promotion, health studies, or human physiology track: in order to graduate with honors in the major, students must successfully complete the honors research course sequence HHP:4800 Honors Research I and HHP:4900 Honors Research II; write an honors thesis that is deposited with the University of Iowa Honors Program and is judged to be of honors quality; and make an oral or poster presentation of the honors thesis in an approved venue, such as a department research seminar or professional conference.

Sport and recreation management, or therapeutic recreation: in order to graduate with honors in either major, students must successfully complete SRM:4194 Honors Readings and SRM:4195 Honors Problems, or TR:4194 Honors Readings and TR:4195 Honors Problems, in which they conduct a reading or research project under the supervision of a faculty member in their major and write a paper summarizing the project’s results.

Departmental honors students students must be members of the University of Iowa Honors Program, which requires students to maintain a cumulative University of Iowa g.p.a. of at least 3.33 and to fulfill other requirements; visit Honors at Iowa to learn about the University’s honors program.

Minor: Human Physiology

The minor in human physiology requires a minimum of 15 s.h. in Department of Health and Human Physiology courses, including 12 s.h. in courses numbered 3000 or above. Students must maintain a g.p.a. of at least 2.00 in all courses for the minor and in all UI courses for the minor. Course work in the minor may not be taken pass/nonpass. Transfer credit does not count toward the minor.

Students majoring in health and human physiology (B.A.), human physiology (B.S.), or athletic training (B.S.) may not earn the minor in human physiology.

Students choose courses for the minor from the following list. Enrollment in HHP:3510 Advanced Human Physiology Laboratory and HHP:4220 Biomechanics of Human Motion requires special permission. Some of these courses have prerequisites; students must complete all of a course’s prerequisites before they may register for the course.

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HHP:1100 Human Anatomy</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>HHP:1110 Human Anatomy Laboratory</td>
<td>1 s.h.</td>
</tr>
<tr>
<td>HHP:1310 Human Physiology Laboratory</td>
<td>1 s.h.</td>
</tr>
<tr>
<td>HHP:3110 Advanced Anatomy Laboratory</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>HHP:3300 Human Growth and Motor Development</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>HHP:3400 Applied Exercise Physiology</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>HHP:3450 Immunology in Health and Disease</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>HHP:3500 Human Physiology</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>HHP:3510 Advanced Human Physiology Laboratory</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>HHP:3900 Writing for Health and Human Physiology</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>HHP:4130 Skeletal Muscle Physiology</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>HHP:4150 Clinical Exercise Physiology</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>HHP:4220 Biomechanics of Human Motion</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>HHP:4230 Motor Learning: Theory and Application</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>HHP:4250 Human Pathophysiology</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>HHP:4300 Neural Control of Posture and Movement</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>HHP:4410 Exercise Physiology</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>HHP:4440 Physiology of Nutrition</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>HHP:4450 Genetic Basis of Disease</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>HHP:4460 Cardiovascular Physiology</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>HHP:4470 Physiology of Aging</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>HHP:4480 Introduction to Human Pharmacology</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>HHP:4510 Energy Metabolism in Health and Disease</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

Minor: Physical Activity and Nutrition Science

The minor in physical activity and nutrition science requires a minimum of 15 s.h. in Department of Health and Human Physiology courses, including at least 9 s.h. in courses numbered 3000 or above. Students must maintain a g.p.a. of at least 2.00 in all courses for the minor and in all UI courses for the minor. Course work in the minor may not be taken pass/nonpass. Transfer credit does not count toward the minor.

Students majoring in health and human physiology (B.A.), human physiology (B.S.), or athletic training (B.S.) may not earn the minor in physical activity and nutrition science.

The minor in physical activity and nutrition science is designed in conjunction with the Obesity Research and Education initiative. The minor provides a specialized group of courses that unify concepts underlying the causes, consequences, treatment, and prevention of obesity, with attention to physical activity, nutrition, physiology, psychology, and human disease. Students who earn the minor will be prepared to apply their knowledge in areas such as clinical health professions, public health policy, personal coaching and fitness, health psychology, and health promotion.

For the minor, students complete three core courses plus two elective courses that focus on various facets of obesity and on its treatment and prevention. One of the core courses and both of the elective courses are at the intermediate or advanced level. Students choose electives in consultation with an undergraduate advisor. Some courses for the minor have prerequisites; students must complete all of a course’s prerequisites before they may register for the course.

The minor in physical activity and nutrition science requires the following course work.

Core courses—all of these:
HHP:2200 Physical Activity and Health 3 s.h.
HHP:2310 Nutrition and Health 3 s.h.
HHP:3050 Obesity: Causes, Consequences, Prevention, and Treatment 3 s.h.
Election—two courses from the following lists:
HHP:3000 Equity Issues in the Health Sciences 3 s.h.
HHP:3030 Coaching for Health and Wellness 3 s.h.
HHP:3440 Physical Activity and Healthy Communities 3 s.h.
HHP:3500 Human Physiology 3 s.h.
HHP:3650 Advanced Sport and Exercise Psychology 3 s.h.
HHP:3655 Emotional and Psychological Aspects of Health 3 s.h.
HHP:4230 Motor Learning: Theory and Application 3 s.h.
HHP:4310 Sport and Exercise Nutrition 3 s.h.
HHP:4320 Nutrition Interventions 3 s.h.
HHP:4340 Global Health and Global Food 3 s.h.
HHP:4390 Understanding Human Disease 3 s.h.
HHP:4440 Physiology of Nutrition 3 s.h.

Electives may include one of these:
HHP:3400 Applied Exercise Physiology 3 s.h.
HHP:4410 Exercise Physiology 3 s.h.

Minor: Sport and Recreation Management
The minor in sport and recreation management requires a minimum of 15 s.h. in Department of Health and Human Physiology courses, including at least 12 s.h. in courses numbered 3000 or above. Students must maintain a g.p.a. of at least 2.00 in all courses for the minor and in all UI courses for the minor. Course work in the minor may not be taken pass/nonpass. A maximum of 3 s.h. of transfer credit may be accepted toward the minor with the approval of the sport and recreation management steering committee.

Students majoring in sport and recreation management (B.S.) may not earn the minor in sport and recreation management.

Students take 15 s.h., with at least 12 s.h. in course work numbered 3000 or above, from the following:

SRM:1060 Contemporary Issues in Sports 3 s.h.
SRM:2065 The Experience Economy 3 s.h.
SRM:3147 Sport Event Management 3 s.h.
SRM:3150 Recreation Administration 3 s.h.
SRM:3151 Liability in Sport and Recreation Management 3 s.h.
SRM:3152 Sport and Recreation Facility Management 3 s.h.
SRM:3153 Sport Business Practices 3 s.h.
SRM:3154 Foundations of Event Management 3 s.h.
SRM:3156 Design of Recreation Facilities 3 s.h.
SRM:3157 Managerial Operations in Sport and Recreation 3 s.h.
SRM:3158 Sport and Recreation Promotion 3 s.h.
SRM:3172 Finance in Sport and Recreation 3 s.h.
SRM:3175 Sales in Sport 3 s.h.
SRM:3176 Sports Analytics for Coaches, Managers, and Other Decision Makers 3 s.h.
SRM:3178 Communications and Public Relations in Sports 3 s.h.
SRM:4197 Sport and Recreation Business Practicum 1-3 s.h.
SRM:4198 NCAA Rules Compliance and Enforcement 3 s.h.

Certificate in Disability Studies
The Department of Health and Human Physiology administers the undergraduate certificate program in disability studies; see Disability Studies (p. 224) in the Catalog.

Graduate Programs of Study
- Master of Arts in leisure studies
- Master of Science in health and human physiology
- Doctor of Philosophy in health and human physiology

Master of Arts
The Master of Arts program in leisure studies requires a minimum of 33 s.h. of graduate credit with thesis or 36 s.h. of graduate credit without thesis. Students choose one of two specialization areas—leisure and recreational sport management or therapeutic recreation—and must satisfy the prerequisites required for their areas. Work for each specialization area includes core requirements and area courses.

Leisure and Recreational Sport Management Specialization
The leisure and recreational sport management specialization prepares students for positions in public and private recreation and sport management. Students typically find employment in community or municipal recreation programs, campus recreation programs, or commercial recreation and sport operations.

The leisure and recreational sport management specialization requires the following course work.

LEISURE AND RECREATIONAL SPORT MANAGEMENT: CORE
All of these:
SRM:5065 The Economy of Experience 3 s.h.
TR:5200 Historical and Philosophical Perspectives on Leisure 3 s.h.
PSQF:4143 Introduction to Statistical Methods 3 s.h.

LEISURE AND RECREATIONAL SPORT MANAGEMENT: AREA COURSES
All of these:
SRM:6251 Risk Management 3 s.h.
SRM:6252 Economics and Financing 3 s.h.
SRM:6253 Sport Administration 3 s.h.
SRM:6254 Marketing and Sport Promotion 3 s.h.
Cognate area courses (sport and athletic administration, business, communications, or cultural studies) 6-9 s.h.

Students take an additional 6 s.h. of electives.
Therapeutic Recreation Specialization

The therapeutic recreation specialization prepares students to meet the challenges of inpatient- and community-based health care service delivery. The program stresses research and practical skills that enable graduates to find the best jobs in the field.

Therapeutic recreation specialists are increasingly called upon to deliver preventive outpatient services, such as programs designed to prevent secondary impairments in persons with disabilities (e.g., arthritis exercise to manage pain, fall prevention for older adults); education for individuals with negative lifestyle habits (e.g., smoking, substance abuse); programs designed to restore meaning and purpose to life following traumatic events (e.g., following a spinal cord injury); and initiatives to help communities make services accessible to persons with disabilities.

Iowa's therapeutic recreation program emphasizes skills for delivery of services in clinical or community settings. The program includes related cognate areas, such as child life, aging, developmental disabilities, or counseling.

Students acquire research skills that they may apply directly to therapeutic recreation practice, for example, to assess the effectiveness of specific interventions or the demand for varied services in a specific setting.

The therapeutic recreation specialization requires the following course work.

THERAPEUTIC RECREATION: CORE

All of these:

- TR:5200 Historical and Philosophical Perspectives on Leisure 3 s.h.
- TR:5205 Research Methods and Leisure Behavior 3 s.h.
- PSQF:4143 Introduction to Statistical Methods 3 s.h.

THERAPEUTIC RECREATION: AREA COURSES

All of these:

- TR:3160 Introduction to Therapeutic Recreation 3 s.h.
- TR:3161 Assessment and Evaluation in Therapeutic Recreation 3 s.h.
- TR:3162 Therapeutic Recreation: Clientele 3 s.h.
- TR:3163 Concepts and Issues in Therapeutic Recreation: Advancement of the Profession 3 s.h.
- TR:3164 Therapeutic Recreation: Rehabilitation 3 s.h.

Cognate area courses (aging studies, child life, counseling, disability studies) 9-12 s.h.

Thesis students complete an additional 6 s.h. of credit.

Therapeutic recreation students must complete a practicum, HHP:7290 Graduate Internship, in order to sit for a national certification examination.

Master of Science

The Master of Science program in health and human physiology requires 30-32 s.h. of graduate credit. Required credit varies by track: the athletic training track requires a minimum of 30 s.h. and is offered without thesis; the child life track requires a minimum of 36 s.h. and is offered without thesis; the clinical exercise physiology track requires a minimum of 32 s.h. and is offered without thesis; the health and human physiology track requires a minimum of 30 s.h. and is offered with thesis.

Students interested in pursuing a Ph.D. after earning a master's degree should choose the M.S. health and human physiology track (with thesis).

Athletic Training Track

The athletic training track provides an advanced clinical education and research area of study for certified athletic trainers. It focuses on a health care team approach to sports medicine, medical care management, wellness, pediatric/adolescent health, and special health populations. The program emphasizes application of established research findings to the wide variety of problems encountered in everyday practice.

In order to be admitted to the program, athletic trainers must have completed the following prerequisite course work and must hold the following certifications.

- anatomy (3-4 s.h.);
- human physiology (3 s.h.);
- athletic training core—prevention (3 s.h.), evaluation and recognition (3 s.h.), modalities (3 s.h.), rehabilitation (3 s.h.), administrative (2 s.h.);
- exercise science core—exercise physiology (3 s.h.), biomechanics (3 s.h.);
- current emergency certification; and
- Board of Certification (BOC) certification and state license.

The Master of Science with the athletic training track requires the following course work.

STATISTICS CORE

One of these:

- BIOS:5110 Introduction to Biostatistics 3 s.h.
- STAT:4143 Introduction to Statistical Methods 3 s.h.

EXERCISE SCIENCE CORE

Three of these:

- HHP:3110 Advanced Anatomy Laboratory 3 s.h.
- HHP:4130 Skeletal Muscle Physiology 3 s.h.
- HHP:4150 Clinical Exercise Physiology 3 s.h.
- HHP:4220 Biomechanics of Human Motion 3 s.h.
- HHP:4300 Neural Control of Posture and Movement 3 s.h.
- HHP:4310 Sport and Exercise Nutrition 3 s.h.
- HHP:4410 Exercise Physiology 3 s.h.
- HHP:4440 Physiology of Nutrition 3 s.h.
- HHP:4450 Genetic Basis of Disease 3 s.h.
- HHP:4460 Cardiovascular Physiology 3 s.h.
- HHP:4470 Physiology of Aging 3 s.h.
- HHP:4480 Introduction to Human Pharmacology 3 s.h.
- HHP:6130 Advanced Skeletal Muscle Physiology 1-3 s.h.
- HHP:6150 Advanced Clinical Exercise Physiology 1-3 s.h.
- HHP:6210 Epidemiology of Physical Activity 3 s.h.
- HHP:6410 Advanced Exercise Physiology 3 s.h.
HHP:6460 Advanced Cardiovascular Physiology 1-3 s.h.
HHP:6480 Advanced Human Pharmacology 3 s.h.
HHP:7300 Advanced Neural Control of Posture and Movement 1-3 s.h.

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**CLINICAL RESEARCH TOOLS**

One approved clinical tool course (2-4 s.h.) in computer science, counseling, epidemiology, health promotion, leisure studies, nursing, or pathology.

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**ATHLETIC TRAINING CORE**

All of these:

- HHP:5000 Problems 2 s.h.
- HHP:6010 Non-Thesis Seminar 2 s.h.
- HHP:7000 Practicum in College Teaching 2-3 s.h.

One of these:

- EPID:4400 Epidemiology I: Principles 3 s.h.
- PATH:8133 Introduction to Human Pathology for Graduate Students 4 s.h.
- PSQF:6205 Design of Instruction 3 s.h.

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**ELECTIVES**

Students choose elective courses that enhance their concentration in medical care management, wellness, pediatric/adolescent health, or special health populations. Course selection must be approved by the advisor.

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**Child Life Track**

The child life track provides expertise in child development through services to support families and to promote children's mastery of life experiences, particularly children's health care events. Professionals in this area enhance effective coping skills through play, education, communication, and family-centered care. The program prepares students to meet credentialing requirements. For more information about the profession, visit the Child Life Council.

In order to be admitted to the program, students must:

- hold a B.S. or B.A. with a g.p.a. of at least 3.00;
- have completed one course each in human anatomy, medical terminology, and growth and development;
- have verification of 100 hours of paid or volunteer experience in child life or in a pediatric setting; and
- three letters of recommendation, with at least one from a credentialed child life specialist.

Students who have not completed an introductory course in child life must enroll in TR:1077 Introduction to Child Life during their first semester. For student applicants whose first language is not English, applications must be accompanied by Test of English as a Foreign Language (TOEFL) scores.

The Master of Science with the child life track requires the following course work.

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**CORE COURSES**

All of these:

- EDTL:3114 Parent-Child Relationships 3 s.h.
- PSQF:4143 Introduction to Statistical Methods 3 s.h.

SSW:3786 Death/Dying: Issues Across the Life Span 3 s.h.

- TR:3165 Child Life: Methods and Materials 3 s.h.
- TR:3166 Child Life: Seminar 3 s.h.
- TR:3260 Play and Childhood 3 s.h.
- TR:4167 Child Life Practicum 3 s.h.
- TR:5205 Research Methods and Leisure Behavior 3 s.h.
- TR:5211 Professional Ethics and Practice in Pediatrics 3 s.h.

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**INTERNSHIP**

The supervised internship requires 480-600 contact hours with a credentialed child life specialist.

This course:

- TR:4192 Child Life Internship 9 s.h.

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**Clinical Exercise Physiology Track**

The clinical exercise physiology track provides an advanced scientific and clinical education. It prepares students to be allied health professionals who work in the application of physical activity and behavioral interventions for clinical diseases and health conditions including cardiovascular, pulmonary, metabolic, orthopaedic, neuromuscular, immunologic, and hematologic diseases.

In order to be admitted to the program, students must:

- hold a B.S. or B.A. with a g.p.a. of at least 3.00; and
- have completed anatomy and physiology with laboratories (8 s.h.).

The Master of Science with the clinical exercise physiology track requires the following course work.

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**STATISTICS CORE**

One of these (or equivalent):

- BIOS:5110 Introduction to Biostatistics 3 s.h.
- STAT:3510 Biostatistics 3 s.h.
- STAT:4143 Introduction to Statistical Methods 3 s.h.

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**ADVANCED STATISTICS**

One of these (or equivalent):

- BIOS:5120 Design and Analysis of Biomedical Studies 3 s.h.
- STAT:6513 Intermediate Statistical Methods 4 s.h.

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**CLINICAL EXERCISE PHYSIOLOGY CORE**

All of these:

- HHP:6150 Advanced Clinical Exercise Physiology 1-3 s.h.
- HHP:6200 Advanced Metabolic Exercise Testing and Prescription 3 s.h.
- HHP:6410 Advanced Exercise Physiology 3 s.h.
- HHP:6460 Advanced Cardiovascular Physiology 1-3 s.h.
- HHP:6480 Advanced Human Pharmacology 3 s.h.

Two enrollments (1 s.h. each) chosen from these:
HHP:6300 Seminar in Motor Control 1 s.h.
HHP:6400 Integrative Physiology Seminar 1 s.h.
HHP:6500 Seminar in Health Promotion 1 s.h.

**INTERNSHIP**
Students complete an individually arranged internship, usually during their second year, earning 3 s.h. of credit.

**ELECTIVES**
Students choose elective courses that enhance their concentration in human and exercise physiology, clinical exercise physiology, prescriptive exercise and training for health and fitness, health maintenance, and understanding human disease. Students complete a minimum of two courses from the following list, with their advisor’s approval.

- HHP:4400 Health Promotion Clinical Practicum 1 s.h.
- HHP:4405 Health Promotion Community and Worksite Practicum 1 s.h.
- HHP:4420 Planning and Evaluating Health Interventions 3 s.h.
- HHP:6050 Advanced Topics in Obesity 3 s.h.
- HHP:6130 Advanced Skeletal Muscle Physiology 1-3 s.h.
- HHP:6210 Epidemiology of Physical Activity 3 s.h.
- HHP:6470 Advanced Physiology of Aging 3 s.h.
- HHP:7300 Advanced Neural Control of Posture and Movement 1-3 s.h.
- ACB:5203 Gross Human Anatomy for Graduate Students 5 s.h.
- BIOL:3743 Basic Biology of Human Disease 2 s.h.
- EPID:6350 Nutritional Epidemiology 2 s.h.
- EPID:6650 Cardiovascular Disease Epidemiology 3 s.h.
- EPID:6360 Nutrition Intervention in Clinical Trials Research 2 s.h.
- PSY:3010 Health Psychology 3 s.h.
- PSY:3340 Behavior Modification 3 s.h.
- PTRS:6224 Activity-Based Neural and Musculoskeletal Plasticity in Health Care 4 s.h.
- PTRS:7812 Biomedical Instrumentation and Measurement 3 s.h.
- PTRS:7875 Analysis of Activity-Based Neural and Musculoskeletal Plasticity 3 s.h.

**Health and Human Physiology Track**
The health and human physiology track requires a thesis. Students who intend to earn a Ph.D. after the master’s degree should choose this track. In order to be admitted to the program, students must:

- hold a B.S. or B.A. with a g.p.a. of at least 3.00; and
- have completed courses in anatomy and physiology with laboratory (8 s.h.) and basic physics (3 s.h.).

The Master of Science with the health and human physiology track requires the following course work.

**ADVANCED STATISTICS**
One of these:

- BIOS:5120 Design and Analysis of Biomedical Studies 3 s.h.
- EPID:5241 Statistical Methods in Epidemiology 4 s.h.
- STAT:6513 Intermediate Statistical Methods 4 s.h.

**RESEARCH METHODS**
One of these:

- TR:5205 Research Methods and Leisure Behavior 3 s.h.
- EALL:5150 Introduction to Educational Research 3 s.h.
- PSQF:6220 Quantitative Educational Research Methodologies 3 s.h.

**SEMINAR COURSES**
Two enrollments (1 s.h. each) chosen from these:

- HHP:6300 Seminar in Motor Control 1 s.h.
- HHP:6400 Integrative Physiology Seminar 1 s.h.
- HHP:6500 Seminar in Health Promotion 1 s.h.

**ELECTIVES**
Students choose elective courses that broaden their knowledge in health and human physiology and related disciplines and that enhance their knowledge in their specific areas of interest. Students choose electives with guidance from their advisor/mentor. Electives may include the following:

- HHP:5000 Problems arr.
- HHP:6000 Research arr.
- HHP:6050 Advanced Topics in Obesity 3 s.h.
- HHP:6130 Advanced Skeletal Muscle Physiology 1-3 s.h.
- HHP:6150 Advanced Clinical Exercise Physiology 1-3 s.h.
- HHP:6200 Advanced Metabolic Exercise Testing and Prescription 3 s.h.
- HHP:6210 Epidemiology of Physical Activity 3 s.h.
- HHP:6410 Advanced Exercise Physiology 3 s.h.
- HHP:6460 Advanced Cardiovascular Physiology 1-3 s.h.
- HHP:6470 Advanced Physiology of Aging 3 s.h.
- HHP:6480 Advanced Human Pharmacology 3 s.h.
- HHP:7300 Advanced Neural Control of Posture and Movement 1-3 s.h.
- ACB:5203 Gross Human Anatomy for Graduate Students 5 s.h.
- BIOC:3110 Biochemistry 3 s.h.
- EPID:4400 Epidemiology I: Principles 3 s.h.
- EPID:6350 Nutritional Epidemiology 2 s.h.
- EPID:6400 Epidemiology II: Advanced Methods 4 s.h.
- EPID:6600 Epidemiology of Chronic Diseases 3 s.h.
- MPB:5153 Graduate Physiology 4 s.h.
- PTRS:7812 Biomedical Instrumentation and Measurement 3 s.h.
- PTRS:7875 Analysis of Activity-Based Neural and Musculoskeletal Plasticity 3 s.h.

**THESIS**
Both of these:
Doctor of Philosophy

The Doctor of Philosophy program in health and human physiology requires a minimum of 72 s.h. of graduate credit.

Doctoral students should have a strong background in the natural sciences and/or health promotion, and a working knowledge of statistics and research methodology. Students may acquire additional knowledge of statistics and research methodology after entering the program.

All Ph.D. students complete a common core of courses, elective courses, and 10 s.h. of independent research in addition to the 12 s.h. dissertation requirement. They must complete a dissertation in their specialization area.

Some courses in the program are offered by other departments. Faculty members from those departments frequently serve on comprehensive examination committees and on dissertation committees for the initial presentation of a candidate’s prospectus. They also participate in the final examination.

The Doctor of Philosophy requirements the following course work.

COMMON CORE

All of these:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HHP:6000</td>
<td>Research</td>
<td>10 s.h.</td>
</tr>
<tr>
<td>HHP:7000</td>
<td>Practicum in College Teaching</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>HHP:7900</td>
<td>Thesis: Ph.D.</td>
<td>12 s.h.</td>
</tr>
<tr>
<td>GRAD:7270</td>
<td>Principles of Scholarly Integrity</td>
<td>1 s.h.</td>
</tr>
</tbody>
</table>

ADVANCED STATISTICS

Two enrollments, such as the following. Students should consult with their advisor.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOS:5120</td>
<td>Design and Analysis of Biomedical Studies</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>STAT:6513</td>
<td>Intermediate Statistical Methods</td>
<td>4 s.h.</td>
</tr>
</tbody>
</table>

SEMINAR COURSES

Four enrollments chosen from these:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HHP:6300</td>
<td>Seminar in Motor Control</td>
<td>1 s.h.</td>
</tr>
<tr>
<td>HHP:6400</td>
<td>Integrative Physiology Seminar</td>
<td>1 s.h.</td>
</tr>
<tr>
<td>HHP:6500</td>
<td>Seminar in Health Promotion</td>
<td>1 s.h.</td>
</tr>
</tbody>
</table>

ELECTIVES

Students are expected to obtain broad-based knowledge in their specialization area. This normally entails approximately 30 s.h. of course work. Students choose specialization electives with guidance from their advisor/mentor. Electives may include the following.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HHP:6200</td>
<td>Advanced Metabolic Exercise Testing and Prescription</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>HHP:6210</td>
<td>Epidemiology of Physical Activity</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ACB:5203</td>
<td>Gross Human Anatomy for Graduate Students</td>
<td>5 s.h.</td>
</tr>
<tr>
<td>ACB:8114</td>
<td>Medical Neuroscience</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>BIOC:3110</td>
<td>Biochemistry</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>BIOC:3120</td>
<td>Biochemistry and Molecular Biology I</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>BIOC:3130</td>
<td>Biochemistry and Molecular Biology II</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>EPID:4400</td>
<td>Epidemiology I: Principles</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>EPID:5241</td>
<td>Statistical Methods in Epidemiology</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>EPID:6350</td>
<td>Nutritional Epidemiology</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>EPID:6400</td>
<td>Epidemiology II: Advanced Methods</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>EPID:6600</td>
<td>Epidemiology of Chronic Diseases</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>FRRB:7000</td>
<td>Redox Biology and Medicine</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>MPB:5153</td>
<td>Graduate Physiology</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>NSCI:4353</td>
<td>Neurophysiology</td>
<td>3-4 s.h.</td>
</tr>
<tr>
<td>NSCI:4753</td>
<td>Developmental Neurobiology</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>NSCI:7235</td>
<td>Neurobiology of Disease</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>OEH:4310</td>
<td>Occupational Ergonomics I</td>
<td>2-3 s.h.</td>
</tr>
<tr>
<td>OEH:6310</td>
<td>Clinical Ergonomics</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>OEH:6320</td>
<td>Occupational Ergonomics II</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>PSY:5210</td>
<td>Fundamentals of Behavioral Neuroscience</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>PTRS:5210</td>
<td>Kinesiology and Pathomechanics</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>PTRS:6224</td>
<td>Activity-Based Neural and Musculoskeletal Plasticity</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>PTRS:7812</td>
<td>Biomedical Instrumentation and Measurement</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>PTRS:7875</td>
<td>Analysis of Activity-Based Neural and Musculoskeletal Plasticity</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>PTRS:7885</td>
<td>Biomechanical Analysis in Rehabilitation</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

DISSERTATION

Students working on a dissertation register for the following course.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
</table>

Admission

Admission to the department's graduate programs is based on grade-point average and score on the Graduate Record Examination (GRE) General Test. Applicants to the M.S. program must have an undergraduate g.p.a. of at least 3.00. Applicants to the Ph.D. program must have a g.p.a. of at least 3.00 on undergraduate work and previous graduate work.

Applicants must meet the admission requirements of the Graduate College; see the Manual of Rules and Regulations of the Graduate College.

Application deadline is February 1 for admission the following fall semester.

Facilities

Classroom and research laboratories are located in the Field House and in other buildings on campus. They provide excellent facilities for instruction and research at both the undergraduate and graduate levels.

Cooperative efforts with other units facilitate specialization by allowing health and human physiology students to use additional special facilities and research equipment in other departments on campus (e.g., biology, biochemistry, molecular physiology and biophysics, orthopaedic surgery,
internal medicine, pharmacology, and the College of Engineering).

Courses

Lower-Level Undergraduate

Athletic Training Program

ATEP:1000 First Aid and CPR 2 s.h.
American Red Cross certification: basic first aid, CPR procedures.

ATEP:1010 Exploring Athletic Training arr.
Exploration of professional preparation for athletic trainers; application, career opportunities, professional organizations, awareness of basic athletic training principles.

ATEP:2010 Practicum in Athletic Training I 2 s.h.
Basic clinical skill instruction, evaluation, and integration for athletic trainers. Requirements: athletic training major.

ATEP:2020 Practicum in Athletic Training II 2 s.h.
Integration of basic physical skills and orientation to traditional settings; clinical experience for first-year students arranged through the athletic training program. Requirements: grade of C or higher in ATEP:2010.

ATEP:2030 Basic Athletic Training 3 s.h.
Basic pathology, epidemiology, materials biology for prevention and immediate care of athletic injuries.

ATEP:2040 Clinical Sciences I 2 s.h.
Theoretical knowledge base in therapeutic modalities. Offered spring semesters. Requirements: grade of C or higher in ATEP:2010.

ATEP:2060 Advanced Emergency Care for Athletic Trainers 1-2 s.h.
Coordinated initial professional emergency response certifications for athletic trainers; recertification for those holding valid certifications. Requirements: Red Cross First Aid and CPR certifications.

Health and Human Physiology

HHP:1000 First-Year Seminar 1 s.h.
Small discussion class taught by a faculty member; topics chosen by instructor; may include outside activities (e.g., films, lectures, performances, readings, visits to research facilities). Requirements: first- or second-semester standing.

HHP:1030 Introduction to Critical Thinking 3 s.h.
Concepts and skills required for critical thinking about what should and should not be taken as true; analysis and evaluation of a variety of complex extended arguments. GE: Quantitative or Formal Reasoning.

HHP:1050 Exploring Exercise Science 1 s.h.
Introduction to field of exercise science; employment and observation opportunities, academic and professional development.

HHP:1051 Making Choices: Interdisciplinary Perspectives 3 s.h.
Interdisciplinary consideration of what we know, value, hope, and should do; focus on case studies of private, professional, and social decision making. GE: Values, Society, and Diversity.

HHP:1100 Human Anatomy 3 s.h.
General human anatomy covering most systems of the body. GE: Natural Sciences without Lab.

HHP:1110 Human Anatomy Laboratory 1 s.h.
All major systems of the human body, understood through computer-generated images, models, histological slides, anatomical specimens. GE: Natural Sciences Lab only.

HHP:1300 Fundamentals of Human Physiology
Introduction to function and regulation of the human body. Recommendations: high school chemistry and basic biology. GE: Natural Sciences without Lab.

HHP:1310 Human Physiology Laboratory 1 s.h.
Introductory laboratory course illustrating principles of human physiology through fundamental experimental measurements and computer simulation. Recommendations: one semester of biology.

HHP:2130 Human Development Through the Life Span 3 s.h.
Overview of human developmental theories across the life-span; aspects of cognitive, physical, and personality development from birth to death; the role of culture, environment, health, and economic factors over the developmental process and life continuum.

HHP:2200 Physical Activity and Health 3 s.h.
Physical activity determinants in society; school, workplace, community-based health promotion interventions to improve activity levels. GE: Values, Society, and Diversity.

HHP:2210 Principles of Exercise Leadership 3 s.h.
Exercise standards, guidelines for aerobic/exercise instructors; aerobic workout components, contraindicated exercises, injury prevention and treatment. Prerequisites: HHP:2200.

HHP:2310 Nutrition and Health 3 s.h.
Physiology, biochemistry of human nutrition; appropriate food sources; qualitative and quantitative evaluation of diets using standard references. GE: Natural Sciences without Lab.

HHP:2350 Biomechanics of Sport and Physical Activity 3 s.h.
Principles of biomechanics, kinesiology, and anatomy; quantitative aspects of sport and physical activity; emphasis on developing a qualitative grasp on mechanical principles of human movement within sports and physical activity; how to apply these principles in a sport/exercise environment. Prerequisites: HHP:1100.

HHP:2500 Psychological Aspects of Sport and Physical Activity 3 s.h.
Psychological theory and research related to sport and physical activity; motivation, aggression, attribution, socialization, competitive anxiety, leadership.

**Sport and Recreation Management**

**SRM:1000 First-Year Seminar** 1 s.h.
Small discussion class taught by a faculty member; topics chosen by instructor; may include outside activities (e.g., films, lectures, readings, visits to research facilities).

**SRM:1040 The Good Society** 3 s.h.
Critiques of the existing social order, articulation of models of a good society with associated conceptions of the good life. GE: Values, Society, and Diversity.

**SRM:1045 Health for Living** 3 s.h.
Personal health strategies; focus on disease prevention, wellness. GE: Values, Society, and Diversity.

**SRM:1060 Contemporary Issues in Sports** 3 s.h.
Basic philosophical, historical, scientific foundations and developments; function, settings of organized recreation.

**SRM:1072 Leisure and the Liberal Arts** 3 s.h.
Integration of the ideal of a liberal education with worthy, meaningful use of free time in contemporary society; classic writings in the humanities. GE: Values, Society, and Diversity.

**SRM:2065 The Experience Economy** 3 s.h.
Introduction to emerging experience economy; just as manufacturing sector of economy supersedes agriculture and service economy supersedes manufacturing, how experience economy is now gaining ascendancy as the last, best hope for future economic growth; critical analysis of experience economy with discussion of ways in which experience economy may offer green, moral, and humane alternatives to previous stages of economic development; new opportunities for travel and tourism, sports settings, recreation and wellness services, possible applications in education and helping professions.

**Therapeutic Recreation**

**TR:1000 First-Year Seminar** 1 s.h.
Small discussion class taught by a faculty member; topics chosen by instructor; may include outside activities (e.g., films, lectures, readings, visits to research facilities).

**TR:1061 Recreation Leadership and Programming** 3 s.h.
Leadership principles, techniques; programming techniques.

**TR:1070 Perspectives on Leisure and Play** 3 s.h.
Relationships between leisure and economics, sociology, other social sciences; effect of leisure on individual and group behavior; antecedents, motives, consequences of leisure behavior. GE: Social Sciences.

**TR:1077 Introduction to Child Life** 3 s.h.
Orientation to the field of child life services including services for hospitalized children and their families.

**TR:1800 Basic Aspects of Aging** 3 s.h.

**Upper-Level Undergraduate and Graduate**

**Athletic Training Program**

**ATEP:3010 Clinical Sciences III** 3 s.h.
Theoretical and practical skill development in the areas of musculoskeletal evaluation for ankle, knee, shoulder, and upper extremity. Offered fall semesters. Prerequisites: ATEP:2040. Requirements: athletic training major.

**ATEP:3020 Clinical Sciences V: Rehabilitation** 2 s.h.
Rehabilitation for athletic trainers based on the theory and principles of therapeutic exercise; application of current research concepts. Prerequisites: ATEP:2040. Corequisites: ATEP:3010. Requirements: athletic training major.

**ATEP:3030 Practicum in Athletic Training III** 3 s.h.

**ATEP:3040 Clinical Sciences IV** 3 s.h.
Continuation of musculoskeletal evaluation, completion of EENT, chest, abdomen, and dermatologic evaluation; integration of rehabilitation programs. Offered spring semesters. Requirements: grade of C or higher in ATEP:3010.

**ATEP:4010 Administration of Athletic Training Programs** 2 s.h.
Health care supervision, professional athletic training responsibilities, philosophies in athletic health care. Offered fall semesters. Prerequisites: ATEP:2030.

**Health and Human Physiology**

**HHP:3000 Equity Issues in the Health Sciences** 3 s.h.
Examination of equity issues in the health sciences, including a review of the historical challenges that led to Human Subjects Review Boards, FDA oversight of drug development and clinical trials, inclusion of women in research; effect of situational ethics in the workplace; potential danger of making assumptions about clients/patients; importance of developing an inclusive communication style; assessing the effectiveness of family-friendly employment policies in providing equitable opportunities for career advancement for both women and men. Recommendations: junior or senior standing. Same as INTD:3020.

**HHP:3020 Nutrition for Health, Fitness, and Sport** 3 s.h.
Effects of exercise and nutrition on health- and sports-related fitness; for professionals in health and physical education. Same as INTD:3027.
HHP:3030 Coaching for Health and Wellness 3 s.h.
Opportunities to expand knowledge and develop skills to help individuals change behavior and meet health-related goals; general health and wellness principles; principles and techniques for change; experience providing health-coaching services to clients. Prerequisites: HHP:2200 and HHP:2310. Same as INTD:3030.

HHP:3050 Obesity: Causes, Consequences, Prevention, and Treatment 3 s.h.
In-depth overview of biological, behavioral, and societal causes and consequences of obesity epidemic; potential solutions from primary and secondary prevention standpoints; causes of obesity, available treatments, and global impact that obesity epidemic presents to society. Prerequisites: HHP:2200 and HHP:2310.

HHP:3060 Advanced Human Anatomy for Athletic Trainers 4 s.h.
Extremities and relevant body cavity anatomy; anatomical terminology, anatomical relationships of human body, 3-D view of anatomy, clinical relevance of anatomy; basic science lectures, radiologic imaging discussions, introduction to clinically relevant anatomy, dissection laboratories, small group learning and teaching, faculty interaction, and computer-assisted resources. Offered summer sessions. Prerequisites: HHP:1100.

HHP:3100 Health Literacy 3 s.h.
Community and clinical issues related to health literacy; focus on understanding individual and systemic factors that influence health literacy, including education, context, culture, and health care systems. Prerequisites: HHP:2200 and HHP:2310.

HHP:3110 Advanced Anatomy Laboratory 3 s.h.
Detailed gross anatomy of all major systems of the body; structure of the human body at organ, tissue, and cellular levels; examination of various human and other mammalian specimens. Prerequisites: HHP:1100 and HHP:1110.

HHP:3148 Introduction to Personal Training 3 s.h.
Basics of personal training, including establishing a personal training business, screening, and assessing clients; current issues and certifications.

HHP:3200 Health Behavior and Health Promotion 3 s.h.
Principles of epidemiology and health behavior theories applied to multilevel frameworks for health promotion. Prerequisites: HHP:2200 and HHP:2310.

HHP:3300 Human Growth and Motor Development 3 s.h.
Human growth and biological maturation; focus on motor development from birth through puberty. Offered fall semesters. Recommendations: prior course in anatomy, human physiology, or biology.

HHP:3400 Applied Exercise Physiology 3 s.h.
Effects of acute exercise and chronic exercise training on different physiological systems (energy, neuromuscular, circulatory, respiratory, endocrine); overview of physiological principles necessary for more advanced study of fitness evaluation and exercise prescription; preparation for ACSM certification. Prerequisites: HHP:1300 or HHP:3500. Recommendations: at least one prior human physiology course.

HHP:3420 College Health Education 3 s.h.
Practical experience in planning, implementing, and evaluating health programs in the college health setting; how health issues apply to individuals and communities to which they belong; foundation of health behavior change in college setting. Prerequisites: HHP:2200 and HHP:2310.

HHP:3430 Community and Worksite Health Promotion 3 s.h.
Management and organizational theories; assessment, planning, implementation, and evaluation of clinical and work-setting (targeted) health promotion programs. Prerequisites: HHP:2200 and HHP:2310.

HHP:3440 Physical Activity and Healthy Communities 3 s.h.
Development, implementation, evaluation of effective health communication interventions; identification of health education resources for targeted groups. Prerequisites: HHP:2200 and HHP:2310.

HHP:3450 Immunology in Health and Disease 3 s.h.
Overview of immunology, beginning at the molecular level and ending with the role of the immune system in disease; fundamental concepts of the immune system; innate and adaptive immunity, focusing on cell-mediated and humoral immune responses, in addition to effector mechanisms in both of these responses; concepts of immunologic tolerance; autoimmune disease; immunodeficiency syndromes; the inflammatory process in disease. Prerequisites: HHP:3500.

HHP:3500 Human Physiology 3 s.h.
Organ system approach to physiology; focus on normal function of human body; information on all levels of integration from submolecular to whole organism; emphasis on how intact organism functions. Prerequisites: (HHP:1300 or BIOI:1141 or BIOI:1140 or BIOI:1411) and (CHEM:1070 or CHEM:1110).

HHP:3510 Advanced Human Physiology Laboratory 3 s.h.
Fundamental laboratory measurements; major physiological systems, experimental design, presentation of experimental data. Corequisites: HHP:3500, if not taken as a prerequisite.

HHP:3650 Advanced Sport and Exercise Psychology 3 s.h.
Application of sport and exercise psychological theory; theoretical and practical experience using psychological skills training for sport and exercise. Prerequisites: HHP:2500.

HHP:3655 Emotional and Psychological Aspects of Health 3 s.h.
Interfaces among emotional, psychological, and physical aspects of health; examination of how individuals with healthy psychological profiles engage in health behaviors; health-related implications of negative emotional and psychological states; strategies for promoting healthy psychological patterns; designed for health promotion, health studies students, and others interested in health-related careers. Prerequisites: HHP:2200.

HHP:3850 Promoting Health Globally 3 s.h.
Major global health threats in the United States and abroad; impact of culture, history, economics on health disparities; approaches, programs, policies to remedy them. Requirements: junior or senior standing, or certificate student. Same as GHS:3850.

HHP:3860 Leadership Theory for Health and Fitness 3 s.h.
Theories and applications of current scholarship in group and individual leadership relevant for health, sport, fitness, and exercise leadership; areas of study include group dynamics, humanist leadership, leader-member exchange theory, transformational leadership, contingency/reinforcement leadership models, path-goal leadership, and multi-dimensional leadership models; approaches to leadership contextualized to build skills in cultural competence and ethics of leadership.

HHP:3870 Motivational Interviewing for Health Professions 3 s.h.
Theoretical foundations, empirical research support, and application of motivational interviewing; how people make changes with regard to health behaviors, how health professionals can support positive change, barriers to change process, empowerment and autonomy, intrinsic motivation, applications of motivational interviewing; theory and research; motivational interviewing for health behavior change; extensive applied practice of motivational interviewing techniques and group work to practice skills; discussion and application of techniques, research, and practical knowledge.

HHP:3900 Writing for Health and Human Physiology 3 s.h.
Effective written communication specific to health sciences; planning, drafting, revising, and peer-editing materials (e.g., personal statements, professional communications, general articles of interest, scientific papers); practicum experience. Requirements: HHP:3500.

HHP:4130 Skeletal Muscle Physiology 3 s.h.
Skeletal muscle structure, contractile mechanisms, production of movement, biomechanical properties; adaptation to increased use, disuse, injury. Offered spring semesters.

HHP:4150 Clinical Exercise Physiology 3 s.h.
Recent advances in exercise physiology for clinical populations; emphasis on acute and chronic responses to exercise in healthy aged adults and in patients with cardiac, vascular, pulmonary, and metabolic diseases; basic and intermediate electrocardiography (ECG), pathophysiology of disease process, clinical assessment of disease severity, diagnostic testing, acute exercise responses, and exercise rehabilitation. Prerequisites: HHP:3500 and HHP:4410. Recommendations: HHP:4460.

HHP:4190 Scientific Basis of Training for Elite Performance 3 s.h.
Application of scientific principles to goal of improving strength, speed, endurance, and overall human function; general overview of structure and function of muscular, nervous, cardiovascular, and respiratory systems; bioenergetics of exercise; endocrine response to exercise; biomechanics of resistance exercise; adaptations to anaerobic and aerobic training programs; age and sex related considerations on training; nutrition and ergogenic aids. Prerequisites: HHP:1100 and (HHP:1300 or HHP:3500).

HHP:4195 Exercise Programming for Special Populations 3 s.h.
Measurement of health-related fitness and exercise capacity in special populations (e.g., children, older adults, obesity, orthopedic problems, cerebral palsy, intellectual disabilities). Prerequisites: HHP:2200.

HHP:4200 Metabolic Exercise Testing and Prescription 3 s.h.
Basic techniques in physical fitness assessment, prescription of exercise for healthy and unhealthy adults, promotion of physical activity within communities; provides knowledge and skill competencies required for certification as American College of Sports Medicine health fitness instructor. Prerequisites: HHP:2200. Corequisites: HHP:3400 or HHP:4410. Requirements: health promotion, exercise science, or human physiology major.

HHP:4210 Musculoskeletal Exercise Testing and Prescription 3 s.h.
Application of the principles of mechanics to investigation of human motion in two dimensions; system modeling, force system and equilibrium analysis, particle and rigid body kinematics, Newton’s and Euler's equations of motion, work-energy and impulse-momentum integral principles. Offered spring semesters.

HHP:4220 Biomechanics of Human Motion 3 s.h.
How skilled motor behavior is acquired; behavioral changes that occur during skill acquisition; structural and physiological changes that occur in central nervous system; principles of training and practice that yield efficient and effective motor learning; how this information is helpful to health professionals involved in motor rehabilitation, physical educators and coaches, music instructors and musicians, strength and conditioning professionals, fitness professionals, and athletes, among others. Prerequisites: HHP:1300. Recommendations: familiarity with basic neuroscience (neurons, synaptic transmission, basic anatomical organization of sensory and motor systems).
HHP:4250 Human Pathophysiology 3 s.h.
In-depth study of human pathological processes and their effects on homeostasis; etiology, symptoms, and risk factors of various diseases; emphasis on major diseases impacting worldwide disability and death; how pathological processes are manifested and progress in the body. Prerequisites: HHP:1100 and HHP:3500.

HHP:4260 Respiratory Pathophysiology 3 s.h.
Structure and function of human respiratory system; focus on didactic and case study-based learning; control of breathing, gas exchange, lung mechanics, regulation of pulmonary blood flow, respiratory responses to stress; application of these physiological concepts to case studies of human disease. Prerequisites: HHP:1100 and HHP:3500. Recommendations: PHYS:1511, and MATH:1460 or MATH:1850.

HHP:4300 Neural Control of Posture and Movement 3 s.h.
Neuroanatomical and neurophysiological bases of human motor control; mechanisms for locomotion and posture, control of arm and hand movements, role of sensory information. Offered spring semesters. Requirements: anatomy or human physiology course.

HHP:4310 Sport and Exercise Nutrition 3 s.h.
Relationship between nutrition, fitness and sport performance; basic nutrition, physiology, chemistry, psychology, food preparation. Prerequisites: HHP:2200 and HHP:2310.

HHP:4320 Nutrition Interventions 3 s.h.
Strategies that assist in assessment and evaluation of nutrition behaviors of individuals and groups; interventions to meet nutritional needs of individuals and groups with a variety of health issues. Prerequisites: HHP:2200 and HHP:2310. Requirements: admission to health promotion track.

HHP:4340 Global Health and Global Food 3 s.h.
Practices, patterns, and policies that contribute to the epidemics of obesity, diabetes, and heart disease in wealthy populations; environmental degradation, hunger, and malnutrition among impoverished populations; strategies to meet food and agricultural needs for the world; local/global aspects or perspectives on food/health concerns for Iowa and the international community. Same as GHS:4340.

HHP:4350 Practicum in Personal Training 2 s.h.
Opportunity to observe personal trainers in a fitness setting; participation in process of helping clients achieve health/fitness goals. Prerequisites: HHP:1100 and (HHP:1300 or HHP:3500) and HHP:2310 and (HHP:3400 or HHP:4410). Requirements: CPR/AED or Group Fitness Instructor (ACSM, ACE, NFPT, AFAA) certification.

HHP:4360 Practicum in Group Fitness Instruction 2 s.h.
Opportunity to observe group-fitness instructors in an applied setting; help organize and execute a group-fitness class. Prerequisites: HHP:1100 and (HHP:1300 or HHP:3500) and HHP:2310 and (HHP:3400 or HHP:4410). Requirements: CPR/AED or Group Fitness Instructor (ACSM, ACE, AFAA) or specific fitness (yoga, indoor cycling, crossfit) certification.

HHP:4370 Practicum in Strength and Conditioning 2 s.h.
Opportunity to observe strength and conditioning professionals in an applied setting; participation in process of helping athletes reach performance goals. Prerequisites: HHP:1100 and (HHP:1300 or HHP:3500) and HHP:2310 and (HHP:3400 or HHP:4410). Requirements: CPR/AED certification.

HHP:4380 Understanding Human Disease 3 s.h.
Introduction to process of human disease at cell, organ, and whole body level throughout the lifespan; pathophysiological changes occurring with disease, including risk factors, disease development, and overall effects of disease on the body; cancer, diabetes, obesity, cardiovascular, neurodegenerative diseases, and aging. Prerequisites: HHP:1300 or HHP:3500.

HHP:4400 Health Promotion Clinical Practicum 1 s.h.
Experience in planning and implementing clinical health promotion programs focusing on nutrition, physical fitness, cardiac rehabilitation, and respiratory rehabilitation. Prerequisites: HHP:3200 and HHP:4200.

HHP:4405 Health Promotion Community and Worksite Practicum 1 s.h.
Planning and implementing community and worksite health promotion programs. Prerequisites: HHP:3200 and HHP:4200.

HHP:4410 Exercise Physiology 3 s.h.
Mechanisms responsible for the acute and chronic effects of exercise on the different organ systems of the body. Offered fall semesters. Prerequisites: HHP:1300 or HHP:3500.

HHP:4415 Exercise Science Practicum 1 s.h.
Experience in planning and implementing exercise programs related to physical fitness, including strength and conditioning in healthy and diseased/injured populations, and in elite athletes.

HHP:4420 Planning and Evaluating Health Interventions 3 s.h.
Assessment, planning, implementation, and evaluation of health promotion programs. Prerequisites: HHP:3200. Requirements: admission to health promotion program.

HHP:4440 Physiology of Nutrition 3 s.h.
Metabolic and biological aspects of human energy production, relationship to energy consumption; systems or integrative approach.
HHP:4450 Genetic Basis of Disease 3 s.h.
Changes in single molecules that lead to systemic physiological alterations in mammals; relationship of these changes to development, aging, exercise, and specific diseases; current methodologies for studying mammalian genetics and physiology. Prerequisites: HHP:3500.

HHP:4460 Cardiovascular Physiology 3 s.h.

HHP:4470 Physiology of Aging 3 s.h.
Aging's effects on cells, tissues, and organs; how aging influences function of major body organ systems and the whole organism; physiological mechanisms that underlie age-related changes in body function and performance; integrative approach with focus on human aging. Prerequisites: HHP:1100 or HHP:3500.

HHP:4480 Introduction to Human Pharmacology 3 s.h.
General pharmacology (e.g., administration, distribution, and elimination of drugs, dose response curves, adverse effects, placebos, homeopathy); pharmacotherapy of selected human diseases, pathophysiologic aspects of the disease, how different classes of drugs modify pathophysiologic effects to restore health or reduce disease's impact; focus on mechanisms of drug actions in humans; adverse effects, pharmacokinetic considerations, drug interactions; how to write prescriptions. Prerequisites: HHP:3500.

HHP:4490 Diagnosing Diseases: Patient History and Physical Examination 3 s.h.
Different diseases studied by interacting with patients at Meenakshi Mission Hospital and Research Center in Madurai, India; formal lectures in mornings followed by bedside teaching in afternoons and grand rounds in evenings; for pre-health professional students.

HHP:4500 Undergraduate Independent Study arr.
Library or laboratory research related to a specific topic in human physiology, normally culminating with a written manuscript; work directed by a faculty member.

HHP:4510 Energy Metabolism in Health and Disease 3 s.h.
Comprehensive and molecular-driven approach to energy metabolism during exercise and calorie restriction regimens in skeletal muscle, adipose tissue, liver, heart, brain; special emphasis on muscle metabolism and its interaction with other organ systems in treatment and prevention of metabolic diseases (e.g., obesity, diabetes, cardiovascular diseases, cancer). Prerequisites: HHP:3500. Recommendations: HHP:4410 and BIOL:2723.

HHP:4600 Senior Seminar in Creative Problem Solving 1 s.h.
Use of design thinking values and principles; collaborative work to uncover innovative solutions related to undergraduate health and human physiology experience and targeted health behaviors; interactive presentation of content, experimentation of ideas and processes, student-led projects. Requirements: senior standing, health and human physiology or human physiology major, and UI g.p.a. of 3.00 or higher.

HHP:4800 Honors Research I 2 s.h.
Research for honors thesis; selection of faculty mentor, preparation of research proposal, written and oral presentations of research proposal, literature review, participation in experiments designed to develop laboratory skills for research, work with an active research tenure-track faculty member in a laboratory; first of a two-semester sequence. Requirements: honors standing.

HHP:4900 Honors Research II 3 s.h.
Completion of honors research begun in HHP:4800; analysis of data, writing and oral presentation of honors thesis, work with an active research tenure-track faculty member in a laboratory; second of a two-semester sequence. Requirements: honors standing and grade of B or higher in HHP:4800.

HHP:4920 Health Promotion Preinternship Seminar 1 s.h.
Preparation for internship experience.

HHP:4930 Health Promotion Internship 3,6 s.h.
Directed practical field experience; program planning, implementation, evaluation, administrative procedures. Prerequisites: HHP:4200 and HHP:4210 and HHP:4320 and HHP:4420 and HHP:4920.

HHP:4935 Clinical Exercise Physiology Internship 1-6 s.h.
Directed practical field experience; program planning, implementation, evaluation, and administrative procedures.

HHP:4940 Health Promotion Honors Readings 1-2 s.h.
First step to complete an honors thesis; work with health and human physiology faculty member; comprehensive readings in a specific area (e.g., obesity in children, disabilities and sport); readings include primarily research reviews, popular press, and editorials; production of an annotated bibliography summarizing readings and presentation to faculty member at end of semester; brief research proposal summarizing background, research questions, and methods of selected area.

HHP:4950 Health Promotion Honors Problems 3-4 s.h.
Continuation of HHP:4940; original research or creative project supervised by a faculty member.
Sport and Recreation Management

SRM:3147 Sport Event Management 3 s.h.
Current status, challenges, and opportunities in sporting event industry; sporting event planning, budgeting, marketing, sponsorship, and evaluation; development of event timelines and event management skills; introduction to networking and interaction with sporting events. Recommendations: SRM:3154.

SRM:3149 Coaching Interscholastic Athletics 3 s.h.
Techniques and theories of coaching interscholastic athletes; ethics and legal responsibilities of coaching; coaching youth sports; leadership principles and techniques, organizational theories, assessment and implementation of coaching styles; trends, foundations, and principles related to basic philosophies of organized coaching; capstone course for certification of youth sports programs; credit and documentation for advanced coaching certification.

SRM:3150 Recreation Administration 3 s.h.
Personnel, finance, budgets, liability, marketing.

SRM:3151 Liability in Sport and Recreation 3 s.h.
Unintentional torts (negligence), civil liability, and criminal liability in recreation and sport settings; focus on community/commercial recreation and campus recreation settings. Requirements: must have 30 s.h. completed.

SRM:3152 Sport and Recreation Facility Management 3 s.h.
Facilities management, personnel assignment and evaluation, fee structures, maintenance, programming, compliance with regulations and standards. Requirements: must have 30 s.h. completed.

SRM:3153 Sport Business Practices 3 s.h.
Business of professional and intercollegiate athletics including league, team, and player-level issues; revenue generation and distribution; competitive balance issues; sport league structure strategies; business behind intercollegiate athletics and challenges facing NCAA structure; negotiation. Requirements: must have 30 s.h. completed.

SRM:3154 Foundations of Event Management 3 s.h.
Large, major special events, professional meetings, and conferences; development and planning, implementation of events, management and evaluation of events; development requirements of planning events, development strategies, budgeting, staffing requirements, resource allocation, site planning, basic risk management requirements, emergency procedures; event implementation policy and procedures; relationship to elements within development stages; event management and evaluation procedures. Same as EVNT:3250, JMC:3250.

SRM:3156 Design of Recreation Facilities 3 s.h.
Horticulture, floriculture, landscape design, agronomy, turf management; their relation to planning and design of recreation and park areas and facilities. Requirements: must have 30 s.h. completed.

SRM:3157 Managerial Operations in Sport and Recreation 3 s.h.
Introduction to the operation of a private or nonprofit sport-related business.

SRM:3158 Sport and Recreation Promotion 3 s.h.
Foundations and principles of recreation sport promotion and sales operation; application of foundations and principles to sport and recreation industries; historical aspects; current and future trends of sport and recreation management as it relates to sales and promotions; sales management, marketing, financial/economic, legal, and ethical principles related to sport management. Requirements: must have 30 s.h. completed.

SRM:3172 Finance in Sport and Recreation 3 s.h.
Capital funding and revenue acquisition for funding public and private sport and leisure service organizations; contemporary sport and leisure service; financial and economic issues. Requirements: 30 s.h. completed.

SRM:3173 Work and Leisure in American Culture 3 s.h.
Methods and insights of American studies and leisure studies applied to work/leisure relationship in American life; patterns and perceptions of work and leisure, leisure's share and potential; changing American values.

SRM:3175 Sales in Sport 3 s.h.
Fundamentals of business development and sales management; incentivizing sports consumers, direct and indirect sales strategies, brand communications, atmospherics, technology in sports sales, ticket sales, licensing products, negotiating sports sponsorships, and brand building. Recommendations: health and human physiology major.

SRM:3176 Sports Analytics for Coaches, Managers, and Other Decision Makers 3 s.h.
Data management, analytic models, and information systems; how sports analytics are used to make decisions for structuring athletic departments, develop in-game competitive strategies, and improve player performance; analytic examples applied to professional sports, college sports, high school sports, and fantasy sports; experience with statistics or computer science not required.

SRM:3177 Communications and Public Relations in Sports 3 s.h.
How public relations is used to promote service products, demonstrate social responsibility, and communicate with consumers and investors; campaigns, customer service, legal and ethical considerations in promoting service products, media events, information services, public relations in strategic management, atmospherics, critical service moment, social media. Recommendations: health and human physiology major.

SRM:3300 Writing for Sport and Recreation Managers 3 s.h.
Development of effective writing skills that apply to diverse professional situations; proper mechanics of effective writing, persuasive writing, informative writing, factual writing; writing styles applied to document formats (e.g., press releases, emails, memos, marketing messages, interviews, fundraising requests, digital newsletters); student-centered activities in a workshop format.

**SRM:4190 Preinternship** 0-1 s.h.
Orientation to internship process. Requirements: sport and recreation management major.

**SRM:4194 Honors Readings** arr.

**SRM:4195 Honors Problems** arr.

**SRM:4196 Internship** 9 s.h.
Capstone course for recreation sport business track; 360 contact hours of practical experience with private or nonprofit recreation or sport-related enterprise; supervision by an agency mentor and a university representative. Prerequisites: SRM:1060 and (SRM:3150 or SRM:3157) and SRM:3151 and SRM:3152 and SRM:3153 and SRM:3156 and SRM:3158 and SRM:3172 and SRM:4190. Requirements: completion of all recreation sport business core courses, foundation courses, and elective concentration courses.

**SRM:4197 Sport and Recreation Business Practicum** 1-3 s.h.
Educational opportunity involving a small group of students in a unique sport business experience; students serve as consultants for a sport or recreation organization; in-class preparation prior to off-campus work with designated agency; sport or recreation enterprise vary according to faculty expertise and agency availability.

**SRM:4198 NCAA Rules Compliance and Enforcement** 3 s.h.
Rules that govern NCAA athletics, rules compliance function on campuses of member institutions, and enforcement of rules by NCAA; essential legislation in NCAA Manual, including bylaws covering recruiting, eligibility, and amateurism; history of NCAA as related to organization's current structure and activities; summer session capstone experience includes attendance at NCAA Regional Rules Seminar in Indiana and participation in educational sessions conducted by NCAA staff.

**Therapeutic Recreation**

**TR:3160 Introduction to Therapeutic Recreation** 3 s.h.
Lifestyles and barriers faced by persons with disabilities; basic aspects of the therapeutic recreation profession; skills used to establish therapeutic relationship; techniques used with patients; theoretical and conceptual bases for practice.

**TR:3161 Assessment and Evaluation in Therapeutic Recreation** 3 s.h.
Basic assessment psychometrics (e.g., reliability), standardized instrumentation and data collection (e.g., observation, self-report), construction of instruments, data reduction. Prerequisites: TR:3160.

**TR:3162 Therapeutic Recreation: Clientele** 3 s.h.
Developmental patterns of special populations; examination of specific interventions and research applied to specific cognitive, emotional, and physical impairments.

**TR:3163 Concepts and Issues in Therapeutic Recreation: Advancement of the Profession** 3 s.h.
Ethical, professional, and theoretical issues in delivery of therapeutic recreation services; impact of legislation, standards of practice, health care reform; application of research to practice and marketing services. Prerequisites: TR:3160.

**TR:3164 Therapeutic Recreation: Rehabilitation** 3 s.h.
In-depth review of therapeutic recreation techniques used in clinical and community rehabilitation; opportunities to use techniques with patients. Prerequisites: TR:3160.

**TR:3165 Child Life: Methods and Materials** 3 s.h.
Interventions unique to child life practice (e.g., pain management, coping, preoperative play, terminal illness). Prerequisites: TR:1077.

**TR:3166 Child Life: Seminar** 3 s.h.

**TR:3170 Children and Health Care** 3 s.h.
Broad overview of issues and systemic approaches to working with children in a health care setting; practical and clinically-based experiences for pediatric population; provision of health care services to patients and issues that affect them; models of intervention, ethical issues, case studies, and impact of cultural diversity on health care; for undergraduates who are interested in working with children in a health care setting.

**TR:3171 Child Life Practical Application** 3 s.h.
Overview of medical conditions and treatments commonly encountered by children and adolescents in health care settings; common pediatric sedation medications; sequence of medical procedures to understand how to provide procedural preparation and support; facilitate medical play with pediatric population.

**TR:3174 Cultural Perspectives in Health Care** 3 s.h.
Health care beliefs related to various cultures and religions; focus on illness, hospitalization, treatment, death.

**TR:3260 Play and Childhood** arr.
Multiple levels of theories and current research on importance of play in child development; advocacy for importance and necessity of play in childhood that leads to well being and healthy lifestyles; practical- and theoretically-based experiences; for students interested in working with children in health care, clinical, school, community, and family life settings. Prerequisites: TR:1077.
TR:3261 Inclusive Recreation 3 s.h.
Laws pertaining to access to recreation and leisure opportunities for disabled persons in a community; evaluation of physical access to built environment; how social construction of disability can be a barrier to integrated leisure involvement; practical aspects of how to include disabled persons in community recreation and sport activities.

TR:3281 Special Projects in Child Life Practice 2 s.h.
Student directed and student led hospital camping experience for patients at the University of Iowa Children’s Hospital; planning and preparing for a large function, planning and leading therapeutic activities, working directly with patients and their families, processing and discussion of experiences and concerns; practical and clinical-based experiences for students interested in working with pediatric population in health care setting. Requirements: hospital orientation, patient confidentiality (HIPAA) training, and health screening.

TR:4167 Child Life Practicum 1-3 s.h.
Experience observing and assisting child life staff members providing services to hospitalized children, under Certified Child Life Specialist supervision.

TR:4169 Spring Break Child Life Experience 1 s.h.
Practical experience with ill children, including a trip to the Give Kids the World village in Florida; documentation and engagement of course materials, experience working with ill children; students are assigned a specific diagnosis and present the diagnosis (appropriate statistics, effects of hospitalization, treatment, etc.) on child and family; coping strategies, appropriate methods of talking to and interacting with children and families, overview of child life in hospitals.

TR:4190 Preinternship Seminar 1 s.h.
Interviewing skills, résumés and cover letters, selection of internship site(s), application procedures for internship positions, and responsibilities of interns to the agency.

TR:4191 Therapeutic Recreation Internship arr.
Practical field experience; direct leadership, program planning, administrative procedures. Prerequisites: TR:4190.

TR:4192 Child Life Internship 9,12 s.h.

TR:4193 Independent Study arr.
Problem in a specific area.

TR:4194 Honors Readings arr.
Independent reading or research project under faculty supervision usually leading to an honors paper. Requirements: admission to honors program.

TR:4195 Honors Problems arr.
Completion of a project over and above normal independent study as an honors project; major research effort involving close work with an advisor.

Graduate

Athletic Training Program

ATEP:5010 Seminar in Athletic Training 1-4 s.h.
Educational issues faced by approved clinical instructors in athletic training education programs. Offered fall semesters.

Health and Human Physiology

HHP:5000 Problems arr.

HHP:6000 Research arr.

HHP:6010 Non-Thesis Seminar 2 s.h.
For candidates for the M.S. without thesis. Offered spring semesters.

HHP:6050 Advanced Topics in Obesity 3 s.h.
In-depth overview of biological, behavioral, and societal causes and consequences of obesity epidemic; potential solutions from primary and secondary prevention standpoints; causes of obesity, available treatments, and global impact that obesity epidemic presents to society.

HHP:6130 Advanced Skeletal Muscle Physiology 1,3 s.h.
Skeletal muscle structure, contractile mechanisms, production of movement, biomechanical properties; adaptation to increased use, disuse, injury. Offered spring semesters. Prerequisites: HHP:3500.

HHP:6150 Advanced Clinical Exercise Physiology 1,3 s.h.
Recent advances in exercise physiology for clinical populations; emphasis on acute and chronic responses to exercise in healthy aged adults and in patients with cardiac, vascular, pulmonary, and metabolic diseases; basic and intermediate electrocardiography (ECG), pathophysiology of disease process, clinical assessment of disease severity, diagnostic testing, acute exercise responses, and exercise rehabilitation. Prerequisites: HHP:3500 and HHP:4410. Recommendations: HHP:4460.

HHP:6200 Advanced Metabolic Exercise Testing and Prescription 1,3 s.h.
Basic techniques in physical fitness assessment; prescription of exercise for healthy and unhealthy adults; promotion of physical activity within communities; knowledge and skill competencies required for certification as American College of Sports Medicine health fitness instructor. Prerequisites: HHP:2200 and (HHP:1300 or HHP:3500).

HHP:6210 Epidemiology of Physical Activity 3 s.h.
Physical activity/disease relationships examined through application of epidemiologic methods, including research design, interpretation of studies, selection of measures to fit research questions. Same as EPID:6245.
HHP:6300 Seminar in Motor Control  1 s.h.
Current topics in neural control of movement, biomechanics, and rehabilitation sciences.

HHP:6400 Integrative Physiology Seminar  1 s.h.
Current topics in cardiovascular physiology, vascular biology, free radical biology.

HHP:6410 Advanced Exercise Physiology  1,3 s.h.
Mechanisms responsible for acute and chronic effects of exercise on different organ systems of the body. Offered fall semesters. Prerequisites: HHP:1300 or HHP:3500.

HHP:6460 Advanced Cardiovascular Physiology  1,3 s.h.

HHP:6470 Advanced Physiology of Aging  1,3 s.h.
Effects of aging on cells, tissues, and organs; how aging influences function of major body organ systems and the whole organism; physiological mechanisms that underlie age-related changes in body function and performance; integrative approach with focus on human aging. Prerequisites: HHP:1100 and HHP:3500.

HHP:6480 Advanced Human Pharmacology  1,3 s.h.
General pharmacology (administration, distribution, elimination of drugs, dose response curves, adverse effects, placebos, homeopathy); pharmacotherapy of selected human diseases, pathophysiologic aspects of disease, how different classes of drugs modify pathophysiologic effects to restore health or reduce impact of disease; focus on mechanisms of drug actions in humans; adverse effects, pharmacokinetic considerations, drug interactions; how to write prescriptions. Prerequisites: HHP:3500.

HHP:6500 Seminar in Health Promotion  1 s.h.
Peer and faculty response to graduate student work addressing health promotion, physical activity and health outcomes, clinical exercise physiology; review and critique current literature; presentation of published work or in-process projects; critical thinking, scientific writing, and oral communication skill development pertaining to health promotion.

HHP:6510 Advanced Energy Metabolism in Health & Disease  1,3 s.h.

HHP:7000 Practicum in College Teaching  arr.

HHP:7290 Graduate Internship  3-9 s.h.
Requirements: recreational sports management emphasis.

HHP:7300 Advanced Neural Control of Posture and Movement  1,3 s.h.
Neuroanatomical and neurophysiological bases of human motor control; mechanisms for locomotion and posture, control of arm and hand movements, role of sensory information. Offered spring semesters. Prerequisites: HHP:3500. Requirements: anatomy or human physiology course.

HHP:7500 Thesis: M.S.  0-4 s.h.

Sport and Recreation Management

SRM:5065 The Economy of Experience  3 s.h.
In-depth analysis of emerging experience economy; just as manufacturing sector of economy supersedes agriculture and service economy supersedes manufacturing, how experience economy is gaining ascendancy as the last, best hope for future economic growth; exploration of current research in positive psychology and sociologist findings on evolution of post-materialist values as related to experience economy; evaluation of current trends; critical analysis and theory development; case studies; original research and investigation of novel marketing possibilities and experience design.

SRM:6251 Risk Management  3 s.h.
Legal knowledge necessary for effective management of sport, recreation, and physical activity programs, avoidance of legal problems; strategies for addressing issues such as right to participate, liability for injuries, risk management; legal statutes that govern sport, health, recreation organizations.

SRM:6252 Economics and Financing  3 s.h.
Economic issues for sport/leisure services in nonprofit, private/commercial, and public sectors; strategic financial analysis for the nonfinancial manager; principles, issues in financing sport/leisure organizations.

SRM:6253 Sport Administration  3 s.h.
Overview of various segments that constitutes the role and function of a sport administrator (i.e., planning, organizing, leading, controlling); focus on ways in which sport administrators and their subsequent organizations influence and are influenced by the link between sport and globalization; sport administration encompassing services provided within an organizational context; administration viewed as the coordination of production and distribution of those services.

SRM:6254 Marketing and Sport Promotion  3 s.h.
Overview of varied segments that constitutes sports business practice, including marketing, data-based marketing, sales, promotion, sponsorship; varied segments that make up the sport industry, including the mass media, infrastructure, stadium building, consumer behavior; readings and discussions consider the development and structure of each segment, interactions between segments, planning, policy implications; focus on the United States, professional team sports, comparisons to other sports.

Therapeutic Recreation

TR:5200 Historical and Philosophical Perspectives on Leisure  3 s.h.
Historical and philosophical origins of leisure studies; historical issues related to leisure ideas, such as shorter hours, share-the-work, utopian vision of a better society.

TR:5205 Research Methods and Leisure Behavior 3 s.h.
The scientific process: research designs for experiments and surveys, questionnaire construction, sampling theory, basic data analysis.

TR:5211 Professional Ethics and Practice in Pediatrics 3 s.h.
Examination of core issues in clinical pediatrics; beginning life critical care, end-of-life care, role of medical technology, public health research pertinent to children, and maintaining professional boundaries. Prerequisites: TR:1077.

TR:6262 Procedures in Therapeutic Recreation 3 s.h.
Current issues in the field; application of business and research principles to therapeutic recreation practice and program administration.

TR:7289 Graduate Practicum in Therapeutic Recreation 3 s.h.
Field placement with a therapeutic recreation service delivery agency; meets NCTRC certification standards. Prerequisites: TR:3160. Corequisites: TR:3163 and TR:3164.

Health and Physical Activity Skills

HPAS:1001 Alcohol and Your College Experience 1 s.h.
Patterns of alcohol, drug use focused on college years; strategies for monitoring use, behavioral change plans for implementing lower-risk drinking practices; for drinkers and non-drinkers.

HPAS:1002 Tobacco and Your College Experience 1 s.h.
Current behavior change theories related to tobacco use, cessation; nicotine replacement therapies (NRT), non-NRT methods; triggers, relapse prevention, cognitive behavioral skills, support systems; for smokers and non-smokers.

HPAS:1003 Resiliency and Your College Experience 1 s.h.
Resiliency and psychological hardiness theories relevant to college life; resiliency and ability to cope with challenges; components of psychological fitness; skills for personal growth and emotional well-being.

HPAS:1004 Food and Your College Experience 1 s.h.
Sociocultural perspective on the forces that facilitate "junk" diets, particularly during young adulthood; basic components of nutrition; opportunity to develop skills in diet planning and healthy eating.

HPAS:1005 Indoor Group Cycling 1 s.h.
Introduction to group cycling; bike setup, safety, proper technique, injury prevention, and utilization of interval training.

HPAS:1010 Personal Fitness 1 s.h.

HPAS:1020 Core Strengthening 1 s.h.

HPAS:1030 Aerobics 1 s.h.

HPAS:1040 Pilates 1 s.h.

HPAS:1060 Resistance Training 1 s.h.

HPAS:1070 Hawkeye Pump I 1 s.h.
Introduction to basic principles of weight training using barbells and dumbbells as resistance; muscular anatomy, principles of weight training, muscular strength, muscular endurance, weight room safety, motivation and goal setting, personal program development; no prior weight training experience required.

HPAS:1075 Hawkeye Pump II 1 s.h.
Builds on skills and concepts acquired in HPAS:1070; advanced weight training programs aimed at developing muscular strength and endurance. Prerequisites: HPAS:1070. Recommendations: knowledge of basic anatomy, ability to demonstrate proper lifting techniques, and understanding of weight training principles.

HPAS:1080 Olympic Weightlifting 1 s.h.
Introduction to Olympic weightlifting exercises including snatch, clean and jerk, power snatch, and power clean. Prerequisites: HPAS:1070.

HPAS:1110 Fitness Walking 1 s.h.

HPAS:1130 Jogging I: Beginners 1 s.h.

HPAS:1135 Jogging II 1 s.h.

HPAS:1210 Relaxation Techniques 1 s.h.

HPAS:1220 Flexibility 1 s.h.

HPAS:1230 Hatha Yoga 1 s.h.

HPAS:1320 Lap Swimming I 1 s.h.

HPAS:1325 Lap Swimming II 1 s.h.
Prerequisites: HPAS:1320.

HPAS:1410 Badminton 1 s.h.

HPAS:1430 Racquetball 1 s.h.

HPAS:1440 Table Tennis 1 s.h.

HPAS:1450 Tennis 1 s.h.

HPAS:1530 Volleyball I 1 s.h.

HPAS:1535 Volleyball II 1 s.h.
Prerequisites: HPAS:1530.
HPAS:1549 Sand Volleyball 1 s.h.
HPAS:1550 Slow-Pitch Softball 1 s.h.
HPAS:1560 Ultimate Frisbee 1 s.h.
HPAS:1610 Self Defense 1 s.h.
HPAS:1620 Karate 1 s.h.
HPAS:1630 Kick Boxing 1 s.h.
History

Chair
• Elizabeth Heineman

Undergraduate major: history (B.A.)
Undergraduate minors: history; Latina/o studies
Graduate degrees: M.A. in history; Ph.D. in history
Faculty: http://clas.uiowa.edu/history/people/faculty
Web site: http://clas.uiowa.edu/history/

The Department of History's purpose is to increase knowledge of human experience and provide students with opportunities to gain information about and learn methods for understanding their world in light of its past. In addition to offering these essential elements of a liberal education, the department trains professional historians and teachers of history and serves those who require knowledge of a period or aspect of history as background for their own specialized interests in other fields.

Faculty and students in the department participate in many of the University's interdisciplinary departments and programs, including American studies, African American studies, ancient civilizations, Asian studies, international studies, Latin American studies, and gender, women's, and sexuality studies.

Undergraduate Programs of Study

- Major in history (Bachelor of Arts)
- Minor in history
- Minor in Latina/o studies

Students who major in history work in a variety of positions in business, education, public service, advertising, and journalism after graduation. Many go on to graduate study in history, law, religion, library and information science, or social work.

History majors are encouraged to take courses in other fields that illuminate and expand the meaning of history courses and that introduce information and a variety of approaches to understanding how societies and cultures work.

For example, students majoring in history are encouraged to complete the College of Liberal Arts and Sciences General Education Program (p. 313) foreign language requirement by choosing a language that fits their interests in history. The department's faculty members particularly encourage study abroad programs that complement students' foreign area interests. Majors also are encouraged to improve their writing and speaking skills.

Bachelor of Arts

The Bachelor of Arts with a major in history requires a minimum of 120 s.h., including 36 s.h. of work for the major. History courses numbered 1000-1999 do not count toward the 36 s.h. for the major. Students must maintain a g.p.a. of at least 2.00 in all courses for the major and in all UI courses for the major. They also must complete the College of Liberal Arts and Sciences General Education Program (p. 313).

College Level Equivalency Program (CLEP) and Advanced Placement Program (APP) credit does not count toward the history major. Transfer work that is equivalent to University of Iowa course work may be accepted toward the major, but at least 18 s.h. of work for the major, including the introductory course, must be taken at the University of Iowa.

The major is designed for students with a general interest in history. Requirements include an introductory course and a history portfolio in addition to a range of course work in history.

Undergraduate courses in history are divided into four areas: American history, European history, non-Western world history, and courses that have no specific area designation.

Students may count a maximum of 18 s.h. earned in American history courses (numbered 2200-2299, 3200-3299, and 4200-4299) toward the major.

Students also may count a maximum of 8 s.h. earned in the following courses toward the major. Courses on this list that are approved for General Education may be counted toward fulfillment of General Education Program requirements as well as toward requirements for the history major.

HIST:2401 Western Civilization I 3-4 s.h.
HIST:2402 Western Civilization II 3-4 s.h.
HIST:2403 Western Civilization III 3-4 s.h.
HIST:2602 Civilizations of Asia: China 3 s.h.
HIST:2604 Civilizations of Asia: Japan 3-4 s.h.
HIST:2606 Civilizations of Asia: South Asia 3-4 s.h.
HIST:2607 Civilizations of Asia: Korea 3-4 s.h.
HIST:2609 India Now! A Survey from Bollywood Films to Global Terror 3-4 s.h.
HIST:2708 Civilizations of Africa 3 s.h.

The major in history requires the following course work.

INTRODUCTORY COURSE

Students enroll in the following course as soon as possible after declaring the major in history. Each section of the course covers a different area of history, as indicated by the section subtitle. The course includes assigned papers; students must include at least one of the papers in their history portfolio (see "Portfolio" below).

HIST:2151 Introduction to the History Major 3 s.h.

HISTORY COURSES

In addition to completing HIST:2151, students must earn a minimum of 33 s.h. in history courses, including geographical area and era courses (American, European, non-Western world, and pre-1700 history). Students may count a maximum of 18 s.h. earned in American history courses toward the major.

Work for the major must include the following geographical area and era courses.

Two American history courses (numbered 2200-2299, 3200-3299, or 4200-4299) including at least one numbered 3000 or above 6 s.h.
Two European history courses (numbered 2400-2499, 3400-3499, or 4400-4499) including at least one numbered 3000 or above 6 s.h.

Two non-Western world history courses (numbered 2500-2899, 3500-3899, 4500-4999) including at least one numbered 3000 or above 6 s.h.

One pre-1700 history course (see the following list) 3 s.h.

A course within the number range 2100-2199, 3100-3199, 3995-3996, or 4100-4199 does not fulfill a specific geographical area or era, but will count toward degree requirements.

A course taken to fulfill the pre-1700 history course requirement also may be counted toward the requirement in American, European, or non-Western world history.

These courses fulfill the pre-1700 history course requirement:

- HIST:2401 Western Civilization I 3-4 s.h.
- HIST:2402 Western Civilization II 3-4 s.h.
- HIST:2461 Middle East and Mediterranean: Alexander to Suleiman 3 s.h.
- HIST:2602 Civilizations of Asia: China 3 s.h.
- HIST:2604 Civilizations of Asia: Japan 3-4 s.h.
- HIST:2606 Civilizations of Asia: South Asia 3-4 s.h.
- HIST:3211 Native North America I: Precontact-1789 3 s.h.
- HIST:3405 Engineering and Technology in the Ancient Mediterranean 3 s.h.
- HIST:3409 Medieval Civilization I 3 s.h.
- HIST:3410 Medieval Civilization II 3 s.h.
- HIST:4220 The Frontier in American History to 1840 3 s.h.
- HIST:4270 Colonial North America, ca. 1600-1775 3 s.h.
- HIST:4289 The Atlantic World c. 1450-1850 3 s.h.
- HIST:4400 The Roman Empire 3 s.h.
- HIST:4401 Ancient Egypt and the Ancient Near East 3 s.h.
- HIST:4404 The World of Ancient Greece 3 s.h.
- HIST:4406 Warfare in Ancient Mediterranean Society 3 s.h.
- HIST:4407 The Hellenistic World and Rome 3 s.h.
- HIST:4411 Economic and Social History of Medieval Europe 3 s.h.
- HIST:4412 History of the Medieval Church 3 s.h.
- HIST:4417 Medieval Intellectual History 3 s.h.
- HIST:4418 Medieval Intellectual History 1150-1500 3 s.h.
- HIST:4419 Ancient and Medieval Science 3 s.h.
- HIST:4423 Ireland in the Early Middle Ages 3 s.h.
- HIST:4426 Women, Power, and Society in Medieval Europe 3 s.h.
- HIST:4427 Society and Gender in Europe 1200-1789 3 s.h.
- HIST:4431 Early Modern England 3 s.h.
- HIST:4510 Colonial Latin America 3 s.h.
- HIST:4610 Japan—Age of the Samurai 3 s.h.
- HIST:4710 Pre-Colonial African History 3 s.h.
- HIST:4724 Crossing the Indian Ocean 3 s.h.
- HIST:4910 The Book in the Middle Ages 3 s.h.
- HIST:4920 The Transition from Manuscript to Print 3 s.h.

PORTFOLIO

All history majors must complete a portfolio, enrolling in the following course during their final semester or summer session.

- HIST:3193 Undergraduate History Portfolio 0 s.h.

The portfolio must include at least three graded papers written for history courses a student has completed; one of the papers should be from HIST:2151 Introduction to the History Major. The papers in the portfolio should show the development of the student’s skills.

Students should submit their portfolios on the University of Iowa ICON page for HIST:3193 early during the semester in which they plan to graduate.

B.A. with Teacher Licensure

History majors interested in earning licensure to teach in elementary and/or secondary schools must complete the College of Education’s Teacher Education Program (TEP) in addition to the requirements for the major and all requirements for graduation. The TEP requires several College of Education courses and student teaching. Contact the Office of Education Services for details.

Students must satisfy all degree requirements and complete Teacher Education Program licensure before degree conferral.

Course work required for licensure to teach social studies in secondary schools includes a minimum of 15 s.h. in American history (numbered 2200-2299, 3200-3299, and 4200-4299); a minimum of 15 s.h. in non-U.S. history (numbered 2100-2199, 2400-2899, 3100-3199, 3400-3899, 4100-4199, and 4400-4999); and 15 s.h. in a related area outside of history chosen from economics, geography, anthropology, psychology, sociology, or American government. Courses taken as part of the history major, including HIST:2151 Introduction to the History Major, may be counted toward the 15 s.h. in American history and 15 s.h. in non-U.S. history required for certification.

Four-Year Graduation Plan

The following checkpoints list the minimum requirements students must complete by certain semesters in order to stay on the University’s Four-Year Graduation Plan.

**Before the fifth semester begins:** three courses in the major, including HIST:2151 Introduction to the History Major

**Before the seventh semester begins:** four more courses in the major and at least 90 s.h. earned toward the degree

**Before the eighth semester begins:** three more courses in the major and submission of the portfolio of written work (three graded history papers) to the director of undergraduate studies through the HIST:3193 Undergraduate History Portfolio ICON site (a student must
be enrolled in HIST:3193 in order to submit his or her portfolio)

**During the eighth semester:** enrollment in all remaining course work in the major (two courses), all remaining General Education courses, and a sufficient number of semester hours to graduate

**Iowa Degree in Three**

University of Iowa majors who are strongly motivated can graduate with a degree in three years under the Iowa Degree in Three. The program is available to students who can complete more semester hours each term than they would on the Four-Year Graduation Plan.

Students sign an agreement during their first semester of enrollment; meet with an advisor at least once a semester to review their plans and progress; take courses during summer sessions, if necessary; meet specific course checkpoints; and maintain the grade-point average required for the major.

Students are allowed to bring Advanced Placement (AP), College Level Examination Program (CLEP), or transfer credit upon admission to reduce the number of semester hours required for their degree. They should consult their advisor about the program.

**Honors in the Major**

Students majoring in history have the opportunity to graduate with honors in the major. Departmental honors students must maintain a cumulative University of Iowa g.p.a. of at least 3.33. Students write an honors thesis, which is an extended research paper (30-40 pages). They usually complete the thesis during the spring semester of their junior year or fall semester of their senior year. Research for the thesis is done under the supervision of a faculty member who specializes in the field that a student chooses for his or her research. Students register for 3 s.h. of HIST:3995 History Honors Research Seminar and HIST:3996 Theses in each of two semesters. The 6 s.h. of credit counts toward the credit required for the history major.

In addition to honors in their majors, undergraduate students have a variety of opportunities for honors study and activities through membership in the University of Iowa Honors Program; visit Honors at Iowa to learn about the University's honors program.

**Minor: History**

The minor in history requires a minimum of 15 s.h. in history courses, including 12 s.h. earned in courses considered advanced for the minor taken at the University of Iowa. Students must maintain a g.p.a. of at least 2.00 in all courses for the minor and in all UI courses for the minor. Course work in the minor may not be taken pass/nonpass. A maximum of 6 s.h. of work for another University of Iowa major, minor, or certificate may be counted toward the minor.

The minor in Latina/o studies requires the following course work.

**Foundational course:**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIST:2280/SPAN:2280 Introduction to Latina/o Studies</td>
<td>3</td>
</tr>
</tbody>
</table>

**Historical and cultural approaches—at least 6 s.h. from these:**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIST:4216 Mexican American History</td>
<td>3</td>
</tr>
<tr>
<td>HIST:4217 Latina/o Immigration</td>
<td>3</td>
</tr>
<tr>
<td>COMM:1898 Introduction to Latina/o Communication and Culture</td>
<td>3</td>
</tr>
<tr>
<td>POLI:3104 Immigration Politics</td>
<td>3</td>
</tr>
<tr>
<td>SPAN:1700 Latina/o Literature in the U.S.</td>
<td>3</td>
</tr>
<tr>
<td>SPAN:2040 Spanish for Heritage Speakers</td>
<td>3</td>
</tr>
<tr>
<td>SPAN:2050 Spanish in the U.S.</td>
<td>3</td>
</tr>
<tr>
<td>SPAN:3000 Writing Skills for Heritage Speakers</td>
<td>3</td>
</tr>
<tr>
<td>SPAN:3020 Journalistic Writing in Spanish</td>
<td>3</td>
</tr>
<tr>
<td>SPAN:3110 Spanish Sound Structure</td>
<td>3</td>
</tr>
<tr>
<td>SPAN:3130 Introduction to Bilingualism</td>
<td>3</td>
</tr>
<tr>
<td>SPAN:3170 Introduction to Spanish Language Acquisition</td>
<td>3</td>
</tr>
<tr>
<td>SPAN:3400 Chicano Literature and Culture</td>
<td>3</td>
</tr>
<tr>
<td>SPAN:3420/CL:3396 Cuban American Literature and Culture</td>
<td>3</td>
</tr>
<tr>
<td>SPAN:3440 Topics in Latino/a Literature and Culture</td>
<td>3</td>
</tr>
<tr>
<td>SPAN:4800/CINE:4690 Chicano Cinema</td>
<td>3</td>
</tr>
<tr>
<td>SPAN:4820 Latino/a Popular Culture</td>
<td>3</td>
</tr>
<tr>
<td>SPAN:4940 Journalistic Narrative</td>
<td>3</td>
</tr>
</tbody>
</table>

**Comparative and transnational topics—at least 3 s.h. from these:**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIST:4221 The Frontier in American History 1840-Present</td>
<td>3</td>
</tr>
<tr>
<td>HIST:4334 Topics in American Borderlands History</td>
<td>3</td>
</tr>
<tr>
<td>ANTH:3111/GHS:3040 Health in Mexico</td>
<td>3</td>
</tr>
<tr>
<td>ANTH:3142 American Cultures</td>
<td>3</td>
</tr>
<tr>
<td>ENGL:3535 Inter-American Studies</td>
<td>3</td>
</tr>
</tbody>
</table>

And:

One course from the historical and cultural approaches list or the comparative and transnational topics list

**Graduate Programs of Study**

- Master of Arts in history
- Doctor of Philosophy in history

Graduate study in history prepares students for occupations such as high school or college teaching, publishing, commercial research, foundations and nongovernmental organizations, and government or other public service. With additional specialized training, students may become qualified for careers in archival...
work, library work, museum work, or historical site preparation and display. Some choose to pursue the joint Master of Arts/Juris Doctor program, which leads to degrees in both law and history (see the College of Law (p. 969) section of the Catalog for information about the J.D. degree).

Students interested in graduate work may obtain a copy of the current Guide to Graduate Study at the University of Iowa from the Department of History web site. The guide is revised every summer to include the latest faculty listing, research interests of faculty members, detailed regulations on study toward advanced degrees, and other information for students.

Master of Arts

The Master of Arts program in history requires a minimum of 30 s.h. of graduate credit and is offered with two options: one for students who plan to work toward the Ph.D., the other for students who do not. The two plans differ mainly in their concentration in fields: the Ph.D. track emphasizes development of research capabilities culminating in the essay; the non-Ph.D. track stresses breadth of learning.

The M.A. with Ph.D. track requires completion of a research essay. Students must earn at least 24 s.h. of the minimum of 30 s.h. required for the degree in Department of History courses numbered 3000 or above, including at least two seminars, or one seminar and one readings course numbered 6000 or above. One seminar or readings course must be taken in each of the first two semesters of residence. Students must earn 12 s.h. in the area of their essay topic and at least 6 s.h. in a second division, including either a seminar or a readings course numbered 6000 or above. Students in this track are required to take HIST:6001 First-Year Graduate Colloquium during their first semester in the program. History Research Methods [HIST:6002] must be completed prior to earning the M.A. degree.

The essay in the major division must be based on original research and should be approximately 10,000 to 15,000 words long. It usually begins as a term paper for the seminar in the major division and is completed the following semester under the supervisor's guidance. The finished product should emulate the character of articles in learned journals, just as the Ph.D. dissertation takes the form of a full-length scholarly monograph.

Requirements for the M.A. with non-Ph.D. track are similar to those for the Ph.D. track. Students must earn 24 s.h. of the minimum of 30 s.h. required for the degree in Department of History courses numbered 3000 or above. Students in this track are required to take HIST:6001 First-Year Graduate Colloquium during their first semester in the program. They earn 12 s.h. in one major division of history and must include at least one readings or seminar course numbered 6000 or above. Students earn an additional 12 s.h. in history by taking 6 s.h. in each of two other divisions of history, or by taking 6 s.h. in one other division of history plus 6 s.h. in a related department; the additional 12 s.h. in history must include at least one readings or seminar course numbered 6000 or above.

After completing these requirements, or during the semester in which they will complete them, M.A. students must take an oral and written comprehensive examination in their major division.

Doctor of Philosophy

The Doctor of Philosophy program in history requires at least 72 s.h. of graduate credit, including credit for work done for the master's degree.

Students who earn the M.A. with research essay at the University of Iowa may be admitted to the Ph.D. program on the favorable recommendation of the examining committee. Students who earn an M.A. at another university must meet the admission requirements of the Graduate College and the Department of History (see "Admission" below). They must submit a writing sample, such as a seminar paper or an M.A. thesis. They also must take a research seminar during their first two semesters in residence at Iowa.

Ph.D. students must complete at least eight graduate-level Department of History courses numbered 6000 or above, earning 3 or 4 s.h. of credit for each course. The courses must be research seminars (minimum of three) and graduate readings courses (minimum of five). At least five of the eight courses must be completed before a student takes the comprehensive examination. Courses taken at the M.A. level may be counted toward this requirement. Prior to completing the Ph.D., all students in the program must complete all three required courses: HIST:6001 First-Year Graduate Colloquium, HIST:6002 History Research Methods, and HIST:6003 History Theory and Interpretation. These courses develop an understanding of the philosophy of history, historiography, and methods of historical research.

The department has no general language requirement for the Ph.D., but the supervising faculty member may require a student to demonstrate a reading knowledge of one or more foreign languages and proficiency in the use of other study tools. Students may not complete the comprehensive examination until these requirements have been met.

The comprehensive written and oral examination covers three distinct fields. Two of the fields must be in a major division chosen from the following divisions.

- Africa
- China
- East Asia
- Europe, early modern
- Europe, modern
- Europe, medieval
- India
- Japan
- Korea
- Latin America
- The ancient world
- The Middle East
- The United States

Students may construct another field, subject to approval by the comprehensive exam committee.

The third field must be a division outside the student's major division or a field from a related department outside history. The committee may define and delimit the individual fields for examination. It also may set, separately for each field, the character of the written portion of the comprehensive examination, which may take the form of a syllabus, a critical bibliography, a topical paper, a portfolio, or any other form or combination of forms that the committee deems suitable. The oral portion
of the comprehensive examination focuses on issues and problems arising from the examination papers. The candidate must submit to the dissertation committee a written prospectus for the dissertation no later than the semester following completion of the comprehensive exams. The committee consists of at least five members, including at least one member from outside the department. It considers the prospectus and may approve it, reject it, or require its revision. When the dissertation is completed in final form, the committee administers the final examination for the doctorate, a formal oral defense of the dissertation that usually lasts two hours.

**Admission**

Applicants must meet the admission requirements of the Graduate College; see the Manual of Rules and Regulations of the Graduate College. Applicants must submit academic transcripts and Graduate Record Examination (GRE) General Test scores. They also must submit examples of original writing to the history department, such as a term paper, a seminar paper, an honors thesis, or a master's essay (applicants to the Ph.D. program); letters of recommendation from three persons familiar with the student's past academic work; and a one- or two-page personal statement of the applicant's purpose for doing graduate work. All application materials are due by January 15 for entry the following August.

**Facilities**

University of Iowa Libraries has unusual strength in all aspects of U.S. history. The Main Library houses the Henry A. Wallace papers and related collections, the Iowa Women's Archives, and other unique materials. In European history, special strengths include the fine collections of French and English materials. The State Historical Society of Iowa in Iowa City and the Herbert Hoover Presidential Library and Museum in West Branch also hold valuable research materials.

**Courses**

Many Department of History courses are approved for the CLAS General Education Program. Look for courses with prefix HIST under “Historical Perspectives,” “International and Global Issues,” and “Values, Society, and Diversity” in the General Education Program (p. 313) section of the Catalog. History courses approved for General Education may not be taken pass/nonpass, even when they are taken as electives.

History majors should take HIST:2151 Introduction to the History Major during their sophomore year or the first semester after they declare the major.

Department of History courses numbered below 6000 are open to first-year students who already have fulfilled the General Education Program Historical Perspectives requirement.

Courses numbered 6000 or above are offered as occasion demands.

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**Lower-Level Undergraduate**

**HIST:1000 First-Year Seminar**

1-2 s.h.

Small discussion class taught by a faculty member; topics chosen by instructor; may include outside activities (e.g., films, lectures, performances, readings, visits to research facilities). Requirements: first- or second-semester standing.

**HIST:1002 Issues in Medieval Society**

GE: Historical Perspectives.

3 s.h.

**HIST:1004 Issues in Human History: Communities and Society in History**

GE: Historical Perspectives.

3 s.h.

**HIST:1006 Issues: Nature and Society in Historical Perspective**

GE: Historical Perspectives.

3 s.h.

**HIST:1008 Issues in European Politics and Society**

GE: Historical Perspectives.

3 s.h.

**HIST:1010 Issues in Human History: Gender in Historical Perspective**

GE: Historical Perspectives.

3 s.h.

**HIST:1012 Issues in Human History: Europe's Expansion Overseas**

GE: Historical Perspectives.

3 s.h.

**HIST:1014 Issues: Twentieth-Century Crisis**

GE: Historical Perspectives.

3 s.h.

**HIST:1016 Issues in Human History: The Vietnam War in Historical Perspective**

GE: Historical Perspectives; International and Global Issues.

3 s.h.

**HIST:1040 Perspectives: Diversity in American History**

People, cultures, behaviors, and values that have shaped American society and its past. GE: Values, Society, and Diversity.

3 s.h.

**HIST:1115 Energy and Society: History and Science of Oil**

History, politics, and science of oil and oil industry. GE: Historical Perspectives. Same as EES:1115, ENVS:1115, GEOG:1115.

3 s.h.

**HIST:1119 Policy Matters: Perspectives on Contemporary Problems**

Examination of major social issues and challenges faced by nation, state, and communities; what government's role is in a democratic society; how we decide when, where, and how government acts in ways consistent with social goals and values; focus on pressing social issues (i.e., education, inequality, labor standards, health care); historical development of the problem or policy; ways we address social issues; effectiveness of current policies and alternative policies; ways in which social science contributes to policy design and assessment. GE: Social Sciences. Same as SOC:1119.

3 s.h.
HIST:2461 Middle East and Mediterranean: Alexander to Suleiman 3 s.h.
GE: Historical Perspectives. Same as CLSA:2461, RELS:2361.

HIST:2462 Middle East and Mediterranean: Saladin to Napoleon 3 s.h.
Complement to HIST:2461; Mediterranean world from the age of Saladin (12th century) to Napoleon (early 19th century); history and imaginaries of the relationship between Europe and the Middle East.

HIST:2460 Civilizations of Asia: China 3 s.h.
GE: Historical Perspectives; International and Global Issues. Same as ASIA:2602.

HIST:2464 Civilizations of Asia: Japan 3-4 s.h.
GE: Historical Perspectives; International and Global Issues. Same as ASIA:2604.

HIST:2466 Civilizations of Asia: South Asia 3-4 s.h.
GE: Historical Perspectives; International and Global Issues. Same as ASIA:2606.

HIST:2467 Civilizations of Asia: Korea 3-4 s.h.
Introduction to Korean history and culture; how meanings of "Korea" and "Koreans" changed from ancient times to present; relevant issues of politics, society, and culture; events that shaped ancient Korean states—Koryo state (918-1392), the Choson dynasty (1392-1910), Japanese colonization (1910-1945), and the two Koreas (1945-present); how present perspectives on Korea have influenced understandings of its past. GE: Historical Perspectives; International and Global Issues.

HIST:2609 India Now! A Survey from Bollywood Films to Global Terror 3-4 s.h.
Experience of change on adaptations made by India to global conditions in the last 50 years, and on contemporary Indian contributions to global conditions and culture; India environmentalism, Bollywood films and world music, celebrity culture and Nobel prizes, Gandhian activism, economic performance, the explosion of cricket, the place of English language, social movements among women and Untouchables, the Indian diaspora abroad, internal dissent, and the Indian war on terror. GE: Values, Society, and Diversity.

HIST:2687 Perspectives on Korea 3 s.h.
History of Korea from earliest times to present; changing meanings of Korea and Koreans; relevant issues of politics, society, and culture; events that shaped ancient Korean kingdoms, the Choson dynasty (1392-1910), Japanese occupation, and divided Korean peninsula; how present perspectives on Korea have influenced understandings of its past; placement of Korea within a regional and global context to examine Korea's relationship with the world. Same as ASIA:2887.

HIST:2708 Civilizations of Africa 3 s.h.
Introduction to the study of Africa; brief survey of African history; aspects of modern African life, including political and social issues, economic and health problems (including HIV-AIDS); classroom discussion of selected African films shown in class and selected African novels included in course reading. GE: Values, Society, and Diversity.

Upper-Level Undergraduate and Graduate
HIST:3101 History Internship 3-6 s.h.
Internship involving historical work. Requirements: consent of director of undergraduate studies and Pomerantz Career Center.
HIST:3155 The World Since 1945 3 s.h.
GE: International and Global Issues.

HIST:3191 Individual Study: Undergraduate  arr.

HIST:3193 Undergraduate History Portfolio 0 s.h.
Submission of required history portfolio. Requirements: history major and senior standing.

HIST:3485 Early Modern Catholicism 3 s.h.
Same as RELS:3385.

HIST:3991 Individual Study: Undergraduate  arr.

HIST:3993 Undergraduate History Portfolio 0 s.h.
Submission of required history portfolio. Requirements: history major and senior standing.

HIST:3995 History Honors Research Seminar 0-3 s.h.

HIST:3996 Honors Thesis 3 s.h.
Individual research and writing under supervision of faculty member; occasional group sessions with other students in the course.

HIST:4148 Global History as Local History: European Immigration in Iowa 3-4 s.h.
Opportunity to use skills developed in other courses to pursue global history locally; waves of immigration that flowed across Iowa during 19th century; ways in which national and international shifts in economics and geopolitics affected this population and state from mid-19th century through World War II; research project based on a local community of student’s choice; capstone course. Recommendations: junior or senior standing.

HIST:4430 Topics in Material Analysis 3 s.h.
Analysis and description of physical book artifacts and their component parts (parchment, paper, bookbinding) and allied specialties (the lettering arts, printing and illustration techniques); reading, writing, presentations. Same as UICB:4930.

World and General History, Upper-Level Undergraduate and Graduate

HIST:3115 Policy Matters: Perspective on Contemporary Problems 3 s.h.
Public policy issues in scholarly perspective; UI experts provide background introduction to weekly issues; presentations of new policy initiatives, roundtable on policy options; panels representing local, state, and national options and experience involving policy practitioners, legislators, and advocates. Same as POLI:3119.

HIST:3126 History of Globalization 3 s.h.
Broad overview of globalization in modern world history; focus on evolution of international business, world economy, interstate system, and cultural interchange in 19th and 20th centuries; long-distance trade and exchange; global economy under British Empire; globalization after 1945 following a 30-year period of nationalism, war, and depression; global market integration in late 20th century under American supremacy.

HIST:3140 Cooperation in World History 3 s.h.
Origins and role of human cooperation in world history, from human evolution to present; basic evolutionary theory, origins of humans, character of human nature, emergence of human cooperation, human cooperation in comparative zoological perspective; evolution of cooperative institutions such as family, tribe, market, state, mass religion, science, Internet.

HIST:3143 International Politics: The History of the Present 3-4 s.h.
Historical approach to international relations; comprehensive overview of key developments and concepts in history of international politics.

HIST:3145 Europe and the U.S. in the Twentieth Century 3 s.h.
United States-European transatlantic relationship over 20th century in historical perspective; sense of common heritage transformed into program of political purpose; alliances in defense of a shared civilization (the West) challenged by nations and ideologies from Wilhelmine Empire to Nazi Germany and from U.S.S.R. to Islamist groups; reluctant American involvement in Europe, East European claims of inclusion, mutual frustrations and suspicions, differences in interpreting shared tradition; diverging concepts of security, legitimacy, sovereignty, and history lessons underscored by U.S. role as sole superpower and European Union experiment in integration.

HIST:3157 Gender, Sexuality, and Human Rights 3 s.h.
History of gender and sexuality as components in international human rights activism and law; current debates, representative topics. Same as GWSS:3157.

HIST:3190 Traditions of Religious Reform 3 s.h.
Same as RELS:3190.

HIST:3745 Islam in Africa 4 s.h.
African Islamic history beginning with earliest Muslim migrants from Arabia to Ethiopia in early 7th century C.E. to dawn of 21st century; focus on historical development of Islam on African continent, specific regions, and particular themes; part of Islamic Studies Virtual Curriculum and Committee on Institutional Cooperation (CIC) CourseShare Program. Same as IS:3745, RELS:3845.

HIST:3755 Understanding Health and Disease in Africa 3 s.h.
Cultural, historical, and political framework for the delivery of health care services in African nations. Recommendations: junior or higher standing. Same as IS:3555, GHS:3555.
HIST:4100 Historical Background of Contemporary Issues
3 s.h.
arr.

HIST:4101 History of Human Rights
3 s.h.
Survey of human rights literature, authored by historian Kenneth Cmiel; examination of legal-philosophical origins and changing meanings of human rights; human rights activism and social justice movements; creation of international human rights organizations and law; study of historically significant and unremembered cases of human rights violations; consideration of the question posed by Professor Cmiel: What, if anything, has been accomplished in the name of universal rights?

HIST:4105 World Events in Historical Context
3 s.h.
Examination of current international news stories and their historical background; daily reading of The New York Times international news section and online international news stories in U.S. and international news outlets; creating informed world citizens.

HIST:4107 World History I
3-4 s.h.
World history from antiquity to 16th century; political, economic, and environmental forces contributing to social transformations.

HIST:4109 World History II
3-4 s.h.
World history from 16th century to World War II; colonialism, imperialism, capitalism, and industrialization as forces of global social and cultural transformation.

HIST:4125 War and Peace in the Twentieth Century
3 s.h.

HIST:4130 Museum Literacy and Historical Memory
3 s.h.
Concepts and methods for understanding the role of museums in shaping knowledge and collective memory of history; institutionally based exhibits and collections, historical markers and public monuments, public holidays and events, media and artistic works that interpret the past; how events, people, and civic ambitions are memorialized and how memories of them are shaped; appearance of museums and related practices in the non-Western world after 1850. Same as MUSM:4130.

HIST:4131 Origins of Western Science
3 s.h.
Exploration of philosophical, cultural and religious factors behind birth and growth of natural philosophy (science) from prehistory to High Middle Ages. Prerequisites: HIST:2401 or HIST:2402 or HIST:2403. Recommendations: junior or senior standing.

HIST:4132 Science, Medicine, and Race
3 s.h.
Examination of social construction of race in scientific and medical thought; focus on Atlantic world (Europe, Africa, the Americas); construction of race in other parts of world.

HIST:4133 The Rise of Modern Science
3 s.h.
Natural philosophy and science from Italian Renaissance through Scientific Revolution and into modern era, up to and potentially including the 20th century; scientific ideas, cultural and institutional contexts of science. Recommendations: junior or senior standing, and HIST:2401 or HIST:2402 or HIST:2403.

HIST:4135 History of Medicine in Film
3 s.h.
Examination of how American films depicted physicians and health care from the 1930s to the present; attention to what popular films tell us about cultural images of physicians and medicine in American society. Requirements: honors standing.

HIST:4145 The Internet in Historical Context
3 s.h.
History of media technologies (e.g., speech, writing, print, A/V devices, the Internet) from the evolution of speech to the present; ways in which technologies molded social groups and guided beliefs; impact of the Internet on contemporary society and culture.

HIST:4146 The History of Warfare
3 s.h.
World military history from evolution of human kind to present; development of weapons, tactics, and strategies.

HIST:4160 History of Public Health
3 s.h.
State-endorsed measures to avert or control disease in society. Same as GHS:4160.

HIST:4162 History of Global Health
3 s.h.
Foremost problems of health and disease in colonial and postcolonial societies; topical approach. Same as GHS:4162.

HIST:4176 Vietnam War on Film
3-4 s.h.

HIST:4289 The Atlantic World c. 1450-1850
3 s.h.
Interactions between peoples of Europe, Africa, and the Americas between the 15th and mid-19th centuries, interconnected system of exchange that defied national and imperial boundaries; encounters between Native Americans, Africans, and Europeans in different parts of the Americas; forced and voluntary resettlement of Africans and Europeans overseas; development of plantation slave societies; biological consequences of transatlantic contact; circulation of people, goods, and ideas; development of creole societies; era of revolutions; abolition of slavery. Same as AINS:4289.

HIST:4334 Topics in American Borderlands History
3 s.h.
Broad historical overview of the American Borderlands, a region that has been the site of conflict, cultural exchange, and economic interdependence.

HIST:4501 Society and Revolution in Cuba
3 s.h.
Cuban society and revolutionary movements since the late colonial period, including the years since 1959.

HIST:4502 History of Mexico
3 s.h.
Mexican history since the eve of the Spanish invasion, with focus on the national period; may include ethnic groups, conquest and demographic disaster, native survival, labor and migration, social protest and rebellions, nationhood, regional differences, religions, popular culture, economic growth and distribution, state building, international relations; survey. Same as AINS:4502.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIST:4505</td>
<td>Topics in Latin American History</td>
<td>3 s.h.</td>
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<tr>
<td>HIST:4510</td>
<td>Colonial Latin America</td>
<td>3 s.h.</td>
<td>Cultural, institutional continuity from 16th century to independence.</td>
</tr>
<tr>
<td>HIST:4515</td>
<td>Introduction to Modern Latin America</td>
<td>3 s.h.</td>
<td>Cultural, institutional continuity from independence to present.</td>
</tr>
<tr>
<td>HIST:4520</td>
<td>Latin America and the U.S.: The Historical Perspective</td>
<td>3 s.h.</td>
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<tr>
<td>HIST:4525</td>
<td>Latin American Revolution</td>
<td>3 s.h.</td>
<td></td>
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<tr>
<td>HIST:4526</td>
<td>Dictatorships of Latin America</td>
<td>3 s.h.</td>
<td>Dictatorships, truth commissions, politics of memory in modern Latin America; the political and socio-economic origins of authoritarian regimes as well as their forms of rule, sources of support, uses of violence, and eventual downfall; the experience of specific sectors of society under authoritarian regimes, forms of resistance to authoritarianism, memories of terror, efforts to forge peace and justice in the aftermath of horror; includes personal testimony, film, human rights, reports, historical studies.</td>
</tr>
<tr>
<td>HIST:4605</td>
<td>Disease, Politics, and Health in South Asia</td>
<td>2-4 s.h.</td>
<td>South Asia's long-term success lengthening lives and stopping disease, weighed against its continuing burden of infection, violence, pollution, and class-based suffering. Same as GHS:4605.</td>
</tr>
<tr>
<td>HIST:4610</td>
<td>Japan—Age of the Samurai</td>
<td>3 s.h.</td>
<td>Society, culture, and politics of feudal Japan; social class, gender, norms, and political and economic developments explored through cinema and literature. Same as JPN:4610.</td>
</tr>
<tr>
<td>HIST:4615</td>
<td>Modern Japan</td>
<td>3 s.h.</td>
<td>Political, social, and cultural developments of Japanese feudalism; feature films, fiction. Same as JPN:4615.</td>
</tr>
<tr>
<td>HIST:4617</td>
<td>History, Memory, and Pacific War</td>
<td>3 s.h.</td>
<td>Contemporary meanings of the Pacific War in collective memory of Americans and Japanese.</td>
</tr>
<tr>
<td>HIST:4620</td>
<td>Japan-US Relations</td>
<td>3 s.h.</td>
<td>Political, social, economic, and cultural developments in Japan mid-19th to late-20th century. Same as JPN:4620.</td>
</tr>
<tr>
<td>HIST:4640</td>
<td>Imperialism and Modern India</td>
<td>3 s.h.</td>
<td>Introduction to the political, economic, social, and cultural history of India from 1700 to present; historically India included the territories of present-day Pakistan and Bangladesh; at present India extends through diasporic Indian communities to East Africa, North America, Europe, and the Caribbean.</td>
</tr>
<tr>
<td>HIST:4650</td>
<td>Chinese History from 1600 to 1927</td>
<td>3 s.h.</td>
<td>Chinese history from the 17th to early 20th century, history of the Qing dynasty (1644-1911); Qing's role in shaping aspects of today's politics in China and the mentality of Chinese people; foundation of Manchu state in early 17th century, Ming-Qing transition in 1644, politics and society during the high Qing era, decline of the empire under foreign invasion and inner rebellions in the 19th century, collapse of the dynasty in 1911. Same as ASIA:4657.</td>
</tr>
<tr>
<td>HIST:4653</td>
<td>Law and Society in Late Imperial and Modern China</td>
<td>3 s.h.</td>
<td>Same as IS:4653.</td>
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<tr>
<td>HIST:4655</td>
<td>China Since 1927</td>
<td>3 s.h.</td>
<td>Communist revolution from 1920s to founding of People's Republic of China in 1949; Mao Zedong's radical policies, Cultural Revolution; Deng Xiaoping's economic reforms; China today. Same as ASIA:4655.</td>
</tr>
<tr>
<td>HIST:4666</td>
<td>Topics in Asian History</td>
<td>3 s.h.</td>
<td>Same as ASIA:4166.</td>
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<tr>
<td>HIST:4685</td>
<td>Modern Korean History</td>
<td>3 s.h.</td>
<td>Transformation of Choson Korea to North and South Korea; local, regional, and global transformations in Korea from the late 19th century to present, including the severing of its historic ties with China; encounters with the West and Japan; new ideas of civilization and political community; the erasure of Choson as a country in 1910; the colonial experience; civil war; industrialization; creation of North Korea; democratic movement in South Korea and spread of diasporic communities abroad; Korean peninsula as a laboratory for analyzing compressed communist and capitalist modernities of the 20th century.</td>
</tr>
<tr>
<td>HIST:4710</td>
<td>Pre-Colonial African History</td>
<td>3 s.h.</td>
<td>Africa to 1880; oral tradition, other sources; political development, ecological change, slavery and slave trade. GE: Historical Perspectives. Same as AFAM:4310.</td>
</tr>
<tr>
<td>HIST:4715</td>
<td>African History Since 1880</td>
<td>3 s.h.</td>
<td>Africa in colonial, post-colonial period; economics, political structures of colonialism; social change, political life in the 20th century. GE: International and Global Issues. Same as AFAM:4715.</td>
</tr>
<tr>
<td>HIST:4723</td>
<td>Slavery, Gender, and Identity in East Africa</td>
<td>3 s.h.</td>
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</tbody>
</table>
Forms of slavery in East African societies; focus on 18th to 20th centuries; primary source readings (i.e., life histories of former slaves); slavery outside the United States; women as important historical actors; processes of enslavement; integration of slaves into East African societies; and perpetuation of social and economic ties between former masters and slaves into the present.

HIST:4724 Crossing the Indian Ocean 2-3 s.h.
Transnational history of Western Indian Ocean; explore cultural and economic networks in the Indian Ocean World; how Islam and colonization are common experiences of peoples in this region; Indian Ocean World historical diversity; analytical concepts such as migration, Islam, globalization.

HIST:4725 Women and Gender in African History 3 s.h.
Importance of female agency in African history; African women's history in historiographical framework of women's history, challenges historians face in exploring African women's past; varied sources (e.g., novels, films, court records) from sub-Saharan Africa, urban and rural settings; current literature on African women, African women's experiences in a comparative context. Same as GWSS:4725.

HIST:4728 Identity, Trade, and Diaspora 3 s.h.
Identity of Swahili people on East African coast; trade networks and diaspora in Arabia and Persian Gulf over the centuries; Swahili civilization marked by urbanity, literacy, Islam, and cosmopolitanism; how scholars' views have changed (scholars originally could not reconcile their conception of Africa, the Dark Continent, with characteristics of this sophisticated culture). Same as SWAH:4000.

HIST:4730 Slavery, Jihads, and Saints in Islamic Africa 3 s.h.
Islamization of sub-Saharan Africa; source material on Islam in sub-Saharan Africa; jihad; slavery; colonial rule; Muslim women; Muslim minorities.

HIST:4810 History of the Modern Middle East 3 s.h.

HIST:4815 Topics in the Modern Middle East 3 s.h.

American History, Lower-Level Undergraduate

HIST:2261 American History 1492-1877 3 s.h.
Discovery through Civil War, Reconstruction; emphasis on social history of colonial era and social, economic, political developments of Revolutionary, antebellum periods.

HIST:2262 American History 1877-Present 3 s.h.
Emphasis on social, political developments of Gilded Age, Progressive Era, Great Depression; the United States as a world power.

HIST:2265 Introduction to African American History 3 s.h.
GE: Values, Society, and Diversity. Same as AFAM:2265.

HIST:2266 Civil War and Reconstruction 3 s.h.

HIST:2288 Introduction to Mexican American History 3 s.h.
Introduction to major themes in Mexican American history from the 18th century to the present; settlement of Mexico's Far North by Spanish Mexican residents, their incorporation into the United States after a war of conquest, and the growth of Mexican Americans into the nation's largest Latino group. GE: Values, Society, and Diversity.

HIST:2290 Food and Culture in Indian Country 3 s.h.
Native Americans as original farmers of 46% of the world's table vegetables; examination of food as a cultural artifact (e.g., chocolate, tobacco); food as a primary way in which human beings express their identities; environmental, material, and linguistic differences that shape unique food cultures among Native peoples across the Western Hemisphere; close analysis of indigenous foods, rituals, and gender roles associated with them; how colonization transformed Native American, European, and African American cultures. Same as AINS:2290, AMST:2290.

American History, Upper-Level Undergraduate and Graduate

HIST:3105 International Events in Historical Context 3 s.h.
Current world events in themselves and as they enter into 2012 U.S. elections; daily readings of the New York Times; selective utilization of other news media, including daily newspapers (Wall Street Journal, Washington Post), major foreign newspapers, periodicals (Foreign Affairs, Foreign Policy), and electronic news media, including network and cable television news programs; gain understanding of the historical background of world events and how these events shape U.S. party politics.

HIST:3202 Introduction to American Indian History and Policy 3 s.h.
Same as AINS:3002.

HIST:3211 Native North America I: Precontact-1789 3 s.h.
Same as AINS:3211.

HIST:3212 Native North America II: 1789-Present 3 s.h.
Same as AINS:3212.

HIST:3219 Indian Wars: History and Poetics of Violence in the United States 3 s.h.
Cultural role of frontier violence, real and imagined, in settler society formations; use of historical accounts, art, literature, museum exhibitions, film, captivity tales, and discursive modes; historical and contemporary portrayals of Indian and settler violence, how these representations functioned, and how imagined violence compared to actual incidents of violence; exploration of violence involving other subalterns that speak to perceptions of the U.S. as a violent nation, often portrayed as a nation of laws; whether these competing legacies can be reconciled.
HIST:3230 American Environmental History 3 s.h.
Introduction to environmental change in American history; human-nature interactions from colonial period to recent past; food and agriculture, industrial technologies and transportation, energy production and consumption, urbanization and sprawl, public lands and public works, environmental politics and law, toxic pollution and health, natural disasters, climate change.

HIST:3232 History of American Inequality 3 s.h.
Survey of causes and consequences of inequality in modern American history.

HIST:3254 Sexuality in the United States 3 s.h.
Same as GWSS:3154.

HIST:3360 American Economic History 3 s.h.

HIST:4201 History of the American Deaf Community 3-4 s.h.
Creation of a distinct language and culture of deaf people in America during the 19th and 20th centuries. Taught in English and/or American Sign Language. Requirements: for 4 s.h. option — concurrent enrollment in ASL:2002, if not taken as a prerequisite. Same as ASL:4201.

HIST:4202 Society and Health Care in American History 3 s.h.
Social and cultural history of health care in the United States from colonial period; social relationships between care providers and patients, disease theories and therapeutic procedures, historical understandings of ethics and health care frameworks.

HIST:4203 Disability in American History 3 s.h.

HIST:4205 American Cultural History 1820-1920 3 s.h.
Culture as contested terrain; creation of cultural hierarchy (high and popular culture); struggles over the cultural construction of meaning; competing stories of America; advent and significance of mass culture.

HIST:4209 U.S. Indian Policy in the American Indian Family 3 s.h.

HIST:4216 Mexican American History 3 s.h.
Survey of Chicana/o (Mexican American) history from 18th century to present; Mexican American society's diverse nature, explored through class, ethnic, gender, and regional divisions.

HIST:4217 Latina/o Immigration 3 s.h.
Immigration experiences of people arriving in the United States from other regions of the Americas (e.g., Mexico, Central America, the Caribbean, South America); what has fueled immigration—social, political, and economic developments in the United States and other nations; territorial conquest, colonialism, real and imagined borders, chain migration, formation of immigrant communities, acculturation, circular migration, social networks; how migration restructures gender relations; immigrant communities and pan-Latino identity in the United States.

HIST:4220 The Frontier in American History to 1840 3 s.h.

HIST:4221 The Frontier in American History 1840-Present 3 s.h.

HIST:4228 Cold War America 3 s.h.
Key historical developments of the Cold War; examination of how the war shaped ideological, political, economic, and cultural aspects of American society.

HIST:4229 The United States as Empire 3 s.h.
The U.S. rise to world power; continental empire-building in the 19th century; industrial, military and colonial power in the early 20th century; global hegemony from the mid-20th century to the present; white settler colonialism; overseas rule of Philippines and Puerto Rico; cultural Americanization; Cold War interventionism; post-9/11 unilateralism; meanings of American exceptionalism, intersections of U.S. nationalism with race and gender, remaking of domestic U.S. society within a changing global and imperial context.

HIST:4230 The Political Culture of U.S. Foreign Policy 3 s.h.
Political culture of U.S. foreign policy in historical perspective; connections and interactions between the domestic scene and international realities, from time of manifest destiny to national security state; domestic foundations of American power and its projection abroad, including constitutional framework, economic developments, rise of the state, role of media, public opinion, civilian-military relations; concepts of race, ethnic identifications, and religious and political beliefs have shaped understandings of patriotism, national interest, international responsibility; great debates in which American national identity and purpose are renegotiated.

HIST:4231 United States in World Affairs to 1900 3 s.h.
Origins of modern diplomatic practices; security, territorial and commercial expansion; legal, constitutional problems.

HIST:4232 United States in World Affairs 3-4 s.h.
America's emergence as leader in world affairs; imperialism, international collaboration, participation in world wars, the Cold War.

HIST:4234 Transnational America 1880-1939 arr.
The United States as a society increasingly embedded in global history during the late 19th- and early 20th-centuries; approaches for thinking about history in transnational ways; intensification of European, Asian, and Latin American immigration; cross-national dimensions of American reform; emergence of diasporic social movements; international scale of the corporate state; politics of colonialism and world war.

HIST:4236 Major Topics in U.S. Foreign Policy 3 s.h.
Continuation of HIST:4232; select themes in the history of U.S. foreign policy studied in greater detail; examination of major conflicts (i.e., World War Two, the Cold War or the Vietnam War, and recent engagements in the Middle East), drawing from a wide range of primary sources, film material, and secondary material.

HIST:4241 Varieties of American Religion 3 s.h.
Examination of varied 20th- and 21st-century American religious individuals and groups; understand and analyze unique communities. Same as RELS:4741.

HIST:4245 The Social History of American Baseball 3 s.h.
History of baseball in the United States from its beginnings as a working-class recreation through the present; history of the game and the people who have played it, how the history of American society is viewed through the lens of baseball, how the game has contributed to social change; social class, race, urbanization, crime and political corruption, public health, big business and professionalism, spectatorship, entertainment and mass culture, national mythology, the exercise of legitimate authority (umpires!).

HIST:4249 History of Iowa and the Midwest 3 s.h.
People of Iowa and surrounding Midwestern states—a land where people work hard, are practical, down to earth, and honest; the idea of a place in the heartland as real or simply a myth; history of Midwestern states from Native American occupation to present; how reality, ideas, and images are portrayed.

HIST:4250 Work and Society in Industrializing America 3 s.h.
Industrialization, formation of an American working class; changing patterns of labor organization, strike activity, politics; impact of ethnic, racial, gender divisions on working class communities, culture.

HIST:4252 American Labor in the Twentieth Century 3-4 s.h.
Competing philosophies and organizational strategies of workers in a maturing industrial economy; impact of world wars and Great Depression on American workers and their unions; rise of service sector, deindustrialization.

HIST:4254 Immigrant America 1845-1925 3 s.h.
Era of mass immigration in world context; formation, organization of immigrant communities; diverse processes of adaptation, assimilation; rural, urban contrasts; coercive Americanization, immigration restriction.

HIST:4255 The Gilded Age in America 3 s.h.
Emergence of industrial, urban America, from Civil War through 1890s; emphasis on social, political developments.

HIST:4256 The Progressive Era in America 3 s.h.
Protest and reform, imperialism, World War I, from 1890s to 1920.

HIST:4259 The Sixties in America 3 s.h.
The 1960s as a moment in American politics and culture, pivotal and romanticized; major events and conflicts, including the election and assassination of President Kennedy, LBJ and the Great Society, civil rights movement and Black Power, counterculture and the urban crisis, sexual revolution and second wave feminism, anti-war protest and silent majority; changing conceptions of the sixties and development of a fresh interpretation.

HIST:4260 U.S.A. in a World at War 1931-1945 3 s.h.
Significance of World War II to the United States.

HIST:4261 The New Deal: Political Response to Economic Crisis in the United States, 1920-1940 3 s.h.
United States between the wars; emphasis on New Era system, Impact of the Great Depression and response by the Hoover administration, the New Deal.

HIST:4262 The Contemporary U.S. 1940-Present 3 s.h.
United States as a global power; emphasis on World War II and Cold War, recent patterns of social and economic change, politics of 1950s, 1960s.

HIST:4264 The Sixties in America 3 s.h.
The 1960s as a moment in American politics and culture, pivotal and romanticized; major events and conflicts, including the election and assassination of President Kennedy, LBJ and the Great Society, civil rights movement and Black Power, counterculture and the urban crisis, sexual revolution and second wave feminism, anti-war protest and silent majority; changing conceptions of the sixties and development of a fresh interpretation.

HIST:4266 The New Deal: Political Response to Economic Crisis in the United States, 1920-1940 3 s.h.
United States between the wars; emphasis on New Era system, Impact of the Great Depression and response by the Hoover administration, the New Deal.

HIST:4266 The New Deal: Political Response to Economic Crisis in the United States, 1920-1940 3 s.h.
United States between the wars; emphasis on New Era system, Impact of the Great Depression and response by the Hoover administration, the New Deal.

HIST:4268 The Contemporary U.S. 1940-Present 3 s.h.
United States as a global power; emphasis on World War II and Cold War, recent patterns of social and economic change, politics of 1950s, 1960s.

HIST:4270 Colonial North America, ca. 1600-1775 3 s.h.
Introduction to major themes in colonial American history prior to the American Revolution. Same as AINS:4270.

HIST:4271 American Revolutionary Period 1740-1789 3 s.h.
Political, military history of colonies 1754-1776; imperial upheaval; building a new nation; creation of federal system.

HIST:4272 Native Americans in the Age of Empires, ca. 1500-1815 3 s.h.
Overview of major issues in Native American history during the period of European Imperialism in North America. Recommendations: junior or senior standing. Same as AINS:4272.

HIST:4273 War and Violence in Early American Societies and Culture 3 s.h.
Introduction to role of warfare and violence in shaping early American society.

HIST:4275 History of Slavery in the U.S.A. 3-4 s.h.
Beginning, expansion, and ending of American slavery; how our national memory of slavery in popular culture (in high school history, in historical landmarks and museums) helps or hinders our understanding of history of slavery in the U.S. Same as AFAM:4275.
HIST:4280 Women and Power in U.S. History Through the Civil War 3 s.h.
Exploration of how women, as political actors, shaped the outcome of major events (the American Revolution, the Civil War); how they organized social movements around important issues of their lives such as the abolition of slavery and the right to consent to sexual intimacy; how women's inequality was established in law and social practice; how women thought about and challenged inequality, both as individuals and in social movements. Same as GWSS:4280.

HIST:4282 Women and Power in U.S. History Since the Civil War 3 s.h.
Major events and themes in U.S. women's history from late 19th century to present; how women's experiences have differed from men's; exploration of distinct, but interconnected histories of different groups of women; changing ideals of femininity; women's experience of industrialization, immigration, depression, war, and sexual revolution; women's activism for social reform, women's rights, labor, civil rights, peace, and the New Right. Same as GWSS:4282.

HIST:4283 U.S. Women's History as the History of Human Rights 3-4 s.h.
History of human rights in the United States traced through the perspective of women; aspects of women's experience (social, political, intellectual) related to fundamental human rights—right to a nationality, right to life, liberty and personal security, right to freedom of movement, right to take part in the government of their country, right to own property; these and other rights specified by the United Nations in the Universal Declaration of Human Rights, 1948; different history of men and women enjoying these rights; how human rights have been constructed and experienced in the United States from the era of colonial settlement to present. Same as AMST:4283, GWSS:4283, HRTS:4283.

HIST:4285 Family, Gender, and Constitutional History 3 s.h.
Same as LAW:8551.

HIST:4286 U.S. Legal History 3 s.h.
History of the law in the United States, as it developed from era of the Revolution to present; interaction of courts and legislatures with social movements; readings on court decisions, social histories, fiction (film and prose).

HIST:4287 The American Legal Experience 3-4 s.h.
Historical role of law in American society and its engagement with politics, social and biological science, economics. Same as LAW:8167.

HIST:4295 African American History 1619-1865 3 s.h.
Race and African American history, from the rise of racial slavery to the Civil War; advanced course. Same as AFAM:4195.

HIST:4296 African American History 1865-Present 3 s.h.
African American history since Reconstruction; survey of African American politics and society from Reconstruction to present. Same as AFAM:4298.

European History, Lower-Level Undergraduate

HIST:2420 Germany in the World 3-4 s.h.

HIST:2465 Europe Since 1945 3 s.h.
Europe since World War II: recovery, cold war, social and economic change, global perspectives.

HIST:2483 History of Britain: Fall of Rome to the Norman Conquest 3 s.h.
History of Britain from fall of Rome (after 410) and through Anglo-Saxon era, until Norman Conquest of 1066; Anglo-Saxon kings and kingdoms, church and society; poetry, historical writings, archaeology.

European History, Upper-Level Undergraduate and Graduate

HIST:3112 Medieval Philosophy 3 s.h.
Introduction to St. Thomas Aquinas, William of Ockham, and Duns Scotus, three of the most brilliant philosophers of the high middle ages (11th through 13th centuries); their writing as Christians in (fascinated) reaction to philosophical systems of their pagan predecessors; how medieval philosophers wrestled with problems concerning possibility of free will and responsibility in face of divine omniscience and foreknowledge; existence of abstract universals in a world that is nonabstract and particular; nature and existence of God; skepticism and limits of human knowledge; nature of good and evil. Same as PHIL:3112.

HIST:3405 Engineering and Technology in the Ancient Mediterranean 3 s.h.
Technologies developed and used in the ancient Mediterranean—primarily in Greece and Rome, also in Egypt and the Ancient Near East; agriculture and food preparation; construction and architecture; technologies related to warfare. Same as CLSA:3144.

HIST:3409 Medieval Civilization I 3 s.h.
Europe from the decline of Roman empire to the eleventh century; cultural, political, economic, artistic and architectural foundations of Western civilization. Same as MDVL:3409.

HIST:3410 Medieval Civilization II 3 s.h.
Europe from the eleventh century to the Italian Renaissance; cultural, political, economic, artistic, and architectural foundations of Western civilization. GE: Historical Perspectives. Same as MDVL:3410.

HIST:3436 Food in Ancient Mediterranean Society 3 s.h.
Practices and values influenced by consumption and production of food in ancient Mediterranean societies; varied topics, including methods of food production and distribution, hierarchies of status as associated with food, food and ethnic identity, food and health, food and religion; focus on classical Greek and Roman society, Egypt, the ancient Near East, and Persia. Recommendations: familiarity with Greek and Roman civilization and history. Same as CLSA:3836.

HIST:3451 Roman Law 3 s.h.
Case-based introduction to Roman law; principles of Roman law ranging from standards of evidence to trial procedures to various topics in civil and criminal law, including family law and the law of delict. Recommendations: some background in Roman history. Same as CLSA:3151, LAW:8825.

HIST:4400 The Roman Empire 3 s.h.
History of Roman empire from assassination of Julius Caesar through 5th century A.D.; political, economic, cultural, and social developments from the transition to imperial power to the shift of power from west to east. Same as CLSA:4400.

HIST:4401 Ancient Egypt and the Ancient Near East 3 s.h.
Same as CLSA:4101.

HIST:4403 Alexander the Great 3 s.h.
History of Alexander the Great and the generals who succeeded him in ruling the lands he conquered; military, political, and social history. Same as CLSA:4403.

HIST:4404 The World of Ancient Greece 3 s.h.
HIST:4406 Warfare in Ancient Mediterranean Society 3 s.h.
Same as CLSA:4106.

HIST:4407 The Hellenistic World and Rome 3 s.h.
Social, economic, political, intellectual history of Graeco-Roman world, from fourth century B.C.E. to Justinian's reign.

HIST:4408 The Twelfth-Century Renaissance 3 s.h.
Social, economic, intellectual, and cultural rebirth of Europe in the 12th century; Latin learning and education; developments in vernacular literature, art, architecture, new religious orders and institutions, pilgrimage and Crusade. Same as MDVL:4408.

HIST:4411 Economic and Social History of Medieval Europe 3 s.h.
Changes in western Europe from 300 to 1500 A.D.; feudalism, manorialism, revival of towns, heresy, women, monasticism, agricultural and commercial revolutions, Black Death. GE: Historical Perspectives. Same as MDVL:4411.

HIST:4412 History of the Medieval Church 3 s.h.
Development of Christianity to end of great schism; rise of Roman primacy, development of monasticism, orthodox and heterodox groups. GE: Historical Perspectives. Same as MDVL:4412.

HIST:4414 Christianity and Empire (35-450 AD) 2-3 s.h.
Introduction to major topics in history of Europe and the church; relationship between Christian message and political power as evidenced in Christian writings from Paul to St. Augustine; examination of key historical moments.

HIST:4417 Medieval Intellectual History 300-1150 3 s.h.
Philosophy, art, literature, religious culture of Europe from waning of classical intellectual modes of culture in late antiquity, to their recovery in 12th century. Same as MDVL:4417.

HIST:4418 Medieval Intellectual History 1150-1500 3 s.h.
European philosophy, religion, literature, art from 12th-century rise of scholasticism; their transformation in period of Copernicus, Luther. Same as MDVL:4418.

HIST:4419 Ancient and Medieval Science 3 s.h.
Greeks' initiation of scientific inquiry; developments in astronomy, cosmology, optics, mathematics, physics, medicine, psychology in ancient and medieval societies of Middle East, Europe. Same as MDVL:4419.

HIST:4421 The Middle Ages in Film 3 s.h.
How films that represent medieval events and literature may be analyzed to reveal the culture and times in which the films were made; Middle Ages and European nationalistic mythmaking as represented in film. Same as MDVL:4421.

HIST:4423 Ireland in the Early Middle Ages 3 s.h.
Ireland and the northern British islands 400-1000 C.E., a region of small kingdoms and thin population, lacking natural resources, far from Rome and ancient centers of Mediterranean culture; development of civilization, including monastic, legal, theological, and scholarly traditions that had a major impact on continental Europe; early medieval Irish history; introduction to the world of historical scholarship. Same as MDVL:4423.

HIST:4426 Women, Power, and Society in Medieval Europe 3 s.h.
Same as MDVL:4426.

HIST:4427 Society and Gender in Europe 1200-1789 3 s.h.
Social and gender ideologies as inscribed in patterns of authority (household, church, state); ranges of human endeavor (intellectual, psychological, biological); community organization (social, economic, legal, sexual); their influence on concept of community. Same as GWSS:4427.

HIST:4428 Nineteenth-Century Europe 3 s.h.
Political, social, economic, and cultural factors.
HIST:4431 Early Modern England  
History of England from the Wars of the Roses in the 15th century to the beginning of the 18th century; religious changes of the 16th and 17th centuries, evolution of the monarchy and other political institutions during the Tudor and Stuart dynasties and the English civil war, and the transformation of England into one of the wealthiest and most powerful nations in the world.

HIST:4433 France Under Nazi Occupation, 1940-1944  
3-4 s.h.
Political, economic, social, and cultural conditions that prevailed following the Nazi conquest of France in 1940; examination of this period of upheaval through work of prominent historians of France; representations of occupied France in literary works, documentary, and fictional films produced during the war and in the politically fraught culture of collective memorialization that formed in aftermath of this national trauma. Same as FREN:4433.

HIST:4435 War and Society in Modern Europe  
3 s.h.
Impact of war on European societies since the French Revolution.

HIST:4438 Modern European Imperialism  
3 s.h.
Introduction to the history of European imperialism since the 18th century: major shifts in the nature of European empire examined through the Haitian Revolution, India, Australia, Congo, Algeria.

HIST:4440 Artists, Intellectuals, and Politics in 20th-Century Europe  
3 s.h.
Political engagement of European artists and intellectuals from 1870 to present; cultural and intellectual history, rise of social science, artistic avant-gardes, fascist and socialist aesthetics, world war, Cold War, existentialism, feminism, anti-colonialism.

HIST:4441 Special Topics in European History  
arr.
European history topics of current interest (i.e., food, environment, climate, water use). Recommendations: advanced history major or beginning graduate student.

HIST:4445 Religious Conflict: Early-Modern Period  
3 s.h.
Reformation of 16th century—Lutheran, Calvinist, Radical, English; readings from major representatives of each. Same as RELS:4155.

HIST:4460 Twentieth-Century Europe: The Nazi Era  
3 s.h.

HIST:4461 Twentieth-Century Europe: The Cold War and After  
3 s.h.

HIST:4464 Modern France 1789-1871  
3 s.h.

HIST:4465 Modern France 1870-Present  
3 s.h.

HIST:4466 France and Algeria from Pirates to Terrorism  
3 s.h.
Long, complex history of relationship between France and Algeria since 18th century; early modern conflicts over Barbary piracy, French invasion, and colonization of Algeria in 19th century; brutal Algerian War of Independence, postcolonial migration, and ongoing war of memory over shared Franco-Algerian history of colonization and decolonization. Taught in English. Same as FREN:4466.

HIST:4470 France from 1815-Present  
3 s.h.

HIST:4473 German History 1648-1914  
3 s.h.
History of German speaking lands 1648-1918.

HIST:4475 Germany Since 1914: Weimar, Hitler, and After  
3-4 s.h.
Continuity, change in 20th-century German politics, society, culture; creation, collapse of Weimar Republic; Nazism and Third Reich; East and West Germany since 1945; unification and its discontents.

HIST:4477 Napoleon and His Afterlives  
3 s.h.
Life and influence of Napoleon Bonaparte in France; Napoleon’s personal background, his career during French Revolution, rise and fall of his European and global empire; examination of Emperor's global legacy, from post-Napoleonic diplomatic settlement to spread of Napoleonic administrative and legal codes; Napoleonic legend that arose after his final defeat in 1815; weekly readings and discussions, individual research project, and participation in events being planned across campus to mark the bicentennial of Napoleon’s invasion of Russia.

HIST:4478 Holocaust in History and Memory  
3 s.h.
Origins and implementation of Holocaust; perpetrators, victims, and bystanders; impact of Holocaust on post-World War II world.

HIST:4484 Modern Britain: The Eighteenth Century  
3 s.h.
Great Britain from Glorious Revolution of 1688 to end of the Napoleonic Wars in 1815; post-revolution political settlement, political conflict, growth of British empire, religious dissent, evangelical revival, Industrial Revolution, American Revolution, British response to the French Revolution.

HIST:4485 Modern Britain: The Nineteenth Century  
3-4 s.h.
Great Britain 1780-1914; evangelical revival, Industrial Revolution, growth of modern political parties, progress of political reform, scientific developments, influence of Darwin and Mill, growth of secularism, British Empire, Boer War, advent of World War I.

HIST:4486 Modern Britain: The Twentieth Century  
3 s.h.
Great Britain from Boer War to Tony Blair's political triumph; liberal revival, World War I, rise of the Labour Party, the Depression, appeasement, World War II, Labour's triumph after the war, rise of consensus politics, 1960s cultural changes, Margaret Thatcher's political ascendancy, transformation of the Labour Party under Blair.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIST:4493</td>
<td>Soviet Union 1917-1945</td>
<td>3-4 s.h.</td>
<td>Revolution, foundation of Soviet Union; Leninism; major political, social, ideological developments during Stalinist period—collectivization, industrialization, terror; nationalities, foreign policy; World War II; Cold War; socialist state system.</td>
</tr>
<tr>
<td>HIST:4499</td>
<td>First World War</td>
<td>3-4 s.h.</td>
<td>Social, economic, political, technological, military aspects of causes, conduct, consequences of war of 1914-1918; fiction, contemporary documents, historical works, films.</td>
</tr>
<tr>
<td>HIST:4910</td>
<td>The Book in the Middle Ages</td>
<td>3 s.h.</td>
<td>Relation of text, decoration, function, creators, and audience in different genres of medieval manuscript books 400-1500 A.D. Same as UICB:4910, SLIS:4910.</td>
</tr>
<tr>
<td>HIST:4920</td>
<td>The Transition from Manuscript to Print</td>
<td>3 s.h.</td>
<td>Western manuscripts and books 1200-1600; changes in production and distribution methods and in how texts were used, in cultural context. Same as UICB:4920, SLIS:4920.</td>
</tr>
<tr>
<td>HIST:6001</td>
<td>First-Year Graduate Colloquium</td>
<td>3 s.h.</td>
<td>Introduction to history graduate program.</td>
</tr>
<tr>
<td>HIST:6002</td>
<td>History Research Methods</td>
<td>3 s.h.</td>
<td>Introduction to historical research methods. Prerequisites: HIST:6001. Requirements: first-year history graduate standing.</td>
</tr>
<tr>
<td>HIST:6003</td>
<td>History Theory and Interpretation</td>
<td>3 s.h.</td>
<td>Introduction to basic theoretical approaches to historical research.</td>
</tr>
<tr>
<td>HIST:6110</td>
<td>Introduction to New Media in the Humanities and Social Sciences</td>
<td>arr.</td>
<td>Use of New Media software in research, presentation, and instruction; includes HTML editors (Dreamweaver), wikis (Confluence), blogs (WordPress), collaborative mark-up programs (CommentPress), graphics editors (Illustrator), map editors (MapPoint, ArcView), photographic editors (Photoshop), audio editors (Garage Band, Soundbooth, Audio Hijack Pro), video editors (iMovie, Premiere Pro, Photo-To-Movie), and animation editors (Flash); projects.</td>
</tr>
<tr>
<td>HIST:6120</td>
<td>Teaching Seminar: Graduate Instructors</td>
<td>2-3 s.h.</td>
<td>Issues and methods for effective history teaching at the college level.</td>
</tr>
<tr>
<td>HIST:6158</td>
<td>Approaches to Teaching Global History</td>
<td>arr.</td>
<td>Approaching history from a global or international perspective; introduction to issues; preparation for teaching courses at college level; historiographies and methodologies, problems of periodization and area divisions, syllabi on world and global history.</td>
</tr>
<tr>
<td>HIST:6203</td>
<td>History and Theories of Planning</td>
<td>3 s.h.</td>
<td>History of urban planning in America as a reflection of social and economic forces; alternative planning philosophies, roles, and ethical choices open to planners. Same as URP:6203.</td>
</tr>
<tr>
<td>HIST:6410</td>
<td>Teaching Proseminar</td>
<td>2-4 s.h.</td>
<td>Preparation for leading undergraduate discussion sections for HIST:2401 - HIST:2403 Western Civilization I-III; specific subject matter preparation similar to that offered in graduate readings courses; for first-time graduate teaching assistants.</td>
</tr>
<tr>
<td>HIST:7101</td>
<td>Research Seminar</td>
<td>arr.</td>
<td>Research for students in all areas of history.</td>
</tr>
<tr>
<td>HIST:7120</td>
<td>Feminist Research Seminar</td>
<td>arr.</td>
<td>Feminist research methodologies; how to conduct original research, write a research proposal and research paper, and read and criticize others' work. Same as GWSS:7020.</td>
</tr>
<tr>
<td>HIST:7126</td>
<td>Readings on the History of Human Rights</td>
<td>arr.</td>
<td>Survey of recent literature on history of human rights; development of bibliographies; readings from individual areas of interest (e.g., transitional justice, migration, gender and sexuality, labor).</td>
</tr>
<tr>
<td>HIST:7150</td>
<td>Readings: Comparative Labor History</td>
<td>arr.</td>
<td>Vexed notion of diaspora(s); challenge of understanding and writing histories of immigration and migration during modern era; exploration of central questions including difficulty of tracking things in motion—individuals, families, groups, and ever-elusive cultural traits as they flow through local, national, and international contexts that are themselves in flux.</td>
</tr>
<tr>
<td>HIST:7160</td>
<td>Global Medical History: Colonial South Asia, Latin America, and the Caribbean</td>
<td>arr.</td>
<td>How relations of power between countries affect responses to disease, delivery of public health, and development of medical understanding; focus on South Asia, Latin America, and the Caribbean; global perspectives; medical colonial interactions, environmental issues and tropical medicine, indigenous systems of health; translation, co-optation, and appropriation of medical knowledge; biomedicine and nationalism.</td>
</tr>
</tbody>
</table>
HIST:7175 Theories of World History
Macrohistorical theories of world history; can a prominent theory or combination of theories explain the social evolution of humankind over hundreds of thousands of years; how to periodize world history; does history have a direction, and if so, what direction; the future of humankind.

HIST:7190 Individual Study: Graduate
Preparing for dissertation work for students in all areas of history; thesis topic, relevant literature in the topic field, potential sources, primary research strategy, sources of research funding, research proposal; preparation for submitting applications for dissertation research fellowships and beginning of completing the thesis prospectus.

HIST:7193 Thesis

HIST:7197 The Art and Craft of Historical Writing
Focus on improving students' skills in historical writing; readings from exemplary texts, ancient to contemporary; all aspects of historical writing, from sentence composition and paragraph structure to evidence and narrative voice.

HIST:7199 History Workshop: Theory and Interpretation

HIST:7205 Gender and Race in Nineteenth-Century U.S.
Same as AFAM:7205, GWSS:7205.

HIST:7208 The American Civil War in History and Memory

HIST:7212 Seminar: Research in Race and Ethnicity

HIST:7214 Readings: African American Women's History
Same as AFAM:7214, GWSS:7214.

HIST:7215 Seminar: History of Disability

HIST:7219 Seminar: Gender in Nineteenth-Century United States

HIST:7220 Readings: History of Sexuality
History of sexuality within the family, its move into the marketplace; social customs and taboos, methods of birth control and abortion, religion, medical and psychological writings, state policies. Same as GWSS:7220.

HIST:7227 Readings in American Environmental History
Introduction to historiography—classic texts and recent work—in American environmental history; topics from colonial period to recent past.

HIST:7236 Readings in Borderlands History
Comparative borderlands; articles on diverse topics from borderland regions worldwide (main focus on U.S.-Mexico borderlands, with inclusion of European, Asian, African, and Latin American borderlands); analysis of each article for its thesis, research questions, methodology, primary sources, and weaknesses; seminar.

HIST:7241 Readings in U.S. Social Policy
History and historiography of social welfare policy, chiefly in the United States; proceeds chronologically with analysis of private and public efforts to address problems including poverty, unemployment, sickness, homelessness, and family violence.

HIST:7246 United States in the World
Historiographies that situate modern U.S. history in a global context; how historians study the American past beyond traditional, nation-centered frames; transnational histories of migration, nativism and exclusion; social movements; colonial empire-building; commercial and cultural Americanization; transfer of policy ideas; military occupations; decolonization; Cold War's impact on social reform; post-9/11 moment.

HIST:7251 Seminar: Social History of the American Working Class

HIST:7253 Seminar: American Social History

HIST:7254 Readings in American Social History

HIST:7255 Readings: The Gilded Age and the Progressive Era

HIST:7256 Topics in 19th-Century American Legal History
Exploration of selected focus topics, may include developments in the law of the home and the law of the workplace (free labor, worker immigration, apprenticeship, indentured labor, slavery); women's legal history; land issues and various Homestead Acts; Blackstone in America; Reconstruction of the Constitution after the Civil War; The National Archives—which houses American legal historical documents—displays the phrase, "What is past is prologue:" legal history that explains how we got to the legal present and to understand what is the law, you have to know how something got to be the law. Same as LAW:9656.

HIST:7260 Seminar: American Colonial History

HIST:7261 Readings: Early American History

HIST:7263 Readings: Contemporary United States
New work in American social, political, and economic history; readings tailored for students seeking background for research or preparing for comprehensive exams.

HIST:7265 Seminar: Contemporary United States
HIST:7271 Seminar: Research in Transnational U.S. History
Experience framing, organizing, and carrying out an original investigation on a theme in U.S. transnational history, followed by review and discussion of drafts; opportunity to explore transnational methodologies while developing professional skills of literature review, source interpretation, and collegial critique.

HIST:7275 Readings in the History of Women and Gender in the U.S.A.
Same as GWSS:7275.

HIST:7287 Seminar: History of Women and Gender
Opportunity to pursue research for a single paper, M.A. thesis, or doctoral dissertation in the history of women and gender in the United States; interdisciplinary and internationally comparative projects; meetings and evaluations with attention to the craft of writing.

HIST:7293 Graduate Readings in Public History
Overview of public history with attention to ways in which historians have engaged various publics; major theoretical constructs (memory, heritage, commemoration); public history methodologies (oral history, material culture, archival documentation); legal ethics; how history is communicated to the public; how public history sites contribute to public memory; how and why controversies emerge in public history settings; relationship between academic history and public history.

HIST:7410 Seminar: Medieval Social and Economic History

HIST:7411 Readings: Medieval Women arr.

HIST:7412 Source Criticism for Medieval Studies arr.

HIST:7415 Graduate Readings: Monastic History
History of Christian monasticism in the medieval west; the developing monastic and religious orders, nuns of those groups; tertiaries, beguines, other orthodox penitent movements from the development of Christianity to the Reformation.

HIST:7418 Seminar: Medieval Intellectual History

HIST:7419 Readings: Medieval Intellectual History arr.

HIST:7420 Seminar: History of Science arr.

HIST:7421 Readings: Medieval and Early Modern Universities arr.

HIST:7422 Medieval Latin Paleography arr.

HIST:7428 Seminar: Medieval Philosophy
Investigation of theories of knowledge developed by medieval philosophers including Augustine, Boethius, Duns Scotus, Ockham, and Auriol.

HIST:7435 Readings: Women, Men, and Gender in Modern Europe
Same as GWSS:7435.

HIST:7440 Readings in Modern German History
Major problems in modern German history; historiographic debates organized thematically and proceeds chronologically from the French Revolution to the present; oral presentations and comparative essays.

HIST:7445 Readings: Colonialism and Empire in European History
3-4 s.h.
Engagement of Europeans in an immense outward expansion of people, goods, and ideas, as well as more than a few germs since 1492; exploration of some of the implications of this expansion by focusing on a selection of different colonial encounters and some legacies of European empires.

HIST:7455 Seminar: Modern Europe arr.

HIST:7456 Readings: Modern European History arr.

HIST:7458 Readings: War and Society in Modern Europe
Preparation, conduct, and aftermath of war; social-historical examination; conflicts on European territory, colonial wars, and wars of decolonization, from French Revolution through late 20th century.

HIST:7460 Readings in the History of Modern France arr.

HIST:7505 Readings: Latin American History
Same as SPAN:7505.

HIST:7535 Readings in Latina/o History arr.
Introduction to major works and recent scholarship in Latina/Latino history.

HIST:7551 Readings: Globalizing Latin American Science and Medicine
Recent trends in Latin American history of science and medicine.

HIST:7589 Readings: Gender in Latin American History
Same as GWSS:7289.

HIST:7606 Readings in Chinese History
Same as ASIA:7606.

HIST:7622 Readings in Modern Korean History
Introduction to English-language scholarly works on modern Korean history; focus on nationalist discourse, social and cultural history, and complex interactions among Koreans and Japanese within space of empire; major historiographical issues in Korean and East Asian history.

HIST:7630 Readings: Japanese History
Same as JPN:7630.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Arrangement</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIST:7660</td>
<td>Readings in Modern India</td>
<td>arr.</td>
</tr>
<tr>
<td>HIST:7691</td>
<td>Topics in East Asian History</td>
<td>arr.</td>
</tr>
<tr>
<td></td>
<td>Introduction to major works and recent scholarship on border-crossing topics in East Asian history, including transnational/regional exchange, empire, frontiers/borderlands, migration, ethnicity, and historiography.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Themes in African precolonial and modern history.</td>
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</tr>
<tr>
<td>HIST:7706</td>
<td>Readings in African History</td>
<td>arr.</td>
</tr>
<tr>
<td></td>
<td>Interpretations and methods applied by historians in various world regions to different forms of oral history, from old oral traditions to contemporary autobiographical testimony. Same as AFAM:7710.</td>
<td></td>
</tr>
<tr>
<td>HIST:7805</td>
<td>Readings in Middle East History</td>
<td>arr.</td>
</tr>
</tbody>
</table>
The Interdepartmental Studies Program (ISP) provides an alternative to traditional undergraduate majors. It gives students the opportunity to design an individualized plan of study or to choose a preapproved plan in applied human services, business studies, or health science. Each track includes course work from a variety of departments.

Since the major in interdepartmental studies affords opportunities outside the traditional degree pattern, students must create or choose study programs that meet their individual educational and career objectives. Those who plan to seek employment immediately after graduation should familiarize themselves with the educational background and qualifications required by employers and should include appropriate courses in their study programs.

Students preparing for advanced study should become familiar with the admissions requirements of graduate or professional schools that interest them. The earlier students decide to pursue graduate or professional study, the easier it is to complete necessary prerequisites.

The Interdepartmental Studies Program is one of the academic units in the Division of Interdisciplinary Programs (p. 226).

**Undergraduate Program of Study**

- Major in interdepartmental studies (Bachelor of Arts)

**Bachelor of Arts**

The Bachelor of Arts with a major in interdepartmental studies requires a minimum of 120 s.h., including at least 36-41 s.h. of work for the major (total semester hours required depends on the track). Students must maintain a g.p.a. of at least 2.00 in all courses for the major and in all UI courses for the major. They also must complete the College of Liberal Arts and Sciences General Education Program (p. 313).

Students choose one of five tracks for the major: applied human services, business studies, engaged social innovation, health science, or an individualized plan of study. The engaged social innovation and the individualized plan of study tracks are selective; students must apply and be admitted to these tracks before they may declare them. The other three tracks are open; students may declare them without an application.

Students who choose the individualized plan of study track design their own major. Those admitted to the engaged social innovation track complete a common core, plan and complete an internship, and design their remaining course work to support the internship. Students who choose the applied human services track, business studies track, or health science track follow a preapproved study plan, which includes foundation courses and a selection of emphasis areas. The applied human services track offers three emphasis areas: aging services, community-based services, and corrections services. The business studies track offers three emphasis areas: workplace practices and perspectives, values and ethics, and arts management. The health science track offers six emphasis areas: multidisciplinary science, entrepreneurial, aging, global health, cultures of healing, and writing for the sciences.

Interdepartmental studies students who earn a second major may count a maximum of two courses from the second major toward the interdepartmental studies major. This policy applies no matter what degree is earned with the second major (Bachelor of Arts, Bachelor of Science, and so forth).

Students majoring in interdepartmental studies who earn minors in other departments or programs may not count courses from the minors toward the interdepartmental studies major.

The major in interdepartmental studies requires the following course work.

**Applied Human Services Track**

The applied human services track requires 40-41 s.h. of work for the major. It provides a preapproved plan of study that combines a generalized psychology background with a choice of three emphasis areas: aging services, community-based services, and corrections services. Students who choose this track also have the option of proposing their own human services-related emphasis area to the faculty advisory committee.

Applied human services track students must complete foundation course work (28-29 s.h.) and one emphasis area (12 s.h.). They must complete a minimum of 15 s.h. of work for the major at the University of Iowa. The Academic Advising Center advises applied human services track students; contact the center for more information about requirements.

**FOUNDATION COURSES**

Psychology core—both of these:

- PSY:1001 Elementary Psychology 3 s.h.
- PSY:2810 Research Methods in Psychology 4 s.h.

Statistics core—this course:

- STAT:1020 Elementary Statistics and Inference 3 s.h.

Human relations core—both of these:

- RCE:4195 Ethics in Human Relations and Counseling 3 s.h.
- RCE:4199 Counseling for Related Professions 3 s.h.

Human relations core—one of these:

- CCCC:2220 Foundations of Critical Cultural Competence 3 s.h.
- RCE:4197 Citizenship in a Multicultural Society 3 s.h.

Psychology electives—three of these:
PSY:2301 Introduction to Clinical Psychology 3 s.h.
PSY:2401 Introduction to Developmental Science 3 s.h.
PSY:2501 Introduction to Social Psychology 3 s.h.
PSY:2601 Introduction to Cognitive Psychology 3 s.h.
PSY:2701 Biological Psychology 4 s.h.

AGING SERVICES EMPHASIS
Students must earn 12 s.h. in their chosen emphasis area. Students who choose the aging services emphasis must complete the foundation component (3 s.h.), the elective component (9 s.h.), and the internship (0 s.h.).

Foundation Component
ASP:1800/SSW:1800/NURS:1800/TR:1800 3 s.h.
Basic Aspects of Aging

Elective Component
Students complete 9 s.h. of electives from the following.
ASP:2181 The Anthropology of Aging 3 s.h.
ASP:3135/SSW:3135/GHS:3050 Global Aging 3 s.h.
ASP:3150 Psychology of Aging 3 s.h.
ASP:3151 The Anthropology of the Beginnings and Ends of Life 3 s.h.
ASP:3152 Anthropology of Caregiving and Health 3 s.h.
ASP:3160 Biology of Aging 3 s.h.
ASP:3501/SSW:3501 Introduction to Nursing Homes 3 s.h.
ASP:3610 Writing in the Presence of Death: Rhetoric, Narrative, and Hospice 3 s.h.
ASP:3740 End-of-Life Care for Adults and Families 2-4 s.h.
ASP:3753/SSW:3753 Programs and Services for Aging Adults 3 s.h.
ASP:3785 Social Policy and the Elderly 3 s.h.
ASP:3786/SSW:3786 Death/Dying: Issues Across the Life Span 3 s.h.
ASP:4165 Communication Disorders and Aging 2 s.h.
CW:3107/INTD:3107 Creative Writing for the Health Professions 3 s.h.
HHP:4470 Physiology of Aging 3 s.h.
INTD:4098 Independent Study arr.
PSY:2930 Abnormal Psychology: Health Professions 3 s.h.
RHET:3610/ASP:3610 Writing in the Presence of Death: Rhetoric, Narrative, and Hospice 3 s.h.

Internship
One of these:
CCP:1005 Internship in Liberal Arts and Sciences 0 s.h.
CCP:1145 Internship in Interdepartmental Studies 0 s.h.
INTD:4099 Interdepartmental Studies Practicum arr.

COMMUNITY-BASED SERVICES EMPHASIS
Students must earn 12 s.h. in their chosen emphasis area. Students who choose the community-based services emphasis complete the elective component (12 s.h.) and the internship (0 s.h.).

Elective Component
Students complete 12 s.h. of electives from the following.
INTD:4098 Independent Study arr.
PSQF:1027 Mindfulness Foundations in the Helping Professions 3 s.h.
PSY:2930 Abnormal Psychology: Health Professions 3 s.h.
RCE:4130 Human Sexuality 3 s.h.
RCE:4132 Introduction to Addictions and Impulse Control Disorders 3 s.h.
RCE:4140 Foundations of Leadership for Community Agencies 3 s.h.
RCE:4145 Marriage and Family Interaction 3 s.h.
RCE:4162 Introduction to Couple and Family Therapy 3 s.h.
RCE:4173 Trauma Across the Lifespan 3 s.h.
RCE:4174 Positive Psychology 3 s.h.
RCE:4175 Motivational Interviewing 3 s.h.
RCE:4177 Life After Service: Veterans in College 3 s.h.
RCE:4178 Microcounseling 1-3 s.h.
RCE:4179 Sexuality Within the Helping Professions 3 s.h.
RCE:4185 Introduction to Substance Abuse 3 s.h.
RCE:4187/EDTL:4987 Introduction to Assistive Technology 3 s.h.
RCE:4190 Group Processes for Related Professions 3 s.h.
RCE:4191 Advocacy: Awareness, Assertiveness, and Activism arr.
RCE:4192 Group Leadership in Human Sexuality 0-3 s.h.
RCE:4193 Individual Instruction—Undergraduate 0-3 s.h.
RCE:4194 Interpersonal Effectiveness 3 s.h.
SSW:3712 Human Sexuality, Diversity, and Society 1-3 s.h.
SSW:3729 Substance Use and Abuse 3 s.h.

Internship
One of these:
CCP:1005 Internship in Liberal Arts and Sciences 0 s.h.
CCP:1145 Internship in Interdepartmental Studies 0 s.h.
INTD:4099 Interdepartmental Studies Practicum arr.

CORRECTIONS SERVICES EMPHASIS
Students must earn 12 s.h. from their chosen emphasis area. Students who chose the corrections services emphasis must complete the foundation component (3-4 s.h.), the elective component (9 s.h.), and the internship (0 s.h.). The elective component must include 6 s.h. earned in courses numbered 3000 or above.

Foundation Component
One of these:
Elective Component

Students complete 9 s.h. of electives from the following lists of lower-level and advanced courses, with a minimum of 6 s.h. from the advanced courses list.

Lower-level courses—maximum of 3 s.h. from these:
- ANTH:1003 Anthropology of Violence 3 s.h.
- ANTH:1101 Cultural Anthropology 3 s.h.
- ANTH:1305 Forensic Anthropology and CSI 3 s.h.
- ANTH:2100 Anthropology and Contemporary World Problems 3 s.h.
- MGMT:2000 Introduction to Law 3 s.h.
- PSY:2930 Abnormal Psychology: Health Professions 3 s.h.
- SOC:1410 Introduction to Criminology 3 s.h.
- SOC:1420 Law and Society 3 s.h.
- SOC:2325 Women, Crime, and Justice 3 s.h.
- SOC:2426 Deviance and Control Systems 3 s.h.
- SOC:2430 Comparative Criminal Justice 3 s.h.
- SOC:2810 Social Inequality 3 s.h.

Advanced courses—at least 6 s.h. from these:
- ANTH:3101/GWSS:3101 Anthropology of Sexuality 3 s.h.
- GWSS:3005 Gender, Women's, and Sexuality Studies Practicum 3-4 s.h.
- INTD:4098 Independent Study arr.
- RCE:4176 Child Abuse: Assessment, Intervention, and Advocacy 3 s.h.
- SOC:3220 Sociology of Mental Illness 3 s.h.
- SOC:3420 Juvenile Delinquency 3 s.h.
- SOC:3437 American Crime 3 s.h.
- SOC:3450 Criminal Legal System 3 s.h.
- SOC:4400 Internship in Criminal Justice and Corrections 1-5 s.h.
- SOC:4420 Criminal Punishment 3 s.h.
- SOC:4430 Interpersonal Violence in Society 3 s.h.
- SOC:4440 Sociology of White-Collar Crime 3 s.h.
- SOC:4450 Juvenile Justice: A Sociological Perspective 3 s.h.
- SOC:4460 Sociology of Law 3 s.h.
- SOC:4461/GWSS:4461 Gender and Violence 3 s.h.
- SSW:3796 Family Violence 2-3 s.h.

Business Studies Track

The business studies track requires a minimum of 37 s.h. of work for the major. It provides a preapproved plan of study that combines a generalized business background with a choice of three emphasis areas: workplace practices and perspectives, values and ethics, and arts management. Students who choose this track also have the option of proposing their own business-related emphasis area to the faculty advisory committee.

Business studies track students must complete foundation course work (at least 17 s.h.), business electives (at least 5 s.h.), and one emphasis area (15 s.h.). They must complete a minimum of 15 s.h. of work for the major at the University of Iowa. The Academic Advising Center advises business studies track students; contact the center for more information about requirements.

**FOUNDATION COURSES**

Foundational math—one of these:
- MATH:1020 Elementary Functions 4 s.h.
- MATH:1340 Mathematics for Business 4 s.h.
- MATH:1380 Calculus and Matrix Algebra for Business 4 s.h.
- MATH:1440 Mathematics for the Biological Sciences 4 s.h.
- MATH:1460 Calculus for the Biological Sciences 4 s.h.
- MATH:1550 Engineering Mathematics I: Single Variable Calculus 4 s.h.
- MATH:1850 Calculus I 4 s.h.

Foundational statistics—one of these:
- STAT:1020/PSQF:1020 Elementary Statistics and Inference 3 s.h.
- STAT:1030 Statistics for Business 4 s.h.
- STAT:2020 Probability and Statistics for the Engineering and Physical Sciences 3 s.h.
- STAT:3510 Biostatistics 3 s.h.
- STAT:4143 Introduction to Statistical Methods 3 s.h.

Foundational economics—both of these:
- ECON:1100 Principles of Microeconomics 4 s.h.
- ECON:1200 Principles of Macroeconomics 4 s.h.

Foundational accounting—one of these:
- ACCT:2100 Introduction to Financial Accounting 3 s.h.
- ENTR:1350 Foundations in Entrepreneurship (if not used as business elective) 2 s.h.

May include one of these:
- ACCT:2200 Managerial Accounting 3 s.h.
- ECON:2800 Statistics for Strategy Problems 3 s.h.
- FIN:3000 Introductory Financial Management 3 s.h.
- MGMT:2000 Introduction to Law 3 s.h.
- MGMT:2100 Introduction to Management 3 s.h.
- MSCI:3000 Operations Management 3 s.h.

May include one of these:
- ENTR:1350 Foundations in Entrepreneurship (if not used for foundational accounting requirement) 2 s.h.
- MKTG:3000 Introduction to Marketing Strategy 3 s.h.

**BUSINESS ELECTIVES**

Students complete two electives from the following lists.

- ACCT:2200 Managerial Accounting 3 s.h.
- ECON:2800 Statistics for Strategy Problems 3 s.h.
- FIN:3000 Introductory Financial Management 3 s.h.
- MGMT:2000 Introduction to Law 3 s.h.
- MGMT:2100 Introduction to Management 3 s.h.
- MSCI:3000 Operations Management 3 s.h.

May include one of these:
- ENTR:1350 Foundations in Entrepreneurship 2 s.h.
- MKTG:3000 Introduction to Marketing Strategy 3 s.h.

May include one of these:
CS:1020 Principles of Computing 3 s.h.
MSCI:1500 Business Computing Essentials 2 s.h.

WORKPLACE PRACTICES AND PERSPECTIVES EMPHASIS

Students must earn 15 s.h. in their chosen emphasis area. Students who choose the workplace practices and perspectives emphasis must complete at least one course from each of four components (speaking and writing, foundations and practices, cultural diversity, and entrepreneurship). The required 15 s.h. must include 9 s.h. earned in advanced courses. Advanced courses for each component are listed below.

Speaking and Writing Component
At least one course from these or from the advanced courses:
CNW:1620 Introduction to Creative Nonfiction 3 s.h.
CNW:2680 The Art and Craft of Creative Nonfiction 3 s.h.
COMM:1112 Interpersonal Communication 3 s.h.
COMM:1117 Theory and Practice of Argument 4 s.h.
COMM:1130 The Art of Persuading Others 3 s.h.
COMM:1814 Elements of Debate 3 s.h.
COMM:1816 Business and Professional Communication 3 s.h.
COMM:2821 Oral Interpretation 3 s.h.
CW:1800 Creative Writing Studio Workshop 3 s.h.
CW:2100 Creative Writing 3 s.h.
CW:2870 Fiction Writing 3 s.h.
LING:1030 English Words 3 s.h.
RHET:2065 Persuading Different Audiences 3 s.h.
RHET:2085 Speaking Skills 3 s.h.
Advanced courses:
INTD:3005 Professional and Creative Business Communication 3 s.h.
BUS:3800 Business Writing 3 s.h.
CLSA:3742 Word Power: Building English Vocabulary 3 s.h.
CNW:3600 Issues in Creative Nonfiction 3 s.h.
CNW:3632 Prose Style 3 s.h.
CNW:3630 Advanced Nonfiction Writing 3 s.h.
CNW:3633 Personal Writing 3 s.h.
CNW:3640 Writing for Business and Industry 3 s.h.
CNW:4642 Team Writing for Business 3 s.h.
CW:3210/INTD:3210 Creative Writing and the Natural World 3 s.h.
CW:3215/INTD:3300 Creative Writing and Popular Culture 3 s.h.
CW:4745 The Sentence: Strategies for Writing 3 s.h.
CW:4760 The Art of Revision: Rewriting Prose for Clarity and Impact 3 s.h.
CW:3218/INTD:3200 Creative Writing for New Media 3 s.h.
ENNM:3633 Personal Writing for Non-English Majors 3 s.h.
GWSS:3138 Writing to Change the World 3 s.h.
ENNM:3640 Writing for Business and Industry for Non-English Majors 3 s.h.
INTM:3755 What is Storytelling For? 4 s.h.
LING:3001 Introduction to Linguistics 3 s.h.
RHET:3085 Advanced Speaking Skills 3 s.h.

Foundations and Practices Component
At least one course from these or from the advanced courses:
ANTH:1401 Language, Culture, and Communication 3 s.h.
COMM:1301 Core Concepts in Communication Studies 3 s.h.
COMM:1818 Leadership and Organizational Procedures 2 s.h.
COMM:1819 Organizational Leadership 2-3 s.h.
JMC:1100 Media Uses and Effects 3 s.h.
JMC:1200 Media History and Culture 3 s.h.
JMC:1500 Social Media Today 3 s.h.
JMC:2200 Communication and Public Relations 3 s.h.
Advanced courses:
COMM:1170 Communication Theory in Everyday Life 3 s.h.
COMM:1174 Media and Society 3 s.h.
ENGL:3182 Digital Cultures and Literacies 3 s.h.
JMC:3125 Media and Consumers 3 s.h.

Cultural Diversity Component
At least one course from these or from the advanced courses:
AFAM:1020/AMST:1030 Introduction to African American Culture 3 s.h.
AFAM:1030 Introduction to African American Society 3 s.h.
AFAM:1250/RELS:1350 Introduction to African American Religions 3 s.h.
AFAM:2070 Black TV Drama: The Wire 3 s.h.
AINS:1049/AMST:1049 Introduction to American Indian and Native Studies 3 s.h.
AMST:1010 Understanding American Cultures 3 s.h.
ANTH:2165/AINS:2165/AMST:2165 Native Peoples of North America 3 s.h.
ENGL:1350 Literature and Sexualities 3 s.h.
ENGL:1355/AINS:1355 Literatures of Native American Peoples 3 s.h.
ENGL:2460 Black Literature and Politics: Controversies of National Allegiance 3 s.h.
GWSS:1001 Introduction to Gender, Women's, and Sexuality Studies 3 s.h.
GWSS:1002 Diversity and Power in the U.S. 3 s.h.
HIST:1040 Perspectives: Diversity in American History 3 s.h.
HIST:2265/AFAM:2265 Introduction to African American History 3 s.h.
HIST:2280 Introduction to Latina/o Studies 3 s.h.
LING:2900 Language and Gender 3 s.h.
MUS:1009 Jazz Cultures in America and Abroad 3 s.h.
MUS:1720 History of Jazz 3 s.h.
MUS:2014 Giants of Jazz: Miles, Trane, and Duke 3 s.h.
RELS:1350 Introduction to African American Religions 3 s.h.
RELS:1810 Longing for Freedom 3 s.h.
RELS:2700/AINS:2700 Sacred World of Native Americans 3 s.h.
SOC:1310/GWSS:1310 Gender and Society 3-4 s.h.
SOC:2810 Social Inequality 3 s.h.
SPAN:2700/IS:2700/LAS:2700/PORT:2700 Introduction to Latin American Studies 3 s.h.

Advanced courses:
EDTL:3933 The Culturally Different in Diverse Settings 3 s.h.
ENGL:3455 Jewish American Literature 3 s.h.
EPLS:5154 Education, Race, and Ethnicity 2-3 s.h.
HIST:4201/ASL:4201 History of the American Deaf Community 3-4 s.h.
HIST:4203 Disability in American History 3 s.h.
HIST:4216 Mexican American History 3 s.h.
JMC:3165 African Americans and the Media 3 s.h.
RELS:3745 Twentieth-Century African American Religion: Civil Rights to Hip-Hop 3 s.h.
SOC:3830 Race and Ethnicity 3 s.h.
SSW:3712/NURS:3712 Human Sexuality, Diversity, and Society 1-3 s.h.

Entrepreneurship Component
At least one of these (all are advanced courses):
INTD:4098 Independent Study arr.
INTD:4099 Interdepartmental Studies arr. Practicum
ECON:3650 Policy Analysis 3 s.h.
ENTR:2000 Entrepreneurship and Innovation 3 s.h.
ENTR:3100 Entrepreneurial Finance 3 s.h.
ENTR:3200 Entrepreneurial Marketing 3 s.h.
ENTR:3300 Legal Aspects of Entrepreneurship 3 s.h.
ENTR:3400 Strategic Management of Technology and Innovation 3 s.h.
ENTR:3500 Social Entrepreneurship 3 s.h.
ENTR:3600 E-Commerce Strategies for Entrepreneurs 3 s.h.
ENTR:4000 Seminar in Entrepreneurship 2-3 s.h.
ENTR:4200 Entrepreneurship: Business Consulting 3 s.h.
ENTR:4300 Entrepreneurship: Advanced Business Planning 3 s.h.
ENTR:4400 Managing the Growth Business 3 s.h.
ENTR:4450 Professional Sports Management 3 s.h.
ENTR:4460 Entrepreneurship and Global Trade 3 s.h.
MGMT:3600/RELS:3701/SSW:3600/NURS:3600 Nonprofit Organizational Effectiveness II 3 s.h.

VALUES AND ETHICS EMPHASIS
Students must earn 15 s.h. in their chosen emphasis area. Students who choose the values and ethics emphasis must complete at least two courses from each of the two components (values and theories, institutions and policies).

Values and Theories Component
At least two of these:
JMC:3155 Law, Media, and Current Issues 3 s.h.
JMC:3300 Media Law and Communication 3 s.h.
PHIL:1033 The Meaning of Life 3 s.h.
PHIL:1034 Liberty and the Pursuit of Happiness 3 s.h.
PHIL:2402 Introduction to Ethics 3 s.h.
PHIL:2435 Philosophy of Law 3 s.h.
POLI:1200 Introduction to Political Behavior 3 s.h.
POLI:1300 Introduction to Political Thought and Action 3 s.h.
POLI:3400 Introduction to Political Economy 3 s.h.
POLI:3417 Political Leadership 3 s.h.
POLI:3700 Strategy in Politics 3 s.h.
SOC:1420 Law and Society 3 s.h.
SOC:3520 Political Sociology 3 s.h.

Institutions and Policies Component
At least two of these:
PHIL:1401 Matters of Life and Death 3 s.h.
PHIL:2432 Introduction to Political Philosophy 3 s.h.
POLI:3101 American Constitutional Law and Politics 3 s.h.
POLI:3102 The U.S. Congress 3 s.h.
POLI:3108 American Political Development 3 s.h.
POLI:3111 American Public Policy 3 s.h.
POLI:3116 The Presidency 3 s.h.
POLI:3117 Public Administration and Bureaucratic Politics 3 s.h.
POLI:3120 The Criminal Justice System 3 s.h.
POLI:3121 The Judicial Process 3 s.h.
POLI:3202 Political Psychology 3 s.h.
SOC:1410 Introduction to Criminology 3 s.h.
SOC:2810 Social Inequality 3 s.h.
SOC:3450 Criminal Legal System 3 s.h.
SOC:3840 Community and Urban Sociology 3 s.h.

ARTS MANAGEMENT EMPHASIS
Students must earn 15 s.h. in their chosen emphasis area. Students who choose the arts management emphasis must complete two courses from the administration component, one course from the history component, 3 s.h. from the production component, 3 s.h. from the elective component, and the internship (0 s.h.).

Administration Component
Students complete two courses from the following lists.
THTR:3510/INTD:3510/DPA:3510 Introduction to Arts Management 3 s.h.

May include one of these:
ENTR:2000 Entrepreneurship and Innovation 3 s.h.
THTR:3520/ENTR:3520/INTD:3520/DPA:3520 New Ventures in the Arts 3 s.h.
History Component
Students complete one of these:

- AMST:1075 American Popular Music 3 s.h.
- ARTH:1010 Art and Visual Culture 3 s.h.
- ARTH:1020 Masterpieces: Art in Historical and Cultural Perspectives 3 s.h.
- ARTH:1030 Themes in Global Art 3 s.h.
- ARTH:1040 Arts of Africa 3 s.h.
- ARTH:1050 From Cave Paintings to Cathedrals: Survey of Western Art I 3 s.h.
- ARTH:1060 From Mona Lisa to Modernism: Survey of Western Art II 3 s.h.
- ARTH:1070/CHIN:1070 Asian Art and Culture 3 s.h.
- ARTH:1095 American Indian Art 3 s.h.
- DANC:2060/DPA:2060 Dance and Society in Global Contexts 3 s.h.
- DANC:1010 Beginning Tap 1-2 s.h.
- DANC:1020 Beginning Jazz 1-2 s.h.
- DANC:1030 Beginning Ballet 1-2 s.h.
- DANC:1040 Beginning Modern Dance 1-2 s.h.
- DANC:1050 Beginning/Contact Improvisation 1-2 s.h.
- DANC:1060 Beginning/Contact Improvisation 1-2 s.h.
- DANC:1080 Music Essentials for Dance 2 s.h.
- DANC:1090 Dance Production 3 s.h.
- DANC:1120 Continuing Jazz 1-2 s.h.
- DANC:1130 Continuing Ballet 1-2 s.h.
- DANC:1140 Continuing Modern Dance 1-2 s.h.
- DANC:2020 Intermediate Jazz 1-2 s.h.
- DANC:2030 Intermediate Ballet 1-2 s.h.
- DANC:2040 Intermediate Modern 1-2 s.h.
- DANC:3030 Major Ballet I 1-3 s.h.
- DANC:3040 Major Modern Dance I 1-3 s.h.
- DANC:3530 Major Ballet II 1-3 s.h.
- DANC:3540 Major Modern Dance II 1-3 s.h.
- DANC:3085/DPA:3085 Introduction to Afro-Cuban Dance 1 s.h.
- DANC:3086 Afro-Cuban Drum and Dance Performance 1 s.h.
- MUS:1001 Group Piano I: Non-Music Majors 1 s.h.
- MUS:1020 Performance Instruction for Nonmajors 1 s.h.
- MUS:1160 University Band 1 s.h.
- MUS:1165 Hawkeye Marching Band 1 s.h.
- MUS:1166 Large Pep Band 1 s.h.
- MUS:1176 Women's Chorale 1 s.h.
- MUS:1180 All-University String Orchestra 1 s.h.
- MUS:2020 Lower Level Voice arr.
- MUS:2021 Lower Level Piano arr.
- MUS:2022 Lower Level Organ arr.
- MUS:2023 Lower Level Violin arr.
- MUS:2024 Lower Level Viola arr.
- MUS:2025 Lower Level Cello arr.
- MUS:2026 Lower Level String Bass arr.
- MUS:2027 Lower Level Flute arr.
- MUS:2028 Lower Level Oboe arr.
- MUS:2029 Lower Level Clarinet arr.
- MUS:2030 Lower Level Bassoon arr.
- MUS:2031 Lower Level Saxophone arr.
- MUS:2032 Lower Level Horn arr.
- MUS:2033 Lower Level Trumpet arr.
- MUS:2034 Lower Level Trombone arr.
- MUS:2035 Lower Level Euphonium arr.
- MUS:2036 Lower Level Tuba arr.
- MUS:2037 Lower Level Percussion arr.
- MUS:2038 Lower Level Jazz Guitar 1 s.h.
- MUS:3154/DPA:3154 Introduction to Afro-Cuban Drumming 1 s.h.
- MUS:3160 Symphony Band/Concert Band 1 s.h.
- MUS:3163 Steel Band 1 s.h.
- MUS:3170 Kantorei 1 s.h.
- MUS:3172 Camerata Singers 1 s.h.
- MUS:3174 University Choir 1 s.h.
- MUS:3180 Orchestra 1 s.h.
- MUS:3182 Chamber Orchestra 1 s.h.
- MUS:3730 Jazz Band 1 s.h.
- DANC:1060 From Cave Paintings to Cathedrals: Survey of Western Art I 3 s.h.
- ENGL:2160 Introduction to Drama 3 s.h.
- MUS:1066 Introduction to Film Music 3 s.h.
- MUS:1302 Great Musicians 3 s.h.
- MUS:1310 World Music 3 s.h.
- MUS:1312 History of Jazz 3 s.h.
- MUS:2311 Music of Latin America and the Caribbean 3 s.h.
- MUS:3004/DPA:3004 World of the Beatles 3 s.h.
- MUSM:3120 Natural History Museums: A History 3 s.h.
- MUS:3170 Kantorei 1 s.h.
- MUS:3172 Camerata Singers 1 s.h.
- MUS:3174 University Choir 1 s.h.
- MUS:3180 Orchestra 1 s.h.
- MUS:3182 Chamber Orchestra 1 s.h.
- MUS:3730 Jazz Band 1 s.h.
- DANC:1070/CHIN:1070 Asian Art and Culture 3 s.h.
- ENGL:2160 Introduction to Drama 3 s.h.
- MUS:1010 Elements of Art 3 s.h.
- MUS:1020 Elements of 3-D Design 3 s.h.
- MUS:1030 Elements of Jewelry and Metal Arts 3 s.h.
- MUS:1040 Elements of Printmaking 3 s.h.
- MUS:1050 Elements of Digital Photography 3 s.h.
- MUS:1080 Elements of Sculpture 3 s.h.
- MUS:1510 Basic Drawing 3 s.h.
- MUS:1520 Design Fundamentals 3 s.h.
- MUS:3004/DPA:3004 World of the Beatles 3 s.h.
- MUSM:3120 Natural History Museums: A History 3 s.h.
- MUS:3140/5140 Introduction to Afro-Cuban Drumming 1 s.h.

Production Component
Students complete 3 s.h. from the following list.

- INTD:4098 Independent Study arr.
- INTD:4099 Interdepartmental Studies arr.
- ARTS:1010 Elements of Art 3 s.h.
- ARTS:1020 Elements of 3-D Design 3 s.h.
- ARTS:1030 Elements of Jewelry and Metal Arts 3 s.h.
- ARTS:1050 Elements of Printmaking 3 s.h.
- ARTS:1060 Elements of Digital Photography 3 s.h.
- ARTS:1080 Elements of Sculpture 3 s.h.
- ARTS:1510 Basic Drawing 3 s.h.
- ARTS:1520 Design Fundamentals 3 s.h.
- DANC:1010 Beginning Tap 1-2 s.h.
MUSM:3004 Exhibition Planning 3 s.h.
THTR:1010 Art of the Theatre 3 s.h.
THTR:1140 Basic Acting 3 s.h.
THTR:2200 Elements of Design 3 s.h.
THTR:2215 Theatre Technology 3 s.h.
THTR:3221 Technology for the Entertainment Industry 3 s.h.

**Elective Component**
Students complete one of these:

- ARTH:3080 Marketing, Promoting, Politicking Contemporary Public Art 3 s.h.
- ARTH:4081 The Art Museum: Theory and Practice 3 s.h.
- ARTH:4040 Art, Law, and Ethics 3 s.h.
- ARTS:3400 Grant Writing in the Arts 3 s.h.
- ENTR:3100 Entrepreneurial Finance 3 s.h.
- ENTR:3200 Entrepreneurial Marketing 3 s.h.
- INTD:3005 Professional and Creative Business Communication 3 s.h.
- JMC:3300 Media Law and Communication 3 s.h.
- MGMT:2100 Introduction to Management (if not already used to fulfill foundation course work requirement) 3 s.h.
- MGMT:3600/RELS:3701/NURS:3600/SSW:3600 Nonprofit Organizational Effectiveness II 3 s.h.
- MUSM:3001 Introduction to Museum Studies 3 s.h.
- MUSM:3200 Collection Care and Management 3 s.h.

**Internship**
One of these:

- CCP:1145 Internship in Interdepartmental Studies 0 s.h.
- INTD:4099 Interdepartmental Studies Practicum arr.

**Engaged Social Innovation Track**
The engaged social innovation track requires 37 s.h. of work for the major. The interdepartmental studies major with the engaged social innovation track is available only as a second major for qualified students. The track combines course work and experiential learning with a student-designed capstone internship. By focusing on course work with a strong hands-on component, the track encourages students to learn in multiple ways, both in and out of the classroom, and prepares them to bring social change and innovation to communities.

Admission to the engaged social innovation track is selective; students must apply and be admitted. Applicants must have a g.p.a. of 3.33 and must be members of the University of Iowa Honors Program when they apply to the track. They also must have declared a first major and must show evidence of commitment to community engagement and service. Their work for the engaged social innovation track constitutes a second major related to their other academic interests.

Engaged social innovation students complete core courses, upper-level course work, and a capstone internship preceded by a course or experience that prepares them for the internship.

**CORE COURSES**
All of these:

- ENTR:2000 Entrepreneurship and Innovation 3 s.h.
- ENTR:3500 Social Entrepreneurship 3 s.h.
- RHET:3153 Networks, Strategies, and Tactics 3 s.h.

**UPPER-LEVEL COURSE WORK**
Students select upper-level course work that reflects and supports their internship project.

Upper-level courses (numbered 3000 or above) selected by each student

**INTERNSHIP**
Students complete an internship (12 s.h.) preceded by a course or experience that prepares them for it.

One course or experience in preparation for the internship 2 s.h.

INTD:4098 Independent Study 12 s.h.

**Health Science Track**
The health science track requires 37 s.h. of work for the major. It provides a preapproved plan of study that combines a generalized health background with a varied choice of emphasis areas: multidisciplinary science, entrepreneurial, aging, global health, cultures of healing, and writing for the sciences. Students who choose this track also have the option of proposing their own health science-related emphasis area to the faculty advisory committee.

Health science track students must complete foundation course work (22 s.h.) and one emphasis area (15 s.h.). They must complete a minimum of 15 s.h. for the major at the University of Iowa. The Academic Advising Center advises health science track students; contact the center for more information about requirements.

**FOUNDATION COURSES**
Foundational chemistry—one of these:

- CHEM:1070 General Chemistry I 3 s.h.
- CHEM:1110 Principles of Chemistry I 4 s.h.

Foundational chemistry—and one of these:

- CHEM:1080 General Chemistry II 3 s.h.
- CHEM:1120 Principles of Chemistry II 4 s.h.

Foundational biology—one of these:

- BIOL:1140 Human Biology 4 s.h.
- BIOL:1141 Introductory Animal Biology 4 s.h.
- BIOL:1411 Foundations of Biology 4 s.h.

Foundational math and statistics—one of these:

- BIOS:5110 Introduction to Biostatistics 3 s.h.
- MATH:1020 Elementary Functions 4 s.h.
- MATH:1380 Calculus and Matrix Algebra for Business 4 s.h.
- MATH:1440 Mathematics for the Biological Sciences 4 s.h.
- MATH:1460 Calculus for the Biological Sciences 4 s.h.
MATH:1850 Calculus I  
STAT:1020/PSQF:1020 Elementary Statistics and Inference  
STAT:1030 Statistics for Business  
STAT:3510 Biostatistics  
STAT:4143/PSQF:4143 Introduction to Statistical Methods

Foundational social science—one of these:
  ANTH:1101 Cultural Anthropology
  ANTH:2100 Anthropology and Contemporary World Problems
  PSY:1001 Elementary Psychology
  SOC:1010 Introduction to Sociology
  SOC:1020 Social Problems

Foundational science elective—one of these:
  ACB:3110 Principles of Human Anatomy
  ACB:3113 Human Anatomy Online
  BIOL:1412 Diversity of Form and Function
  HHP:1100 Human Anatomy

Foundational elective—one of these:
  HHP:1300 Fundamentals of Human Physiology
  HHP:2310 Nutrition and Health
  HHP:3000/INTD:3020 Equity Issues in the Health Sciences
  HHP:3400 Applied Exercise Physiology
  HHP:3500 Human Physiology
  HHP:4440 Physiology of Nutrition
  NURS:1030 Human Development and Behavior
  PSY:2401 Introduction to Developmental Science
  SRM:1045 Health for Living

**MULTIDISCIPLINARY SCIENCE EMPHASIS**

Students must earn 15 s.h. in their chosen emphasis area. Students who choose the multidisciplinary science emphasis must complete 15 s.h. from the following lists.

**May include one of these:**
  CHEM:2210 Organic Chemistry I  
  CHEM:2230 Organic Chemistry I for Majors  

**May include one of these:**
  CHEM:2220 Organic Chemistry II  
  CHEM:2240 Organic Chemistry II for Majors  

**May include one of these:**
  CHEM:2410 Organic Chemistry Laboratory  
  CHEM:2420 Organic Chemistry Laboratory for Majors

**May include one of these:**
  MIRC:3112 Pharmacy Microbiology  
  MIRC:3164 Nursing Microbiology

**May include one of these:**
  HHP:2310 Nutrition and Health (if not used to fulfill foundation requirement)
  HHP:4440 Physiology of Nutrition (if not used to fulfill foundation requirement)

**May include one of these:**
  PHYS:1511 College Physics I
  PHYS:1611 Introductory Physics I

**May include one of these:**
  PHYS:1512 College Physics II
  PHYS:1612 Introductory Physics II

**ENTREPRENEURIAL EMPHASIS**

Students must earn 15 s.h. in their chosen emphasis area. Students who choose the entrepreneurial emphasis must complete 15 s.h. from the following lists.

**May include one of these:**
  ACCT:2100 Introduction to Financial Accounting
  BUS:3800 Business Writing
  CNW:3640 Writing for Business and Industry
  ECON:3650 Policy Analysis
  ECON:3760 Health Economics
  ENTR:1350 Foundations in Entrepreneurship
  ENTR:2000 Entrepreneurship and Innovation
  ENTR:3100 Entrepreneurial Finance
  ENTR:3200 Entrepreneurial Marketing
  ENTR:3300 Legal Aspects of Entrepreneurship
  ENTR:3400 Strategic Management of Technology and Innovation
  ENTR:3500 Social Entrepreneurship
  ENTR:3520 New Ventures in the Arts
  ENTR:3600 E-Commerce Strategies for Entrepreneurs
  ENTR:4000 Seminar in Entrepreneurship
  ENTR:4200 Entrepreneurship: Business Consulting
  ENTR:4300 Entrepreneurship: Advanced Business Planning
  ENTR:4400 Managing the Growth Business
  ENTR:4450 Professional Sports Management
  ENTR:4460 Entrepreneurship and Global Trade
INTERDEPARTMENTAL STUDIES

**ENTR:4510 Arts Leadership Seminar** 3 s.h.
**MGMT:2100 Introduction to Management** 3 s.h.
**MGMT:3600/RELS:3701/SSW:3600/NURS:3600 Nonprofit Organizational Effectiveness II** 3 s.h.
**MKTG:3000 Introduction to Marketing Strategy** 3 s.h.

May include one of these:
**INTD:4098 Independent Study** arr.
**INTD:4099 Interdepartmental Studies Practicum** arr.

**AGING EMPHASIS**
Students must earn 15 s.h. in their chosen emphasis area. Students who choose the aging emphasis must complete 15 s.h. from the following lists.

**ASP:1800/SSW:1800/NURS:1800/TR:1800 Basic Aspects of Aging** 3 s.h.
**ASP:2181 The Anthropology of Aging** 3 s.h.
**ASP:3135/SSW:3135/GHS:3050 Global Aging** 3 s.h.
**ASP:3150 Psychology of Aging** 3 s.h.
**ASP:3151 The Anthropology of the Beginnings and Ends of Life** 3 s.h.
**ASP:3152 Anthropology of Caregiving and Health** 3 s.h.
**ASP:3160 Biology of Aging** 3 s.h.
**ASP:3501/SSW:3501 Introduction to Nursing Homes** 3 s.h.
**ASP:3753/SSW:3753 Programs and Services for Aging Adults** 3 s.h.
**ASP:3786/SSW:3786 Death/Dying: Issues Across the Life Span** 3 s.h.
**ASP:5750 Medicare and Medicaid Policy** 3 s.h.
**CW:3107/INTD:3107 Creative Writing for the Health Professions** 3 s.h.
**RHET:3610/ASP:3610 Writing in the Presence of Death: Rhetoric, Narrative, and Hospice** 3 s.h.

May include one of these:
**INTD:4098 Independent Study** arr.
**INTD:4099 Interdepartmental Studies Practicum** arr.

**GLOBAL HEALTH EMPHASIS**
Students must earn 15 s.h. in their chosen emphasis area. Students who choose the global health emphasis must complete 15 s.h. from the following lists.

**ANTH:1046 People and the Environment: Technology, Culture, and Social Justice** 3 s.h.
**GHS:1181 Ancient Medicine** 3 s.h.
**GHS:2150 Natural Environmental Systems** 3 s.h.
**GHS:2164 Culture and Healing for Future Health Professionals** 3 s.h.
**GHS:2181 The Anthropology of Aging** 3 s.h.
**GHS:2320 Anthropological Perspectives on Human Infectious Disease: Origins and Evolution** 3 s.h.
**GHS:3010 Identifying and Developing a Global Health Project (only one enrollment may count toward major)** 2-3 s.h.
**GHS:3030 Global Health Conference (only one enrollment may count toward major)** 1 s.h.
**GHS:3040 Health in Mexico** 3 s.h.
**GHS:3050 Global Aging** 3 s.h.
**GHS:3060 Studies in Complementary and Alternative Medicine** 3 s.h.
**GHS:3070 Hungry Planet: Global Geographies of Food** 3 s.h.
**GHS:3102/ANTH:3102/CBH:3102 Medical Anthropology** 3 s.h.
**GHS:3110/ANTH:3110/AINS:3110 Health of Indigenous Peoples** 3 s.h.
**GHS:3113 Religion and Healing** 3 s.h.
**GHS:3131/SLAV:3131 Health Care and Health Reforms in Russia** 3 s.h.
**GHS:3141 Design With the Developing World** 3 s.h.
**GHS:3150 Media and Health** 3 s.h.
**GHS:3151 The Anthropology of the Beginnings and Ends of Life** 3 s.h.
**GHS:3152 Anthropology of Caregiving and Health** 3 s.h.
**GHS:3191 Sustainable Development: India and the Global Context** 3 s.h.
**GHS:3192 Environment and Health in Modern India** 3 s.h.
**GHS:3326 Infectious Disease and Human Evolution** 3 s.h.
**GHS:3555 Understanding Health and Disease in Africa** 3 s.h.
**GHS:3720 Global Health Seminar (only one enrollment may count toward major)** 3 s.h.
**GHS:3760 Hazards and Society** 3 s.h.
**GHS:3780 U.S. Energy Policy in Global Context** 3 s.h.
**GHS:3850/HHP:3850 Promoting Health Globally** 3 s.h.
**GHS:4100 Topics in Global Health** 1-3 s.h.
**GHS:4111/GEOG:3110 Geography of Health** 3 s.h.
**GHS:4126 International Perspectives: Xicotepec** 2-3 s.h.
**GHS:4150 Health and Environment: GIS Applications** 3 s.h.
**GHS:4160/HIST:4160 History of Public Health** 3 s.h.
**GHS:4162/HIST:4162 History of Global Health** 3 s.h.
**GHS:4210 International Health** 3 s.h.
**GHS:4220 U.S. and Global Environmental Health Policy** 3 s.h.
**GHS:4230 Health Experience of Immigrants, Migrants, and Refugees** 3 s.h.
**GHS:4340/HHP:4340 Global Health and Global Food** 3 s.h.
**GHS:4508 Medicine and Public Health in Latin America, 1820-2000** 3 s.h.
**GHS:4600 Global Health and Human Rights** 2-3 s.h.
**GHS:4605 Disease, Politics, and Health in South Asia** 2-4 s.h.
**GHS:4990 Special Projects in Global Health (only one enrollment may count toward major)** arr.
**HHP:3020/INTD:3027** Nutrition for Health, Fitness, and Sport 3 s.h.

May include one of these:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTD:4098 Independent Study (only 3 s.h. may count toward major)</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>INTD:4099 Interdepartmental Studies Practicum (only 3 s.h. may count toward major)</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

**CULTURES OF HEALING EMPHASIS**

Students must earn 15 s.h. in their chosen emphasis area. Students who choose the cultures of healing emphasis must complete the foundation component (3 s.h.) and the elective component (12 s.h.). The elective component must include 6 s.h. earned in advanced courses.

**Foundation Component**

One of these:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CLSA:1181/GHS:1181 Ancient Medicine</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>CLSA:4181 History of Western Medicine</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

**Elective Component**

Students complete 12 s.h. of electives from the following lists of lower-level and advanced courses, with a minimum of 6 s.h. from the advanced courses list.

**Lower-level courses**—maximum of 6 s.h. from these:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>RELS:2700/AINS:2700 Sacred World of Native Americans</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>RELS:2771/GWSS:2771 Sexual Ethics</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>RELS:2778/AINS:2078 American Indian Women: Myth, Ritual, and Sacred Power</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>RELS:3976/AINS:3276 American Indian Environmentalism</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

Lower-level courses may include one of these:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH:1101 Cultural Anthropology</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ANTH:2100 Anthropology and Contemporary World Problems</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

Advanced courses—at least 6 s.h. from these:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTD:3020/HHP:3000 Equity Issues in the Health Sciences</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>INTD:3107/CW:3107 Creative Writing for the Health Professions</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ANTH:2261 Human Impacts on the Environment</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ANTH:3101/GWSS:3101 Anthropology of Sexuality</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ANTH:3102/GHS:3102/CBH:3102 Medical Anthropology</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ANTH:3103 Environment and Culture</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ANTH:3110/AINS:3110/GHS:3110 Health of Indigenous Peoples</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ANTH:3111/GHS:3040 Health in Mexico</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ANTH:3141/GWSS:3141 Women, Health, and Healing</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ANTH:3282 Animals, Culture, and Food</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ANTH:3300/GWSS:3300 Mothers and Motherhood</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ANTH:4140/GWSS:4140/CBH:5140 The Anthropology of Women's Health</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>CLSA:3440/RELS:3340 Recovering Eden: The Afterlife in Early Judaism and Christianity</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>CLSA:3750 Medical and Technical Terminology</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>CLSA:4181 History of Western Medicine (if not used to fulfill foundation requirement)</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>HIST:4201/ASL:4201 History of the American Deaf Community</td>
<td>3-4 s.h.</td>
</tr>
<tr>
<td>HIST:4203 Disability in American History</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>HIST:4605 Disease, Politics, and Health in South Asia</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>RELS:3580/ANTH:3113 Religion and Healing</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>RELS:3666 The History of a Religious and Spiritual Practice: Yoga in Asia and Beyond</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

**Individualized Plan of Study Track**

The individualized plan of study track requires a minimum of 36 s.h. of work for the major, all taken at the University of Iowa. Students who choose this track build their own study plan, creating a unique major that speaks to interests across departments and that integrates varied approaches to a particular topic (e.g., aging studies, cultural anthropology, etc.).
international business, children's studies, environmental issues, health issues).

Students must submit their study plan for approval. The plan must include an essay that provides a clear statement of the area of intellectual focus; the reasons for preferring the Interdepartmental Studies Program (ISP) to any departmental program; a concrete discussion of how the advanced courses relate to each other, to personal interests, and to the central focus of the study plan; a description of academic goals for the bachelor's degree; a list of advanced-level course work already completed; and a list of advanced-level course work planned for all remaining semesters.

Each study plan is approved by a faculty advisory committee. Reviews are held once a semester. Deadlines are posted on the Interdepartmental Studies Program web site.

If the advisory committee does not grant approval, the study plan may be returned to a student for revisions and resubmission at the next committee meeting. In some cases, a student may be referred to an appropriate departmental major.

Once the study plan is approved, a student is required to follow the plan, taking the courses approved for it. A limited number of substitutions may be allowed, but only if they are clearly consistent with the area of intellectual focus in the approved study plan, and only if they are approved in advance by the ISP advisor. Unauthorized substitutions may be designated as elective course work.

Significant changes in the focus of a student's study plan require the submission and approval of a revised study plan. A student's academic advisor determines whether changes warrant a revised plan.

See the Interdepartmental Studies Program web site for up-to-date information on the individualized plan of study track and rules for submission of study plans.

Students who choose the individualized plan of study track are advised by the ISP coordinator; they work closely with the Interdepartmental Studies Program office while designing the study plan. Students who intend to submit a study plan should contact the ISP coordinator as early as possible.

**Four-Year Graduation Plan**

The Four-Year Graduation Plan is available only to ISP students in the individualized plan of study track. Students in the other ISP tracks work with their advisors to develop individual graduation plans.

The following checkpoints list the minimum requirements students must complete by certain semesters in order to stay on the University's Four-Year Graduation Plan. (Courses in the major are those required to complete the major.)

**Before the seventh semester begins:** an approved individualized plan of study, at least six courses in the plan of study, and at least 90 s.h. earned toward the degree

**Before the eighth semester begins:** a total of at least nine courses in the plan of study

**During the eighth semester:** enrollment in all remaining course work in the major, all remaining General Education courses, and a sufficient number of semester hours to graduate

**Honors in the Major**

Students majoring in interdepartmental studies have the opportunity to graduate with honors in the major; they usually complete the honors requirements of a particular department or program appropriate to their area of study. Students should initiate inquiries about graduating with honors in the interdepartmental studies major by contacting the ISP coordinator; they should inquire early in their junior year to allow time for foundation course work. Students must submit an honors project approval form to the ISP coordinator.

Honors students in interdepartmental studies must be members of the University's honors program, which requires students to maintain a cumulative University of Iowa g.p.a. of at least 3.33 and to fulfill other requirements; visit Honors at Iowa to learn about the University of Iowa Honors Program.

**Courses**

**INTD:3005** Professional and Creative  
**Business Communication**  
Solid foundation for creative and professional communication in today's modern work world; exploration of techniques, strategies, and craft of writing résumés, letters of interest, email and its related etiquette, and organization of ideas into presentable form; semester-long creative project that builds a bridge between office and the world using modern technology and social media; readings and discussions of literature to better understand issues of ethics, leadership, conflict, moral judgment, decision making, and human nature; how to navigate and succeed in business or any professional field. Same as CW:3005.

**INTD:3020** Equity Issues in the Health  
**Sciences**  
Examination of equity issues in the health sciences, including a review of the historical challenges that led to Human Subjects Review Boards, FDA oversight of drug development and clinical trials, inclusion of women in research; effect of situational ethics in the workplace; potential danger of making assumptions about clients/patients; importance of developing an inclusive communication style; assessing the effectiveness of family-friendly employment policies in providing equitable opportunities for career advancement for both women and men. Recommendations: junior or senior standing. Same as HHP:3000.

**INTD:3027** Nutrition for Health, Fitness,  
**and Sport**  
Effects of exercise and nutrition on health- and sports-related fitness; for professionals in health and physical education. Same as HHP:3020.

**INTD:3030** Coaching for Health and  
**Wellness**  
3 s.h.
Opportunities to expand knowledge and develop skills to help individuals change behavior and meet health-related goals; general health and wellness principles; principles and techniques for change; experience providing health-coaching services to clients. Prerequisites: HHP:2200 and HHP:2310. Same as HHP:3030.

**INTD:3107 Creative Writing for the Health Professions** 3 s.h.
Same as CW:3107.

**INTD:3200 Creative Writing for New Media** 3 s.h.
Prepares creative writers for evolving marketplace of electronic text, media; experience writing in varied media such as the Internet, e-books, video games, mobile devices, emergent social narratives. Same as CW:3218.

**INTD:3210 Creative Writing and the Natural World** 3 s.h.
How humans tether to their environment through stories; students write stories and through writing explore if there is a new tie to sustainable history. Same as CW:3210.

**INTD:3300 Creative Writing and Popular Culture** 3 s.h.
Creative writing through the lens of popular culture; topics include television, film writing, adaptations, commercials, advertising, magazines, newspapers, comic books, song lyrics, billboards, and backs of cereal boxes. Same as CW:3215.

**INTD:3510 Introduction to Arts Management** 3 s.h.
Nonprofit performing arts management and administrative principles; practical applications, trends in the field; focus on arts organizations and their key administrative positions. Same as THTR:3510, DPA:3510.

**INTD:3520 New Ventures in the Arts** 3 s.h.

**INTD:4098 Independent Study** arr.
Individual study of issues or topics related to a specific interdepartmental focus chosen by the student.

**INTD:4099 Interdepartmental Studies Practicum** arr.
Opportunity to relate a student's chosen area of study to practical application. Requirements: interdepartmental studies student.

**INTD:4510 Arts Leadership Seminar** 3 s.h.
Performing arts management and administrative principles, practical applications, trends in arts leadership and advocacy. Prerequisites: THTR:3510 or THTR:3520 or ENTR:2000. Same as ENTR:4510, THTR:4510, DPA:4510.
International Business

Coordinators

• Matthew C. Edwards (Tippie College of Business), Patricia Mason-Browne (College of Liberal Arts and Sciences)

Undergraduate certificate: international business Web site: http://tippie.uiowa.edu/undergraduate/programs/ibc.cfm

Undergraduate Program of Study

• Certificate in International Business

The Tippie College of Business and the College of Liberal Arts and Sciences offer the undergraduate Certificate in International Business. The program is designed for students who intend to pursue careers in international business as well as those interested in gaining a better understanding of the global economy and a broader awareness of the political, historical, and social environment in which international business operates.

Certificate

The Certificate in International Business requires 29 s.h. and satisfaction of the certificate's world language or study abroad requirement (total credit depends on the student's choice of world language or study abroad experience). In addition to a world language or study abroad, the program includes study of international business and economics, international relations and institutions, and the contemporary art, literature, culture, and/or politics of one of several geographical regions (Asia, Europe, Latin America, Middle East/Africa, or Russia/Eastern Europe). The range of courses permits students to tailor areas of specialization suited to their individual interests and to complement majors in business and in liberal arts and sciences.

The certificate program is open to current University of Iowa undergraduate students and to all individuals who hold a bachelor's degree and are not enrolled in a graduate or professional degree program. Students must maintain a g.p.a. of at least 2.00 in work for the certificate.

Students should declare their intention to earn the certificate as early as possible and talk with an advisor about certificate requirements. They must submit an individual plan of study. Tippie College of Business students should talk with the advising staff at the college's Undergraduate Program Office; College of Liberal Arts and Sciences students should talk with a Certificate in International Business advisor at the Academic Advising Center. Individuals who hold a bachelor's degree from another institution should contact the University's Office of Admissions.

A minimum of 20 s.h. of certificate course work (other than language courses) must be completed at the University of Iowa or in approved study abroad programs. Students who plan to count study abroad credit toward the certificate should consult a Certificate in International Business advisor before leaving campus. University of Iowa Guided Independent Study Courses are accepted toward the certificate.

Certificate courses may not be taken pass/nonpass. A course may not be used to satisfy more than one certificate requirement.

The Certificate in International Business requires the following course work.

INTERNATIONAL BUSINESS

These courses provide students with an essential understanding of economics, which is central to all business operation. They also help students develop knowledge of the functional areas of international business.

Both of these:

ECON:1100 Principles of Microeconomics 4 s.h.
ECON:1200 Principles of Macroeconomics 4 s.h.

Three of these (total of 9 s.h.):

BUS:2450 Business and Culture in China 3 s.h.
ECON:3345 Global Economics and Business 3 s.h.
ECON:3620 Economic Growth and Development 3 s.h.
ECON:4110 International Economics 3 s.h.
ENTR:4460 Entrepreneurship and Global Trade 3 s.h.
FIN:4240 International Finance 3 s.h.

These courses provide knowledge of the functional areas of international business.

MGMT:3450 International Business Environment 3 s.h.
MKTG:4300 International Marketing 3 s.h.
LAW:8600 International Business Transactions 3 s.h.
LAW:8631 International Trade Law: Basic Norms and Regulations 3 s.h.

One of these may be counted toward the 9 s.h. requirement above:

CHIN:3103 Business Chinese I 3 s.h.
FREN:3410 Business French 3 s.h.
GRMN:3214 Business German 3 s.h.
JPNS:3500 Business Japanese I 3 s.h.
PORT:3130 Business Portuguese 3 s.h.
SPAN:3040 Business Spanish 3 s.h.

INTERNATIONAL RELATIONS AND INSTITUTIONS

These courses familiarize students with comparative politics, social geography, foreign policy, and issues related to world population and the environment—topics relevant to decision making in the international business world.

Two of these (total of 6 s.h.):

ANTH:1003 Anthropology of Violence 3 s.h.
ANTH:1008 Anthropology of Immigration 3 s.h.
ANTH:1040/LING:1040 Language Rights 3 s.h.
ANTH:2100 Anthropology and Contemporary World Problems 3 s.h.
ANTH:2103/GHSS:2000 Introduction to Global Health Studies 3 s.h.
ANTH:2136 Urban Anthropology 3 s.h.
ANTH:3103 Environment and Culture 3 s.h.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH:3112</td>
<td>Environmentalisms</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ANTH:3130</td>
<td>Cultural Politics</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ANTH:3131</td>
<td>Anthropology and Human Rights</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ANTH:4130/RELS:4730</td>
<td>Religion and Environmental Ethics</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>COMM:2042/SSW:2042/IS:2042</td>
<td>Intercultural Communication</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>GEOG:1090</td>
<td>Globalization and Geographic Diversity</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>GEOG:2110</td>
<td>Population Geography: Societies in Flux</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>GEOG:2130</td>
<td>World Cities</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>GEOG:2331</td>
<td>Human Dimensions of Climate</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>GEOG:2410</td>
<td>Environment and Development</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>GEOG:2910</td>
<td>The Global Economy</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>GEOG:3070/GHS:3070</td>
<td>Hungry Planet: Global Geographies of Food</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>GEOG:3910</td>
<td>Geographic Perspectives on Development</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>GEOG:4770</td>
<td>Environmental Justice</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>GHS:4600</td>
<td>Global Health and Human Rights</td>
<td>2-3 s.h.</td>
</tr>
<tr>
<td>HIST:3126</td>
<td>History of Globalization</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>HIST:3143</td>
<td>International Politics: The History of the Present</td>
<td>3-4 s.h.</td>
</tr>
<tr>
<td>HIST:3145</td>
<td>Europe and the U.S. in the Twentieth Century</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>HIST:3155</td>
<td>The World Since 1945</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>HIST:3157/GWSS:3157</td>
<td>Gender, Sexuality, and Human Rights</td>
<td>3 s.h.</td>
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<td>HIST:4101</td>
<td>History of Human Rights</td>
<td>3 s.h.</td>
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<td>HIST:4125</td>
<td>War and Peace in the Twentieth Century</td>
<td>3 s.h.</td>
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<td>HIST:4162/GHS:4162</td>
<td>History of Global Health</td>
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<td>HIST:4232</td>
<td>United States in World Affairs</td>
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<td>HRTS:2115/IS:2115</td>
<td>Introduction to Human Rights</td>
<td>3 s.h.</td>
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<td>HRTS:3895</td>
<td>Human Rights and Community Development</td>
<td>3 s.h.</td>
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<td>HRTS:3900/IS:3900</td>
<td>Child Labor and International Human Rights</td>
<td>3 s.h.</td>
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<td>HRTS:3905/IS:3905</td>
<td>Topics in Human Rights</td>
<td>1-3 s.h.</td>
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<td>HRTS:3910/IS:3910</td>
<td>Human Rights Advocacy</td>
<td>3 s.h.</td>
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<td>HRTS:3915</td>
<td>Human Rights and the Arts</td>
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<td>IS:2000</td>
<td>Introduction to International Studies</td>
<td>3 s.h.</td>
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<tr>
<td>IS:2111</td>
<td>Developed and Developing Places</td>
<td>3 s.h.</td>
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<tr>
<td>IS:2112</td>
<td>The European Union</td>
<td>3 s.h.</td>
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<td>IS:2115/HRTS:2115</td>
<td>Introduction to Human Rights</td>
<td>3 s.h.</td>
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<td>IS:3199</td>
<td>Global Environmental Politics</td>
<td>3 s.h.</td>
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<td>IS:3910/HRTS:3910</td>
<td>Human Rights Advocacy</td>
<td>3 s.h.</td>
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<td>IS:4131/COMM:4131</td>
<td>Globalization and Culture Systems</td>
<td>3 s.h.</td>
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<td>JMC:3130</td>
<td>Comparative Communication</td>
<td>3 s.h.</td>
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<td>LAW:8570</td>
<td>Human Rights in the World Community</td>
<td>3 s.h.</td>
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<td>LAW:8649</td>
<td>Foundations of International Law</td>
<td>3 s.h.</td>
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<td>PHIL:2429</td>
<td>War, Terrorism, and Torture</td>
<td>3 s.h.</td>
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<tr>
<td>PHIL:3430</td>
<td>Philosophy of Human Rights</td>
<td>3 s.h.</td>
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<td>POLI:1400</td>
<td>Introduction to Comparative Politics</td>
<td>3 s.h.</td>
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<td>POLI:1401</td>
<td>Introduction to the Politics of Russia and Eurasia</td>
<td>3 s.h.</td>
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<td>POLI:1403</td>
<td>Introduction to Politics in the Muslim World</td>
<td>3 s.h.</td>
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<td>POLI:1500</td>
<td>Introduction to International Relations</td>
<td>3 s.h.</td>
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<td>POLI:1501</td>
<td>Introduction to American Foreign Policy</td>
<td>3 s.h.</td>
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<td>POLI:2700</td>
<td>Business, Government, and Society</td>
<td>3 s.h.</td>
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<tr>
<td>POLI:3400</td>
<td>Introduction to Political Economy</td>
<td>3 s.h.</td>
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<td>POLI:3401</td>
<td>European Union</td>
<td>3 s.h.</td>
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<td>POLI:3403</td>
<td>Parties and Elections Around the World</td>
<td>3 s.h.</td>
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<td>POLI:3404</td>
<td>Public Policy Around the World</td>
<td>3 s.h.</td>
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<td>POLI:3405</td>
<td>Authoritarian Politics</td>
<td>3 s.h.</td>
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<td>POLI:3406</td>
<td>Ethnic and Religious Conflict in the Muslim World</td>
<td>3 s.h.</td>
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<td>POLI:3411</td>
<td>Democracy: Global Trends and Struggles</td>
<td>3 s.h.</td>
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<td>POLI:3417</td>
<td>Political Leadership</td>
<td>3 s.h.</td>
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<td>POLI:3450</td>
<td>Problems in Comparative Politics</td>
<td>3 s.h.</td>
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<td>POLI:3500</td>
<td>American Foreign Policies</td>
<td>3 s.h.</td>
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<td>POLI:3501</td>
<td>International Organization and World Order</td>
<td>3 s.h.</td>
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<td>POLI:3502</td>
<td>Politics and the Multinational Enterprise</td>
<td>3 s.h.</td>
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<tr>
<td>POLI:3503</td>
<td>Politics of Terrorism</td>
<td>3 s.h.</td>
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<td>POLI:3504</td>
<td>Globalization</td>
<td>3 s.h.</td>
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<td>POLI:3505</td>
<td>Causes, Consequences, and Management of Civil War</td>
<td>3 s.h.</td>
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<tr>
<td>POLI:3506</td>
<td>Consequences of War</td>
<td>3 s.h.</td>
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<tr>
<td>POLI:3507</td>
<td>Women and Politics in Global Perspective</td>
<td>3 s.h.</td>
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<td>POLI:3509</td>
<td>International Courts: The Intersection of Law and Politics</td>
<td>3 s.h.</td>
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<tr>
<td>POLI:3510</td>
<td>State Failure in the Developing World</td>
<td>3 s.h.</td>
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<td>POLI:3511</td>
<td>International Law</td>
<td>3 s.h.</td>
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<td>POLI:3512</td>
<td>International Conflict</td>
<td>3 s.h.</td>
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<tr>
<td>POLI:3513</td>
<td>Politics of International Human Rights Law</td>
<td>3 s.h.</td>
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<tr>
<td>POLI:3514</td>
<td>Regional Peace and Security</td>
<td>3 s.h.</td>
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<td>POLI:3515</td>
<td>Global Communication and Politics</td>
<td>3 s.h.</td>
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<td>POLI:3516</td>
<td>The Politics of International Economics</td>
<td>3 s.h.</td>
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<td>POLI:3517</td>
<td>Global Justice</td>
<td>3 s.h.</td>
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<td>POLI:3550</td>
<td>Problems of International Politics</td>
<td>3 s.h.</td>
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<tr>
<td>RELS:1015</td>
<td>Religions in a Global Context: The Intersection of Law and Politics</td>
<td>3 s.h.</td>
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<td>RELS:1015</td>
<td>Religions in a Global Context: The Intersection of Law and Politics</td>
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<tr>
<td>SOC:3415</td>
<td>Global Criminology</td>
<td>3 s.h.</td>
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</tbody>
</table>

**WORLD LANGUAGE OR STUDY ABROAD EXPERIENCE**

Certificate students gain insight into the culture of another world region and deepen their understanding of their own language and culture by learning a world language or completing a study abroad experience.
Students who choose language study are required to develop intermediate-level competence in a language that is spoken in one of several geographic regions (Asia, Europe, Latin America, Middle East/Africa, or Russia/Eastern Europe) by completing one of the approved language sequences below.

Students who choose to complete a study abroad experience are expected to coordinate it with the course work they use to fulfill the certificate's area studies requirement (see "Area Studies" below). They must earn at least 3 s.h. of graded credit for the study abroad experience.

For questions about languages not listed or about study abroad course work, see a Certificate in International Business advisor.

### Arabic
All of these:
- ARAB:1001-ARAB:1002 Elementary Modern Standard Arabic I-II

### Chinese
All of these:

### Czech
All of these:
- SLAV:1211-SLAV:1212 Conversational Czech I-II
- SLAV:2211-SLAV:2212 Conversational Czech III-IV

### French
One of these:
- FREN:1001-FREN:1002 Elementary French I-II (both courses)
- FREN:1010 First-Year French Review

All of these:
- FREN:2001-FREN:2002 Intermediate French I-II (both courses)
- One course for which FREN:2002 is prerequisite (may include Iowa Regents Program credit)

### German
One of these:
- GRMN:1001-GRMN:1002 Elementary German I-II (both courses)
- GRMN:1010 First-Year German Review

All of these:
- GRMN:2001-GRMN:2002 Intermediate German I-II
- One course for which GRMN:2002 is prerequisite

### Hindi-Urdu
All of these:
- SOAS:2101-SOAS:2102 First-Year Hindi-Urdu: First Semester - First-Year Hindi-Urdu: Second Semester

### Italian
One of these:
- ITAL:1101-ITAL:1102 Elementary Italian-II (both courses)
- ITAL:3002 Intensive Elementary Italian

All of these:
- ITAL:2203-ITAL:2204 Intermediate Italian-II (both of these)
- One course for which ITAL:2204 is prerequisite

### Japanese
All of these:

### Korean
All of these:

### Portuguese
One of these:
- PORT:3050 Portuguese for Spanish Speakers

And:
- One course for which PORT:2500 or PORT:3050 is prerequisite

### Russian
All of these:
- SLAV:1111-SLAV:1112 First-Year Russian I-II
- SLAV:2111-SLAV:2112 Second-Year Russian I-II

And:
- One course for which SLAV:2112 is prerequisite
Spanish
Both of these:
SPAN:1001-SPAN:1002 Elementary Spanish I-II 10 s.h.
One of these:
SPAN:1501-SPAN:1502 Intermediate Spanish I-II (both courses) 10 s.h.
SPAN:1503 Accelerated Intermediate Spanish 6 s.h.
And:
One course for which SPAN:1502 is prerequisite

Swahili
All of these:
SWAH:3001-SWAH:3002 Elementary Swahili I-II 8 s.h.
SWAH:3003-SWAH:3004 Intermediate Swahili I-II 8 s.h.

AREA STUDIES
Area studies topics are critical to students' understanding of how society and culture influence the people with whom they share the world—and with whom they may conduct business. The following courses help students learn about the culture, contemporary history, art, literature, and politics of a specific geographic region.

Students complete 6 s.h. from one geographic region. They should select a region that is related to their chosen world language or study abroad experience.

Asia
Appropriate for these languages: Chinese, Hindi-Urdu, Japanese, or Korean

ANTH:2108/GWSS:2108 Gendering India 3 s.h.
ANTH:2175/JPNS:2175 Japanese Society and Culture 3 s.h.
ANTH:3108 North Korea and Totalitarianism 3 s.h.
ANTH:3121/GWSS:3121 Love and Kinship in South Asia 3 s.h.
ARTH:1070/CHIN:1070 Asian Art and Culture 3 s.h.
ARTH:2220/ASIA:2231 Introduction to the Art of China 3 s.h.
ARTH:2250/ASIA:2250 Introduction to the Art of Japan 3 s.h.
ARTH:3220/ASIA:3219 Chinese Art and Culture 3 s.h.
ARTH:3230/ASIA:3220 Chinese Painting I: Pagodas and Palaces 3 s.h.
ARTH:3240 Chinese Painting II 3 s.h.
ARTH:3260/JPNS:3260 Japanese Painting 3 s.h.
ARTH:3270/ASIA:3270 Themes in Asian Art History 3 s.h.
ASIA:1135 Korean Language in Culture and Society 3 s.h.
ASIA:1704 The Languages of Asia in Cultural and Historical Perspective 3 s.h.
ASIA:1706 Understanding Korean Culture Wave 3 s.h.
ASIA:2444 Envision India 3 s.h.
ASIA:2450 India Beat: The Aesthetics and Politics of India Today 3 s.h.

ASIA:2606/HIST:2606 Civilizations of Asia: South Asia 3 s.h.
ASIA:2887/HIST:2687 Perspectives on Korea 3 s.h.
ASIA:4050/POLI:4050 Two Koreas: Political Economy or Regional Rivalry 3 s.h.
ASIA:4508 Asian Studies 3 s.h.
CHIN:1504 Asian Humanities: China 3 s.h.
CHIN:1702 Chinese Popular Culture 3 s.h.
CHIN:3202 Chinese Literature: Prose 3 s.h.
CHIN:3341/CL:3341 Chinese Literature: Poetry 3 s.h.
CHIN:4203/CL:4203 Modern Chinese Writers 3 s.h.
CHIN:4204/RELS:4404 The Literature of Daoism 3 s.h.
CHIN:4206/CINE:4674 Transnational Chinese Cinemas 3 s.h.
CINE:2625 Introduction to Asian Film 3 s.h.
CINE:4606/ASIA:4606 Topics in Asian Cinema 3 s.h.
ENGL:3540 Literature of the Indian Subcontinent 3 s.h.
GEOG:1060 Geography of Asia: From Japan to Pakistan 3 s.h.
GHS:3192 Environment and Health in Modern India 3 s.h.
GWSS:1070 Asian American Women Writers 3 s.h.
HIST:2602/ASIA:2602 Civilizations of Asia: China 3 s.h.
HIST:2604/ASIA:2604 Civilizations of Asia: Japan 3 s.h.
HIST:2606/ASIA:2606 Civilizations of Asia: South Asia 3-4 s.h.
HIST:2607 Civilizations of Asia: Korea 3-4 s.h.
HIST:2609 India Now! A Survey from Bollywood Films to Global Terror 3-4 s.h.
HIST:2687/ASIA:2887 Perspectives on Korea 3 s.h.
HIST:4176 Vietnam War on Film 3-4 s.h.
HIST:4605/GHS:4605 Disease, Politics, and Health in South Asia 3 s.h.
HIST:4610/JPNS:4610 Japan—Age of the Samurai 3 s.h.
HIST:4615/JPNS:4615 Modern Japan 3 s.h.
HIST:4617 History, Memory, and Pacific War 3 s.h.
HIST:4620/JPNS:4620 Japan-US Relations 3 s.h.
HIST:4640 Imperialism and Modern India 3 s.h.
HIST:4653 Law and Society in Late Imperial and Modern China 3 s.h.
HIST:4655/ASIA:4655 China Since 1927 3 s.h.
HIST:4685 Modern Korean History 3 s.h.
JPNS:1506 Asian Humanities: Japan 3 s.h.
JPNS:3128 Introduction to Japanese Linguistics 3 s.h.
JPNS:3135 Postmodern Aesthetics and Japanese Culture 3 s.h.
JPNS:3202/CL:3204 Traditional Japanese Literature in Translation 3 s.h.
JPNS:3203/CL:3203 Modern Japanese Fiction in Translation 3 s.h.
JPNS:3205 Major Authors in Modern Japanese Literature 3 s.h.
JPNS:3206 Warriors Dreams 3 s.h.
JPNS:3208 Japanese Film 3 s.h.
JPNS:3401 Language in Japanese Society 3 s.h.
JNPS:3402 Japan: Culture and Communication 3 s.h.
JNPS:3601 Contemporary Japanese Culture 3 s.h.
JNPS:3700/WLLC:3700/ASIA:3700 Topics in Global Cinema 3 s.h.
PHIL:2343 Philosophy East and West 3 s.h.
PHIL:3845/RELS:3645 Buddhist Philosophy 3 s.h.
POLI:3408 Chinese Politics and Society 3 s.h.
POLI:3414/ASIA:3414 Government and Politics of the Far East 3 s.h.
POLI:3420 Southeast Asia: Democracy, Identity, and Development 3 s.h.
RELS:1404/ASIA:1040 Living Religions of the East 3 s.h.
RELS:1410 Introduction to Indian Religions 3 s.h.
RELS:1506/ASIA:1060 Introduction to Buddhism 3 s.h.
RELS:1610/JNPS:1115 Japanese Religions 3 s.h.
RELS:3431/GWSS:3131 Gender and Sexuality in Asia 3 s.h.
RELS:3448/ASIA:3448 Sacred Sexuality in Indian Culture 3 s.h.
RELS:3655/ASIA:3655 Zen Buddhism 3 s.h.
RELS:3660/JNPS:3660 Japanese Religion and Thought 3 s.h.
RELS:3666 The History of a Religious and Spiritual Practice: Yoga in Asia and Beyond 3 s.h.
SOAS:1502/RELS:1502 Asian Humanities: India 3 s.h.
SOAS:1550 Sex, Music, and Pop Culture in India 3 s.h.

**Europe**

Appropriate for these languages: Czech, French, German, Italian, Portuguese, or Spanish

ARTH:3020/FREN:3030 Paris and the Art of Urban Life 3 s.h.
ARTH:3864 Nazi and Stalinist Art: Aesthetics of Power 3 s.h.
CINE:2621 Introduction to European Film 3 s.h.
CINE:4604 Topics in European Film 3 s.h.
CL:3263 Studies in 20th-Century European Literature 3 s.h.
ENGL:2330 Topics in Modern British Literature After 1900 3 s.h.
ENGL:2360 Twentieth-Century British Literature 3 s.h.
ENGL:2361 Twenty-first-Century British Literature 3 s.h.
ENGL:3320 Modern British Drama 3 s.h.
ENGL:3350 Literature and Culture of 20th- and 21st-Century Britain 3 s.h.
FREN:1510 Cultural Misunderstandings: France and U.S.A. 3 s.h.
FREN:3120 French Civilization 3 s.h.
FREN:3130 French-Speaking Cultures 3 s.h.
FREN:3225 Studies in Modern France 3 s.h.
FREN:3540/CINE:3647/GWSS:3540 Gender and Sexuality in French Cinema 3 s.h.
FREN:4015 Francophone Cinema 3-4 s.h.
FREN:4026/GWSS:4026 French Women Writers 3-4 s.h.
FREN:4080/CL:4368 Post-Colonial Literature in France 3 s.h.
FREN:4100/CINE:4100 French Cinema 3-4 s.h.
GRMN:2618/CL:2618 The Third Reich and Literature 3 s.h.
GRMN:2650 German Nationalism After WWII 3-4 s.h.
GRMN:2675 The Politics of Memory: Holocaust, Genocide, and 9/11 3-4 s.h.
GRMN:2720/HIST:2420 Germany in the World 3 s.h.
GRMN:2775 Scandinavian Crime Fiction 3 s.h.
GRMN:3236 German Film 3 s.h.
GRMN:3250 Brief Texts About Big Events 3 s.h.
GRMN:3405 German Cultural History 3 s.h.
GRMN:3501 Introduction to German Literature 3 s.h.
GRMN:3550 The Politics of Remembrance in German Multicultural Literature and Film 3 s.h.
GRMN:4315 Contemporary German Civilization 3 s.h.
GRMN:4540 Literature in Film 3 s.h.
HIST:2465 Europe Since 1945 3 s.h.
HIST:3145 Europe and the U.S. in the Twentieth Century 3 s.h.
HIST:4435 War and Society in Modern Europe 3 s.h.
HIST:4438 Modern European Imperialism 3 s.h.
HIST:4460 Twentieth-Century Europe: The Nazi Era 3 s.h.
HIST:4461 Twentieth-Century Europe: The Cold War and After 3 s.h.
HIST:4465 Modern France 1870-Present 3 s.h.
HIST:4466/FREN:4466 France and Algeria from Pirates to Terrorism 3 s.h.
HIST:4470 France from 1815-Present 3 s.h.
HIST:4475 Germany Since 1914: Weimar, Hitler, and After 3 s.h.
HIST:4478 Holocaust in History and Memory 3 s.h.
HIST:4486 Modern Britain: The Twentieth Century 3 s.h.
ITAL:2550 Images of Modern Italy 3 s.h.
ITAL:4350 Studies in Italian Language 3 s.h.
ITAL:4667 Modern Italian Fiction 3 s.h.
ITAL:4668 Modern Italian Poetry and Drama 3 s.h.
POLI:3401 European Union 3 s.h.
POLI:3403 Parties and Elections Around the World 3 s.h.
POLI:3412 Government and Politics of Europe 3 s.h.
POLI:3416 France in the 21st Century 3 s.h.
PORT:3500 Introduction to Portuguese Literature 3 s.h.
SPAN:1900 Diversity and Cultures in Spain 3 s.h.
SPAN:2400 Readings in Spanish Literature 3 s.h.
SPAN:3600 Cultures of Spain 3 s.h.
SPAN:3620 Madrid 3 s.h.
SPAN:3630 Spanish Youth Culture 3 s.h.
SPAN:3820 Modern and Contemporary Spanish Literature 3 s.h.
SPAN:3830 Spanish Literature of the Transition 3 s.h.
SPAN:3840 Contemporary Spanish Short Story 3 s.h.
SPAN:4830 The Hispanic World in the Digital Era 3 s.h.
SPAN:4860 The Spanish Civil War 3 s.h.
WLLC:2550 Mardi Gras and More: Cultures of Carnival 3-4 s.h.

Latin America
Appropriate for these languages: Portuguese or Spanish
ANTH:2110 Latin American Economy and Society 3 s.h.
ANTH:3111/GHS:3040 Health in Mexico 3 s.h.
CINE:2624 Introduction to Latin American Film 3 s.h.
CINE:4678/SPAN:4810 Topics in Latin American Cinema 3 s.h.
CL:3396/SPAN:3420 Cuban American Literature and Culture 3 s.h.
DANC:1150 Brazilian Culture and Carnival 3 s.h.
ENGL:3530 Caribbean Literature and Culture 3 s.h.
ENGL:3535 Inter-American Studies 3 s.h.
HIST:2288 Introduction to Mexican American History 3 s.h.
HIST:4216 Mexican American History 3 s.h.
HIST:4217 Latina/o Immigration 3 s.h.
HIST:4501 Society and Revolution in Cuba 3 s.h.
HIST:4502/AINS:4502 History of Mexico 3 s.h.
HIST:4505 Topics in Latin American History 3 s.h.
HIST:4515 Introduction to Modern Latin America 3 s.h.
HIST:4520 Latin America and the U.S.: The Historical Perspective 3 s.h.
HIST:4525 Latin American Revolution 3 s.h.
HIST:4526 Dictatorships of Latin America 3 s.h.
LAS:2700/IS:2700/PORT:2700/SPAN:2700 Introduction to Latin American Studies 3 s.h.
MUS:2311 Music of Latin America and the Caribbean 3 s.h.
POLI:2415 Latin American Politics 3 s.h.
PORT:1800 Contemporary Brazilian Narrative 3 s.h.
PORT:2800 Topics in Cultural Studies 3 s.h.
PORT:3400 Brazilian Literature After 1900 3 s.h.
PORT:3800 Mapping Portuguese Cultures: Portugal and Africa 3 s.h.
PORT:4000 Topics in Luso-Brazilian Literature 3 s.h.
SPAN:1800 Contemporary Spanish American Narrative 3 s.h.
SPAN:2200 Introduction to Spanish American Cultures 3 s.h.
SPAN:2500 Readings in Spanish American Literature 3 s.h.
SPAN:2800 Screening Latin America 3 s.h.
SPAN:2900 Music of the Hispanic World 3 s.h.
SPAN:3200 Cultures of Spanish America 3 s.h.
SPAN:3230 Modern Mexico 3 s.h.
SPAN:3270/CL:3262 Pan-Caribbean Literary Currents 3 s.h.
SPAN:3290 Topics in Cinema and Society 3 s.h.
SPAN:3300 Contemporary Spanish American Fiction 3 s.h.
SPAN:3310 Spanish American Short Story 3 s.h.
SPAN:3320 Spanish American Poetry 3 s.h.
SPAN:3350 Contemporary Spanish American Literature 3 s.h.
SPAN:3360/GWSS:3360 Latin American Women Writers 3 s.h.
SPAN:3440 Topics in Latino/a Literature and Culture 3 s.h.
SPAN:3840 Contemporary Spanish Short Story 3 s.h.
SPAN:4310 Cultural Identity in Caribbean Literature 3 s.h.
SPAN:4350 Twentieth-Century Spanish American Theater and Performance 3 s.h.
SPAN:4370 Literature and Mass Culture in Latin America 3 s.h.
SPAN:4380 Narratives of Underdevelopment 3 s.h.
SPAN:4820 Latino/a Popular Culture 3 s.h.
SPAN:4830 The Hispanic World in the Digital Era 3 s.h.
SPAN:4880 Comic Books and Graphic Novels in the Hispanic World 3 s.h.

Middle East/Africa
Appropriate for these languages: Swahili, or proficiency in another contemporary Middle Eastern or African language
ANTH:2182 Africa: Health and Society 3 s.h.
ARAB:1050 Topics in Middle East/Muslim World Studies I 3 s.h.
ARAB:2025 Study Abroad: Culture and Society 1 s.h.
ARAB:2050 Topics in Middle East/Muslim World Studies II 3 s.h.
ARTH:1040 Arts of Africa 3 s.h.
ARTH:2160 Introduction to Art and Life in Africa 3 s.h.
ARTH:3150 Art of West Africa 3 s.h.
ARTH:3170 The Art of Central Africa 3 s.h.
ARTH:3325 Kings, Gods, and Heroes: Art of the Ancient Near East 3 s.h.
ASIA:1770 Asian Humanities: Middle East 3 s.h.
ASIA:3120 Autobiography in Islamic Literary Cultures 3 s.h.
ASIA:3550 Islam, Secularity, Modernity 3 s.h.
ENGL:3550/AFAM:3550 African Literature 3 s.h.
ENGL:3555/AFAM:3555 Topics in African Cinema 3 s.h.
FREN:3130 French-Speaking Cultures 3 s.h.
FREN:4015 Francophone Cinema 3-4 s.h.
FREN:4110 Francophone Literature of the African Diaspora 3 s.h.
FREN:4466/HIST:4466 France and Algeria from Pirates to Terrorism 3 s.h.
GEOG:2404 African Development 3 s.h.
GEOG:4960 The Middle East 3 s.h.
GHS:3555/HIST:3755/IS:3555 Understanding Health and Disease in Africa 3 s.h.
HIST:2708 Civilizations of Africa 3 s.h.
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<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tr>
<td>HIST:4715/AFAM:4715</td>
<td>African History Since 1880</td>
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<td>HIST:4723</td>
<td>Slavery, Gender, and Identity in East Africa</td>
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<tr>
<td>HIST:4724</td>
<td>Crossing the Indian Ocean</td>
<td>3 s.h.</td>
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<tr>
<td>HIST:4725/GWSS:4725</td>
<td>Women and Gender in African History</td>
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<td>HIST:4728/SWAH:4000</td>
<td>Identity, Trade, and Diaspora</td>
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<td>HIST:4730</td>
<td>Slavery, Jihads, and Saints in Islamic Africa</td>
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<tr>
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<td>History of the Modern Middle East</td>
<td>3 s.h.</td>
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<td>Topics in the Modern Middle East</td>
<td>3 s.h.</td>
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<tr>
<td>POLI:1403</td>
<td>Introduction to Politics in the Muslim World</td>
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<tr>
<td>POLI:3406</td>
<td>Ethnic and Religious Conflict in the Muslim World</td>
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<td>POLI:3418</td>
<td>Governance in the Middle East</td>
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<td>POLI:3419</td>
<td>War in the Muslim World</td>
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<td>POLI:3421</td>
<td>Southern Africa: Development and Governance</td>
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<td>POLI:3422</td>
<td>Transnational Issues and the Horn of Africa</td>
<td>arr.</td>
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<td>The Middle East: Policy and Diplomacy</td>
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<td>PORT:3800</td>
<td>Mapping Portuguese Cultures: Portugal and Africa</td>
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<tr>
<td>RELS:2852/GWSS:2052</td>
<td>Women in Islam and the Middle East</td>
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<tr>
<td>RELS:3020</td>
<td>Religion and Politics</td>
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<tr>
<td>RELS:3855</td>
<td>Human Rights and Islam</td>
<td>3 s.h.</td>
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<tr>
<td>RELS:4133</td>
<td>Special Topics: Islamic and Middle Eastern Societies</td>
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<td>RELS:4768</td>
<td>Islamic Sects</td>
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<td>SLAV:2122</td>
<td>Cult Films of the Last Soviet Generation</td>
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<tr>
<td>SLAV:2131</td>
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<td>3 s.h.</td>
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<td>SLAV:2232/CL:2700</td>
<td>Romani (Gypsy) Cultures of Eastern Europe</td>
<td>3 s.h.</td>
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<td>SLAV:2531/CL:2531</td>
<td>Topics in Russian, East European, and Eurasian Studies</td>
<td>3 s.h.</td>
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<td>SLAV:3082</td>
<td>Youth Subcultures After Socialism</td>
<td>3 s.h.</td>
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<tr>
<td>SLAV:3100</td>
<td>West and East: Women in the Slavic World</td>
<td>3 s.h.</td>
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<tr>
<td>SLAV:3122/CL:3122</td>
<td>Tolstoy and Dostoevsky</td>
<td>3-4 s.h.</td>
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<td>SLAV:3124</td>
<td>Invitation to Nabokov</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>SLAV:3131/GHS:3131</td>
<td>Health Care and Health Reforms in Russia</td>
<td>3 s.h.</td>
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<tr>
<td>SLAV:3202/CL:3302</td>
<td>Russian Literature in Translation 1860-1917</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>SLAV:3221/CL:3221</td>
<td>Twentieth-Century Czech Authors</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

**Russia/Eastern Europe**

Appropriate for these languages: Russian, or proficiency in a modern Slavic language

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>HIST:4493</td>
<td>Soviet Union 1917-1945</td>
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<td>POLI:1401</td>
<td>Introduction to the Politics of Russia and Eurasia</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>POLI:3401</td>
<td>European Union</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>POLI:3405</td>
<td>Authoritarian Politics</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>POLI:3410</td>
<td>Russian Foreign Policy</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>POLI:3413</td>
<td>Russian Politics</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>SLAV:1131</td>
<td>Introduction to Russian Culture</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>SLAV:1132</td>
<td>Russia Today</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>SLAV:1450</td>
<td>Diversities of Eastern Europe: Culture, Art, and Politics</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>SLAV:1500/CL:1500</td>
<td>Ukraine, a Country at the Crossroads: An Interdisciplinary Seminar on Ukrainian History and Culture</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>SLAV:1531</td>
<td>Slavic Folklore</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>SLAV:1532</td>
<td>Religion and Culture of Slavs</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>SLAV:2100</td>
<td>Secrets of Russian Mentality</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>
International Studies

Director, Division of Interdisciplinary Programs

• Helena R. Dettmer

Chair, International Studies

• Helena R. Dettmer (Classics)

Undergraduate major: international studies (B.A.)
Undergraduate minor: international studies

Faculty: http://intprog.its.uiowa.edu/international-studies/
students/mentor-directory.asp?All=ShowAllMentor#results
Web site: http://clas.uiowa.edu/international-studies

The International Studies major encourages students to integrate theoretical knowledge about broad global processes, and the methods used to study them, with in-depth examination of a particular geographical region or a major theme in international studies. The major affords students the opportunity to integrate the study of history, politics, economics, expressive arts, culture, beliefs, and social systems.

International Studies is one of the academic units in the Division of Interdisciplinary Programs (p. 226).

Undergraduate Programs of Study

• Major in international studies (Bachelor of Arts)
• Minor in international studies

The international studies major is interdisciplinary. It is designed to help students learn to appreciate world cultures, focus on themes of global significance, and master varied disciplinary approaches used to study international issues. The program complements a wide range of academic degree programs and is an appropriate choice for many students who plan to pursue a double major.

The major prepares students for careers in business, government, international development agencies, nongovernmental organizations, philanthropic agencies, and the arts. It is excellent preparation for graduate training in the social sciences, the arts, law, business, journalism, international affairs, area studies, and public health.

Bachelor of Arts

The Bachelor of Arts with a major in international studies requires a minimum of 120 s.h., including at least 42 s.h. of work for the major. Students must maintain a g.p.a. of at least 2.00 in all courses for the major and in all UI courses for the major. They also must complete the College of Liberal Arts and Sciences General Education Program (p. 313).

The major in international studies is flexible, drawing on courses across the humanities and social sciences. Students work closely with an academic advisor to plan their program of study.

Work for the major includes two introductory courses, three foundation courses, language study beyond that required by the General Education Program, requirements for one of the major's three program options (A, B, or C), and required course work in one of the major's tracks.

International studies students must complete course work from at least four different departments and/or programs; they may count a maximum of 12 s.h. from any department or program toward the major.

Students may apply up to 12 s.h. of course work from each additional major, minor, or certificate they earn toward the international studies major. Transfer credit approved by the International Studies Program may be applied to the major. Students must complete at least 15 s.h. of work for the major at the University of Iowa.

The major in international studies requires the following course work.

INTRODUCTORY COURSES

Both of these:

IS:1000 Designing Your International Studies Major
IS:2000 Introduction to International Studies

FOUNDATION COURSES

Students earn a minimum of 9 s.h. in foundation courses chosen from the following lists. Foundation courses provide an overview of global issues and introduce a disciplinary approach to global topics, laying the groundwork for continuing study.

ANTH:1101 Cultural Anthropology
ARTH:1030 Themes in Global Art
ASIA:2450 India Beat: The Aesthetics and Politics of India Today
DANC:2060 Dance and Society in Global Contexts
POLI:1400 Introduction to Comparative Politics
RELS:1015 Religions in a Global Context: The Critical Role of Religion in International Affairs

May include one of these:

HIST:2403 Western Civilization III
HIST:3155 The World Since 1945

May include one of these:

GEOG:1090 Globalization and Geographic Diversity
GEOG:2910 The Global Economy

May include one of these:

CL:1240 Major Texts of World Literature, Antiquity to 1700
CL:1241 Major Texts of World Literature, 1700 to the Present

LANGUAGE REQUIREMENT

All students must complete a minimum of two semesters of language study beyond that required by the General Education Program (p. 313). This additional language requirement may be met either by completing two semesters of upper-level study in the same language used to fulfill the General Education Program's World Languages requirement or by completing two semesters, or the equivalent, of a second world language at any level.

In fulfilling the language requirement, most students are eligible to receive an additional 4 s.h. of ungraded
credit under the Furthering Language Incentive Program (FLIP). This credit may be applied to the minimum 120 s.h. required for graduation, but it does not count toward requirements for the international studies major.

**TRACKS**

Students complete their choice of one of the major’s tracks. Each track requires a minimum of 18 s.h. of course work, including at least 12 s.h. earned in courses numbered 3000 or above. Students may not count their foundation courses toward track requirements.

Students may petition the International Studies Program for permission to include a course that is not on the list of courses approved for their track; they must submit their petition by the semester’s specified deadline date.

With the International Studies Program’s approval, students may develop other tracks for which sufficient courses exist. Students interested in developing a unique track should discuss their ideas with the international studies advisor as soon as possible.

International studies majors completing the Certificate in Global Health Studies, International Business, or Latin American Studies or the minor in global health studies or Latin American studies may not choose an international studies track that corresponds with those certificate(s) or minor(s).

Tracks are listed under “Tracks and Approved Courses” below.

**PROGRAM OPTIONS**

International studies students complete all of the requirements for one of the major’s three program options: A, B, or C. Program option requirements are not interchangeable.

**Program option A:** Students complete an additional 6 s.h. in courses numbered 3000 or above chosen from a second international studies track.

**Program option B:** Students complete a senior project and must take the following two courses.

- **IS:3010 Creating a Proposal for International** 2 s.h.
- **Research**
- **IS:4990 International Studies Senior Project** 3 s.h.

Students prepare for the senior project by completing IS:3010 Creating a Proposal for International Research, in which they learn research methodologies and prepare a project proposal. During their last year of study, they enroll in IS:4990 International Studies Senior Project and complete a semester-long individual research project that culminates in a substantial written or creative work focusing on a topic related to course work in their track. They complete the course and project under the supervision of a faculty mentor.

**Program option C:** Students complete an experiential learning activity (credit or noncredit), such as study abroad or related volunteer work, and complete two writing courses, one from each list below. They also submit an international studies essay during their last year. Students interested in choosing program option C should speak with the international studies advisor about procedures for the option.

One of these:

- **CNW:1620 Introduction to Creative Nonfiction** 3 s.h.
- **CNW:2680 The Art and Craft of Creative Nonfiction**
- **SPAN:2000 Spanish Language Skills: Writing** 3 s.h.

**TRACKS AND APPROVED COURSES**

**African Studies Track**

Students must complete a minimum of 18 s.h. for the track, chosen from the following list. They must include at least 12 s.h. in courses numbered 3000 or above.

- **IS:3200 Political Economy of International Development** 3 s.h.
- **IS:3555/GHS:3555 Understanding Health and Disease in Africa** 3 s.h.
- **ANTH:2182 Africa: Health and Society** 3 s.h.
- **ANTH:3275/CLSA:3596 The Archaeology of Ancient Egypt** 3 s.h.
- **ARTH:1040 Arts of Africa** 3 s.h.
- **ARTH:3150 Art of West Africa** 3 s.h.
- **ARTH:3160 Themes in African Art** 3 s.h.
- **ARTH:3170 The Art of Central Africa** 3 s.h.
- **DANC:2060/DPA:2060 Dance and Society in Global Contexts** 3 s.h.
- **ENGL:3550/AFAM:3550 African Literature** 3 s.h.
- **ENGL:3555/AFAM:3555 Topics in African Cinema** 3 s.h.
- **FREN:3130 French-Speaking Cultures** 3 s.h.
- **FREN:4110 Francophone Literature of the African Diaspora** 3 s.h.

- **CNW:2690 The Art and Craft of Writing About Business** 3 s.h.
- **CNW:2700 The Art and Craft of Personal Writing**
- **CNW:2710 The Art and Craft of Food Writing** 3 s.h.
- **CNW:2720 The Art and Craft of Writing About Culture**
- **CNW:2740 The Art and Craft of Writing about the Environment** 3 s.h.
- **CNW:2760 The Art and Craft of Writing for Social Change** 3 s.h.
- **CNW:2770 The Art and Craft of Writing for New Media** 3 s.h.
- **CNW:2780 The Art and Craft of Writing About Sports** 3 s.h.
- **CNW:2790 The Art and Craft of Humor Writing** 3 s.h.
- **CNW:2800 The Art and Craft of Writing Across Genres**
- **CNW:2810 The Art and Craft of Writing with Emotion** 3 s.h.
- **CNW:2820 The Art and Craft of the Literary Essay** 3 s.h.
- **CNW:2830 The Art and Craft of Immersion Journalism** 3 s.h.
- **CNW:3630 Advanced Nonfiction Writing** 3 s.h.
- **CNW:4631 Undergraduate Essay Workshop** 3 s.h.
- **SPAN:3020 Journalistic Writing in Spanish** 3 s.h.
- **SPAN:3060 Introductory Workshop on Creative Writing in Spanish** 3 s.h.
### Development Track

Students must complete a minimum of 18 s.h. for the track, chosen from the following list. They must include at least 12 s.h. in courses numbered 3000 or above.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>IS:2111</td>
<td>Developed and Developing Places</td>
</tr>
<tr>
<td>IS:3199</td>
<td>Global Environmental Politics</td>
</tr>
<tr>
<td>IS:3200</td>
<td>Political Economy of International Development</td>
</tr>
<tr>
<td>IS:3555</td>
<td>Understanding Health and Disease in Africa</td>
</tr>
<tr>
<td>ANTH:2100</td>
<td>Anthropology and Contemporary World Problems</td>
</tr>
<tr>
<td>ANTH:2110</td>
<td>Latin American Economy and Society</td>
</tr>
<tr>
<td>ANTH:2136</td>
<td>Urban Anthropology</td>
</tr>
<tr>
<td>ANTH:2261</td>
<td>Human Impacts on the Environment</td>
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<tr>
<td>ASIA:4050/POLI:4050</td>
<td>Two Koreas: Political Economy or Regional Rivalry</td>
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<td>CEE:3141/GHS:3141</td>
<td>Design With the Developing World</td>
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<td>ECON:3620</td>
<td>Economic Growth and Development</td>
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<td>ECON:4110</td>
<td>International Economics</td>
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<td>EPLS:5104</td>
<td>Education in the Third World</td>
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<tr>
<td>GEOG:1060</td>
<td>Geography of Asia: From Japan to Pakistan</td>
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<td>GEOG:2404</td>
<td>African Development</td>
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<td>GEOG:2410</td>
<td>Environment and Development</td>
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<td>GEOG:2910</td>
<td>The Global Economy</td>
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<tr>
<td>GEOG:3070/GHS:3070</td>
<td>Hungry Planet: Global Geographies of Food</td>
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<td>GEOG:3910</td>
<td>Geographic Perspectives on Development</td>
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<td>GEOG:4750/URP:4750</td>
<td>Environmental Impact Analysis</td>
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<tr>
<td>GHS:3060</td>
<td>Studies in Complementary and Alternative Medicine</td>
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<tr>
<td>GHS:4230</td>
<td>Health Experience of Immigrants, Migrants, and Refugees</td>
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<td>GWSS:3010/GHS:3015</td>
<td>Transnational Sexualities</td>
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<td>HIST:3126</td>
<td>History of Globalization</td>
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<td>HIST:4105</td>
<td>World Events in Historical Context</td>
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<td>HIST:4107</td>
<td>World History I</td>
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<td>HIST:4109</td>
<td>World History II</td>
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<td>HIST:4232</td>
<td>United States in World Affairs</td>
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<td>HIST:4605</td>
<td>Disease, Politics, and Health in South Asia</td>
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<td>HRTS:3895</td>
<td>Human Rights and Community Development</td>
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<td>HRTS:3910/IS:3910</td>
<td>Human Rights Advocacy</td>
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<tr>
<td>JMC:3116/IS:3116</td>
<td>Communication-Based Approaches to International Development</td>
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</tbody>
</table>

### Caribbean Studies Track

Students must complete a minimum of 18 s.h. for the track, chosen from the following list. They must include at least 12 s.h. in courses numbered 3000 or above.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>ENGL:3525</td>
<td>Literature and Culture of the Americas</td>
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<tr>
<td>ENGL:3530</td>
<td>Caribbean Literature and Culture</td>
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<tr>
<td>FREN:4015</td>
<td>Francophone Cinema</td>
</tr>
<tr>
<td>FREN:4110</td>
<td>Francophone Literature of the African Diaspora</td>
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<tr>
<td>HIST:4289/AINS:4289</td>
<td>The Atlantic World c. 1450-1850</td>
</tr>
<tr>
<td>HIST:4501</td>
<td>Society and Revolution in Cuba</td>
</tr>
<tr>
<td>HIST:4515</td>
<td>Introduction to Modern Latin America</td>
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<tr>
<td>HIST:4525</td>
<td>Latin American Revolution</td>
</tr>
<tr>
<td>HIST:4710/AFAM:4310</td>
<td>Pre-Colonial African History</td>
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<tr>
<td>HIST:4715/AFAM:4715</td>
<td>African History Since 1880</td>
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<tr>
<td>MUS:2311</td>
<td>Music of Latin America and the Caribbean</td>
</tr>
<tr>
<td>MUS:3163</td>
<td>Steel Band</td>
</tr>
<tr>
<td>SPAN:3270/CL:3262</td>
<td>Pan-Caribbean Literary Currents</td>
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<tr>
<td>SPAN:3420/CL:3396</td>
<td>Cuban American Literature and Culture</td>
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<tr>
<td>SPAN:4310</td>
<td>Cultural Identity in Caribbean Literature</td>
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<tr>
<td>SPAN:4350</td>
<td>Twentieth-Century Spanish American Theater and Performance</td>
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<tr>
<td>SPAN:4390</td>
<td>Topics in Spanish American Literature</td>
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</table>
PHAR:8788/CEE:4788/GHS:4126 International Perspectives: Xicotepec  2 s.h.
POLI:1401 Introduction to the Politics of Russia and Eurasia  3 s.h.
POLI:3420 Southeast Asia: Democracy, Identity, and Development  arr.
POLI:3422 Transnational Issues and the Horn of Africa  arr.
POLI:3504 Globalization  3 s.h.
POLI:3510 State Failure in the Developing World  3 s.h.
POLI:3516 The Politics of International Economics  3 s.h.
SPAN:4380 Narratives of Underdevelopment  3 s.h.

**East Asian Studies Track**

Students must complete a minimum of 18 s.h. for the track, chosen from the following list. They must include at least 12 s.h. in courses numbered 3000 or above.

IS:3200 Political Economy of International Development  3 s.h.
ARTH:1070/CHIN:1070 Asian Art and Culture  3 s.h.
ARTH:2220/ASIA:2231 Introduction to the Art of China  3 s.h.
ARTH:2250/JPNS:2250 Introduction to the Art of Japan  3 s.h.
ARTH:3220/ASIA:3220 Chinese Painting I: Pagodas and Palaces  3 s.h.
ARTH:3240 Chinese Painting II  3 s.h.
ARTH:3260/JPNS:3260 Japanese Painting  3 s.h.
ARTH:3270/ASIA:3270 Themes in Asian Art History  3 s.h.
ASIA:1135 Korean Language in Culture and Society  3 s.h.
ASIA:1704 The Languages of Asia in Cultural and Historical Perspective  3 s.h.
ASIA:1706 Understanding Korean Culture Wave  3 s.h.
ASIA:4050/POLI:4050 Two Koreas: Political Economy or Regional Rivalry  3 s.h.
ASIA:4507 Topics in Asian Studies arr.
ASIA:4606/CINE:4606 Topics in Asian Cinema  3 s.h.
CHIN:1504 Asian Humanities: China  3 s.h.
CHIN:1702 Chinese Popular Culture  3 s.h.
CHIN:3201 Workshop in Chinese Literary Translation  3 s.h.
CHIN:3202 Chinese Literature: Prose  3 s.h.
CHIN:3302/LING:3302/SLA:3302 Introduction to Chinese Linguistics  3 s.h.
CHIN:3341/CL:3341 Chinese Literature: Poetry  3 s.h.
CHIN:4203/CL:4203 Modern Chinese Writers  3 s.h.
CHIN:4206/CINE:4674 Transnational Chinese Cinemas  3 s.h.
CHIN:5103 Readings in Chinese Literature  3 s.h.
CINE:2625 Introduction to Asian Film  3 s.h.
EPLS:5104 Education in the Third World  2-3 s.h.
GEOG:1060 Geography of Asia: From Japan to Pakistan  3 s.h.
HIST:2602/ASIA:2602 Civilizations of Asia: China  3 s.h.
HIST:2604/ASIA:2604 Civilizations of Asia: Japan  3-4 s.h.
HIST:2607 Civilizations of Asia: Korea  3-4 s.h.
HIST:2687 Perspectives on Korea  3 s.h.
HIST:4176 Vietnam War on Film  3-4 s.h.
HIST:4610/JPNS:4610 Japan—Age of the Samurai  3 s.h.
HIST:4615/JPNS:4615 Modern Japan  3 s.h.
HIST:4617 History, Memory, and Pacific War  3 s.h.
HIST:4620/JPNS:4620 Japan-US Relations  3 s.h.
HIST:4650/ASIA:4657 Chinese History from 1600 to 1927  3 s.h.
HIST:4655/ASIA:4655 China Since 1927  3 s.h.
HIST:4666/ASIA:4666 Topics in Asian History  3 s.h.
HIST:4685 Modern Korean History  3 s.h.
JPNS:1506 Asian Humanities: Japan  3 s.h.
JPNS:2175/ANTH:2175 Japanese Society and Culture  3 s.h.
JPNS:3135 Postmodern Aesthetics and Japanese Culture  3 s.h.
JPNS:3201 Workshop in Japanese Literary Translation  3 s.h.
JPNS:3202/CL:3204 Traditional Japanese Literature in Translation  3 s.h.
JPNS:3203/CL:3203 Modern Japanese Fiction in Translation  3 s.h.
JPNS:3204 Topics in Japanese Literature in Translation  3 s.h.
JPNS:3205 Major Authors in Modern Japanese Literature  3 s.h.
JPNS:3206/CL:3206 Warriors Dreams  3 s.h.
JPNS:3210 Japanese Theater  3 s.h.
JPNS:3401 Language in Japanese Society  3 s.h.
JPNS:3402 Japan: Culture and Communication  3 s.h.
JPNS:3601 Contemporary Japanese Culture  3 s.h.
JPNS:4201/CL:4201 The Tale of Genji  3 s.h.
PHIL:3845 Buddhist Philosophy  3 s.h.
POLI:3408 Chinese Politics and Society  3 s.h.
POLI:3414/ASIA:3414 Government and Politics of the Far East  3 s.h.
RELS:1404/ASIA:1040 Living Religions of the East  3 s.h.
RELS:1506/ASIA:1060 Introduction to Buddhism  3 s.h.
RELS:1610/JPNS:1115 Japanese Religions  3 s.h.
RELS:3431/GWSS:3131 Gender and Sexuality in Asia  3 s.h.
RELS:3560/ASIA:3560 Topics in Asian Religions  3 s.h.
RELS:3572/ASIA:3890 Comparative Ritual  3 s.h.
RELS:3575/ASIA:3775 East Meets West: The Western Reception of Eastern Religion  3 s.h.
RELS:3645/PHIL:3845 Buddhist Philosophy  3 s.h.
RELS:3655/ASIA:3655 Zen Buddhism  3 s.h.
RELS:3660/JPNS:3660 Japanese Religion and Thought  3 s.h.
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**European Studies Track**

Students must complete a minimum of 18 s.h. for the track, chosen from the following list. They must include at least 12 s.h. in courses numbered 3000 or above.

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<td>Beautiful Souls and Scandalous Writing</td>
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GWSS:2651/CLSA:2651 Gender and Sexuality in the Ancient World 3 s.h.
GWSS:4427/HIST:4427 Society and Gender in Europe 1200-1789 3 s.h.
HIST:1425/RELS:1225 Medieval Religion and Culture 3 s.h.
HIST:2465 Europe Since 1945 3 s.h.
HIST:3112/PHIL:3112 Medieval Philosophy 3 s.h.
HIST:3143 International Politics: The History of the Present 3-4 s.h.
HIST:3145 Europe and the U.S. in the Twentieth Century 3 s.h.
HIST:3409/MDVL:3409 Medieval Civilization I 3 s.h.
HIST:3410/MDVL:3410 Medieval Civilization II 3 s.h.
HIST:3436/CLSA:3836 Food in Ancient Mediterranean Society 3 s.h.
HIST:4133 The Rise of Modern Science 3 s.h.
HIST:4148 Global History as Local History: European Immigration in Iowa 3-4 s.h.
HIST:4289/AINS:4289 The Atlantic World c. 1450-1850 3 s.h.
HIST:4400/CLSA:4400 The Roman Empire 3 s.h.
HIST:4401/CLSA:4101 Ancient Egypt and the Ancient Near East 3 s.h.
HIST:4403 Alexander the Great 3 s.h.
HIST:4404 The World of Ancient Greece 3 s.h.
HIST:4406/CLSA:4106 Warfare in Ancient Mediterranean Society 3 s.h.
HIST:4407 The Hellenistic World and Rome 3 s.h.
HIST:4408/MDVL:4408 The Twelfth-Century Renaissance 3 s.h.
HIST:4411/MDVL:4411 Economic and Social History of Medieval Europe 3 s.h.
HIST:4412/MDVL:4412 History of the Medieval Church 3 s.h.
HIST:4417/MDVL:4417 Medieval Intellectual History 300-1150 3 s.h.
HIST:4419 Ancient and Medieval Science 3 s.h.
HIST:4421/MDVL:4421 The Middle Ages in Film 3 s.h.
HIST:4423/MDVL:4423 Ireland in the Early Middle Ages 3 s.h.
HIST:4426/MDVL:4426 Women, Power, and Society in Medieval Europe 3 s.h.
HIST:4428 Nineteenth-Century Europe 3 s.h.
HIST:4431 Early Modern England 3 s.h.
HIST:4435 War and Society in Modern Europe 3 s.h.
HIST:4438 Modern European Imperialism 3 s.h.
HIST:4441 Special Topics in European History 3 s.h.
HIST:4460 Twentieth-Century Europe: The Nazi Era 3 s.h.
HIST:4461 Twentieth-Century Europe: The Cold War and After 3 s.h.
HIST:4464 Modern France 1789-1871 3 s.h.
HIST:4465 Modern France 1870-Present 3 s.h.
HIST:4466/FREN:4466 France and Algeria from Pirates to Terrorism 3 s.h.
HIST:4470 France from 1815-Present 3 s.h.
HIST:4473 German History 1648-1914 3 s.h.
HIST:4475 Germany Since 1914: Weimar, Hitler, and After 3-4 s.h.
HIST:4477 Napoleon and His Afterlives 3 s.h.
HIST:4478 Holocaust in History and Memory 3 s.h.
HIST:4485 Modern Britain: The Nineteenth Century 3 s.h.
HIST:4486 Modern Britain: The Twentieth Century 3 s.h.
HIST:4499 First World War 3-4 s.h.
HIST:4910/UICB:4910 The Book in the Middle Ages 3 s.h.
HIST:4920/UICB:4920/SLIS:4920 The Transition from Manuscript to Print 3 s.h.
ITAL:2550 Images of Modern Italy 3-4 s.h.
ITAL:4350 Studies in Italian Language 3 s.h.
ITAL:4633 Medieval Italian Literature 3 s.h.
ITAL:4634 Medieval and Renaissance Italian Literature 3 s.h.
ITAL:4667 Modern Italian Fiction 3 s.h.
ITAL:4668 Modern Italian Poetry and Drama 3 s.h.
LING:3080 History of the English Language 3 s.h.
MUS:3004/DPA:3004 World of the Beatles 3 s.h.
PHIL:2111 Ancient Philosophy 3 s.h.
PHIL:2214 Seventeenth-Century Philosophy 3 s.h.
PHIL:2215 Modern Philosophy 3 s.h.
PHIL:2343 Philosophy East and West 3 s.h.
PHIL:2432 Introduction to Political Philosophy 3 s.h.
PHIL:2435 Philosophy of Law 3 s.h.
PHIL:3112/HIST:3112 Medieval Philosophy 3 s.h.
PHIL:3143 Existentialism and Freedom 3 s.h.
PHIL:3318 Twentieth-Century Philosophy 3 s.h.
PHIL:4153 Aristotle 3 s.h.
PHIL:4258 Descartes 3 s.h.
PHIL:4260 Spinoza and Leibniz 3 s.h.
PHIL:4346 Frege and Russell 3 s.h.
PHIL:4377 Wittgenstein 3 s.h.
PHIL:4482 History of Ethics 3 s.h.
POLI:3305 Modern Political Theory 3 s.h.
POLI:3401 European Union 3 s.h.
POLI:3412 Government and Politics of Europe 3 s.h.
POLI:3416 France in the 21st Century 3 s.h.
PORT:3500 Introduction to Portuguese Literature 3 s.h.
PORT:4100 Topics in Luso-Brazilian Culture 3 s.h.
Global Artistic Tradition and Change Track

Students must complete a minimum of 18 s.h. for the track, chosen from the following list. They must include at least 12 s.h. in courses numbered 3000 or above.

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<td>Masterpieces: Art in Historical and Cultural Perspectives</td>
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<td>Themes in Global Art</td>
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<td>Arts of Africa</td>
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<td>From Cave Paintings to Cathedrals: Survey of Western Art I</td>
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<td>Earthly Paradies: A Global History of Gardens</td>
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<td>Chinese Painting I: Pagodas and Palaces</td>
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<td>India Beat: The Aesthetics and Politics of India Today</td>
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<td>Major Texts of World Literature, Antiquity to 1700</td>
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<td>Major Texts of World Literature, 1700 to the Present</td>
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<td>Ukraine, a Country at the Crossroads: An Interdisciplinary Seminar on Ukrainian History and Culture</td>
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<td>Romani (Gypsy) Cultures of Eastern Europe</td>
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<td>City as Text/Text as City</td>
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<td>Greek Tragedy, Comedy, and the Invention of Democracy</td>
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<td>Archaic and Classical Periods I</td>
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<td>Archaic and Classical Periods II</td>
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<td>Latin Literature of the Republic I</td>
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<td>Latin Literature of the Republic II</td>
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<td>CLS:3003</td>
<td>Latin Literature of the Empire I</td>
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Global Health Studies Track

Students must complete a minimum of 18 s.h. for the track, chosen from the following list. They must include at least 12 s.h. in courses numbered 3000 or above.
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<td>Understanding Health and Disease in Africa</td>
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<td>ANTH:2164</td>
<td>Culture and Healing for Future Health Professionals</td>
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<td>ANTH:2181</td>
<td>The Anthropology of Aging</td>
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<td>Anthropological Perspectives on Human Infectious Disease: Origins and Evolution</td>
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<td>Medical Anthropology</td>
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<td>The Anthropology of the Beginnings and Ends of Life</td>
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<td>ANTH:3126</td>
<td>Anthropology of Caregiving and Health</td>
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<td>ANTH:3128</td>
<td>Infectious Disease and Human Evolution</td>
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<td>Design With the Developing World</td>
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<td>CLSA:1181/GHS:1181</td>
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<td>ECON:3760</td>
<td>Health Economics</td>
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<td>Human Dimensions of Climate</td>
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<td>Hungry Planet: Global Geographies of Food</td>
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<td>Hazards and Society</td>
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<td>Health and Environment: GIS Applications</td>
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<td>Environmental Impact Analysis</td>
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<td>Identifying and Developing a Global Health Project</td>
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<td>Proseminar in Global Health</td>
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<td>Global Health Conference</td>
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<td>Studies in Complementary and Alternative Medicine</td>
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<td>Health of Indigenous Peoples</td>
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<td>Health Care and Health Reforms in Russia</td>
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<td>Global Health Seminar</td>
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<td>Promoting Health Globally</td>
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<td>Topics in Global Health</td>
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<td>History of Public Health</td>
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<td>Health Experience of Immigrants, Migrants, and Refugees</td>
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</table>

**Global Resources and the Environment Track**

Students must complete a minimum of 18 s.h. for the track, chosen from the following list. They must include at least 12 s.h. in courses numbered 3000 or above.

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<td>Native Histories and Endurance in the Greater Midwest</td>
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<td>ANTH:3112</td>
<td>Environmentalisms</td>
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<tr>
<td>ANTH:4130</td>
<td>Religion and Environmental Ethics</td>
<td>3 s.h.</td>
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<tr>
<td>CEE:3141/GHS:3141</td>
<td>Design With the Developing World</td>
<td>3 s.h.</td>
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<td>CL:3222</td>
<td>City as Text/Text as City</td>
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<tr>
<td>ECON:3625/URP:3135</td>
<td>Environmental and Natural Resource Economics</td>
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<td>GEOG:1020</td>
<td>The Global Environment</td>
<td>3 s.h.</td>
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<td>GEOG:1060</td>
<td>Geography of Asia: From Japan to Pakistan</td>
<td>3 s.h.</td>
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<td>GEOG:1070</td>
<td>Contemporary Environmental Issues</td>
<td>3 s.h.</td>
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<td>GEOG:1090</td>
<td>Globalization and Geographic Diversity</td>
<td>3 s.h.</td>
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<tr>
<td>GEOG:2110</td>
<td>Population Geography: Societies in Flux</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>GEOG:2130</td>
<td>World Cities</td>
<td>3 s.h.</td>
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<td>GEOG:2410</td>
<td>Environment and Development</td>
<td>3 s.h.</td>
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<tr>
<td>GEOG:3070/GHS:3070</td>
<td>Hungry Planet: Global Geographies of Food</td>
<td>3 s.h.</td>
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<td>GEOG:3750</td>
<td>Environmental Quality: Science, Technology, and Policy</td>
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<td>GEOG:3760</td>
<td>Hazards and Society</td>
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<td>GEOG:3780</td>
<td>U.S. Energy Policy in Global Context</td>
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<tr>
<td>GEOG:4750/URP:4750</td>
<td>Environmental Impact Analysis</td>
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<td>GEOG:4770</td>
<td>Environmental Justice</td>
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<tr>
<td>GHS:4340/HHP:4340</td>
<td>Global Health and Global Food</td>
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<td>RELS:3976/AINS:3276</td>
<td>American Indian Environmentalism</td>
<td>3 s.h.</td>
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<tr>
<td>RHET:3700</td>
<td>Advocacy and Sustainability: Crafting Stories of People, Place, and Resilience</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>
Human Rights Track

Students must complete a minimum of 18 s.h. for the track, chosen from the following list. They must include at least 12 s.h. in courses numbered 3000 or above.

AINS:3554 Native Histories and Endurance in the Greater Midwest 3 s.h.
ASIA:1770 Asian Humanities: Middle East 3 s.h.
CLSA:2384 Killers, Crooks, and Deviants: Ancient Law and Society 3 s.h.
EPLS:5104 Education in the Third World 2-3 s.h.
GEOG:4770 Environmental Justice 3 s.h.
GEOG:4960 The Middle East 3 s.h.
GHS:4230 Health Experience of Immigrants, Migrants, and Refugees 3 s.h.
GHS:4600 Global Health and Human Rights 2-3 s.h.
GHS:4380 The Politics of Memory: Holocaust, Genocide, and 9/11 3-4 s.h.
GWSS:3010/GHS:3015 Transnational Sexualities 3 s.h.
GWSS:3157/HIST:3157 Gender, Sexuality, and Human Rights 3 s.h.
HIST:4101 History of Human Rights 3 s.h.
HIST:4105 World Events in Historical Context 3 s.h.
HIST:4232 United States in World Affairs 3-4 s.h.
HRTS:2115 Introduction to Human Rights 3 s.h.
HRTS:3900 Child Labor and International Human Rights 3 s.h.
HRTS:3905 Topics in Human Rights 1-3 s.h.
HRTS:3915 Human Rights and the Arts 3 s.h.
JMC:3300 Media Law and Communication 3 s.h.
LAW:8570 Human Rights in the World Community 1-3 s.h.
LAW:8698 Law in the Muslim World 2-3 s.h.
LING:1040/ANTH:1040 Language Rights 3 s.h.
PHIL:1034 Liberty and the Pursuit of Happiness 3 s.h.
PHIL:2429 War, Terrorism, and Torture 3 s.h.
PHIL:3430 Philosophy of Human Rights 3 s.h.
PHIL:4482 History of Ethics 3 s.h.
POLI:3513 Politics of International Human Rights Law 3 s.h.
RELS:1021 Judaism: The Sacred and the Secular 3 s.h.
RELS:1810 Longing for Freedom 3 s.h.
RELS:2775 The Bible and the Holocaust 3 s.h.
RELS:2962 Islam in the Public Sphere: Arts, Literature, Culture, and Politics 3 s.h.
RELS:3808/AFAM:3500 Malcolm X, King, and Human Rights 3 s.h.
RELS:3855 Human Rights and Islam 3 s.h.
SOAS:3500 Queerness in South Asian Literature and Cinema 3 s.h.
SOC:2430 Comparative Criminal Justice Systems 3 s.h.
SOC:3415 Global Criminology 3 s.h.
WLLC:3185 Global Women's Cinema 3 s.h.

International Business Track

Students must complete a minimum of 18 s.h. for the track, chosen from the following list. They must include at least 12 s.h. in courses numbered 3000 or above.

IS:3200 Political Economy of International Development 3 s.h.
AMST:3051 The Office: Business Life in America 3 s.h.
ANTH:2100 Anthropology and Contemporary World Problems 3 s.h.
CHIN:3103 Business Chinese I 3 s.h.
CHIN:3104 Business Chinese II 3 s.h.
CHIN:3260 Conversational Business Chinese 3 s.h.
COMM:2042 Intercultural Communication 3 s.h.
COMM:4131/IS:4131 Globalization and Culture Communication 3 s.h.
COMM:4142 Advanced Intercultural Communication 3 s.h.
ECON:3345 Global Economics and Business 3 s.h.
ECON:3620 Economic Growth and Development 3 s.h.
ECON:3625 Environmental and Natural Resource Economics 3 s.h.
ECON:4110 International Economics 3 s.h.
ENTR:4460 Entrepreneurship and Global Trade 3 s.h.
FIN:4240 International Finance 3 s.h.
FREN:1510 Cultural Misunderstandings: France and U.S.A. 3 s.h.
FREN:3410 Business French 3 s.h.
GEOG:1070 Contemporary Environmental Issues 3 s.h.
GEOG:2130 World Cities 3 s.h.
GEOG:2910 The Global Economy 3 s.h.
GRMN:2720 Germany in the World 3-4 s.h.
GRMN:3214 Business German 3 s.h.
HIST:3126 History of Globalization 3 s.h.
HIST:4105 World Events in Historical Context 3 s.h.
HIST:4232 United States in World Affairs 3-4 s.h.
JPNS:3500 Business Japanese I 3 s.h.
MGMT:3450 International Business Environment 3 s.h.
MKTG:4300 International Marketing 3 s.h.
POLI:3502 Politics and the Multinational Enterprise 3 s.h.
POLI:3516 The Politics of International Economics 3 s.h.
PORT:3130 Business Portuguese 3 s.h.
SPAN:3040 Business Spanish 3 s.h.
SPAN:3080 Advanced Business Spanish 3 s.h.
**International Communication and Information Track**

Students must complete a minimum of 18 s.h. for the track, chosen from the following list. They must include at least 12 s.h. in courses numbered 3000 or above.

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<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>IS:2042/COMM:2042/SSW:2042</td>
<td>Intercultural Communication</td>
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<tr>
<td>ANTH:1401</td>
<td>Language, Culture, and Communication</td>
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<tr>
<td>ASIA:1135</td>
<td>Korean Language in Culture and Society</td>
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<td>CHIN:3201</td>
<td>Workshop in Chinese Literary Translation</td>
<td>3 s.h.</td>
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<td>CL:1500/SLAV:1500</td>
<td>Ukraine, a Country at the Crossroads: An Interdisciplinary Seminar on Ukrainian History and Culture</td>
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<tr>
<td>COMM:1174</td>
<td>Media and Society</td>
<td>3 s.h.</td>
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<td>COMM:2071</td>
<td>Communication and Critical/ Cultural Studies</td>
<td>3 s.h.</td>
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<td>COMM:2086</td>
<td>Global Media Studies</td>
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<td>COMM:4131</td>
<td>Globalization and Culture</td>
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<td>COMM:4142</td>
<td>Advanced Intercultural Communication</td>
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<td>COMM:4152</td>
<td>Latin American Media</td>
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<td>COMM:4173</td>
<td>Social Media, Culture, and Politics</td>
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<tr>
<td>COMM:4174</td>
<td>Communication, Technology, and National Security</td>
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<td>EPLS:5104</td>
<td>Education in the Third World</td>
<td>2-3 s.h.</td>
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<td>FREN:1510</td>
<td>Cultural Misunderstandings: France and U.S.A.</td>
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<td>FREN:4890/TRNS:4497</td>
<td>Techniques of Translation</td>
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<td>GRMN:3555</td>
<td>Image of America in German Literature and Film</td>
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<td>GRMN:3807</td>
<td>Introduction to German Linguistics</td>
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<td>GRMN:3865</td>
<td>History of the German Language</td>
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<td>HIST:4105</td>
<td>World Events in Historical Context</td>
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<td>ITAL:4350</td>
<td>Studies in Italian Language</td>
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<td>IWP:3191</td>
<td>International Literature Today</td>
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<td>JMC:3130</td>
<td>Comparative Communication Systems</td>
<td>3 s.h.</td>
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<td>JMC:3155</td>
<td>Law, Media, and Current Issues</td>
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<td>JMC:3160</td>
<td>Images and Society</td>
<td>3 s.h.</td>
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<td>JMC:3300</td>
<td>Media Law and Communication</td>
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<tr>
<td>JPN:3201</td>
<td>Workshop in Japanese Literary Translation</td>
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<td>JPN:3401</td>
<td>Language in Japanese Society</td>
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<td>JPN:3402</td>
<td>Japan: Culture and Communication</td>
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<td>LING:1010</td>
<td>Language and Society</td>
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<td>LING:1020</td>
<td>Introduction to the Study of Language</td>
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<td>LING:1060</td>
<td>Languages of the World</td>
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<td>LING:2900</td>
<td>Language and Gender</td>
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<td>POLI:1600</td>
<td>Introduction to Political Communication</td>
<td>3 s.h.</td>
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<td>POLI:3515</td>
<td>Global Communication and Politics</td>
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<td>RELS:2289/CLSA:2489</td>
<td>Jerusalem: The Holy City</td>
<td>3 s.h.</td>
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<td>RHET:3700</td>
<td>Advocacy and Sustainability: Crafting Stories of People, Place, and Resilience</td>
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<td>SPAN:2030</td>
<td>Study of Language: Myths and Concepts</td>
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<td>SPAN:3020</td>
<td>Journalistic Writing in Spanish</td>
<td>3 s.h.</td>
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<td>SPAN:3030</td>
<td>Translation Workshop: English to Spanish</td>
<td>3 s.h.</td>
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<td>SPAN:3050</td>
<td>Translation Workshop: Spanish to English</td>
<td>3 s.h.</td>
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<td>SPAN:3100</td>
<td>Structures of Spanish: Words and Sentences</td>
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<td>SPAN:3130</td>
<td>Introduction to Bilingualism</td>
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<td>SPAN:3150</td>
<td>Spanish Applied Linguistics</td>
<td>3 s.h.</td>
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<td>SPAN:4370</td>
<td>Literature and Mass Culture in Latin America</td>
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<td>TRNS:4940</td>
<td>Journalistic Narrative</td>
<td>3 s.h.</td>
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<tr>
<td>TRNS:3480</td>
<td>Literature and Translation</td>
<td>3 s.h.</td>
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</tbody>
</table>

**Islamic and Middle Eastern Studies**

Students must complete a minimum of 18 s.h. for the track, chosen from the following list. They must include at least 12 s.h. in courses numbered 3000 or above.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ANTH:3242</td>
<td>Archaeology of the Middle East— Prehistory and Early History</td>
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<tr>
<td>ANTH:3275/CLSA:3596</td>
<td>The Archaeology of Ancient Egypt</td>
<td>3 s.h.</td>
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<td>ARAB:1050</td>
<td>Topics in Middle East/Muslim World Studies I</td>
<td>3 s.h.</td>
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<tr>
<td>ARAB:2025</td>
<td>Study Abroad: Culture and Society</td>
<td>1 s.h.</td>
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<td>ARAB:2050</td>
<td>Topics in Middle East/Muslim World Studies II</td>
<td>3 s.h.</td>
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<td>ARAB:3050</td>
<td>Arab Culture Through Dialects</td>
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<td>ARTH:3320</td>
<td>Egyptian Art</td>
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<td>ARTH:3325</td>
<td>Kings, Gods, and Heroes: Art of the Ancient Near East</td>
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<td>ASIA:1770</td>
<td>Asian Humanities: Middle East</td>
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<td>CLSA:1181/GHS:1181</td>
<td>Ancient Medicine</td>
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<td>CLSA:2482</td>
<td>Ancient Mediterranean Religions</td>
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<td>CLSA:3144/HIST:3405</td>
<td>Engineering and Technology in the Ancient Mediterranean</td>
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<tr>
<td>CLSA:3445/RELS:3245</td>
<td>Mythology of Otherworldly Journeys</td>
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<td>CLSA:3836/HIST:3436</td>
<td>Food in Ancient Mediterranean Society</td>
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<td>CLSA:4181</td>
<td>History of Western Medicine</td>
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<td>GEOG:4960</td>
<td>The Middle East</td>
<td>3 s.h.</td>
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<td>GRMN:2650</td>
<td>German Nationalism After WWII</td>
<td>3-4 s.h.</td>
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<td>HIST:2461/RELS:2361/CLSA:2461</td>
<td>Middle East and Mediterranean: Alexander to Suleiman</td>
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<td>HIST:2462</td>
<td>Middle East and Mediterranean: Saladin to Napoleon</td>
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<tr>
<td>HIST:4401/CLSA:4101</td>
<td>Ancient Egypt and the Ancient Near East</td>
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<tr>
<td>HIST:4419</td>
<td>Ancient and Medieval Science</td>
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</tbody>
</table>
Students must complete a minimum of 18 s.h. for the track, chosen from the following list. They must include at least 12 s.h. in courses numbered 3000 or above.

**Latin American Studies Track**

Students must complete a minimum of 18 s.h. for the track, chosen from the following list. They must include at least 12 s.h. in courses numbered 3000 or above.

**ANTH:**
- 2110 Latin American Economy and Society 3 s.h.
- 2220 Archaeology of Mesoamerica 3 s.h.
- 3111/GHS:3040 Health in Mexico 3 s.h.

**ARTH:**
- 3120 The Art of Ancient Mexico 3 s.h.

**CINE:**
- 2624 Introduction to Latin American Film 3 s.h.

**CL:**
- 2700 Romani (Gypsy) Cultures of Eastern Europe 3 s.h.

**COMM:**
- 4152 Latin American Media 3 s.h.

**DANC:**
- 1150 Brazilian Culture and Carnival 3 s.h.

**ENGL:**
- 3525 Literature and Culture of the Americas 3 s.h.
- 3535 Inter-American Studies 3 s.h.

**HIST:**
- 4216 Mexican American History 3 s.h.
- 4217 Latina/o Immigration 3 s.h.
- 4334 Topics in American Borderlands History 3 s.h.
- 4501 Society and Revolution in Cuba 3 s.h.
- 4502/AINS:4502 History of Mexico 3 s.h.
- 4505 Topics in Latin American History 3 s.h.
- 4508 Medicine and Public Health in Latin America, 1820-2000 3 s.h.
- 4510 Colonial Latin America 3 s.h.
- 4515 Introduction to Modern Latin America 3 s.h.
- 4520 Latin America and the U.S.: The Historical Perspective 3 s.h.
- 4525 Latin American Revolution 3 s.h.
- 4526 Dictatorships of Latin America 3 s.h.
- 4527/4537/4547 Latin America in the 20th Century 3 s.h.
- 4529 Latin American Development and Society 3 s.h.

**HUMAN RIGHTS:**
- 2051 Women in Latin America, Comparative Perspective 3 s.h.
- 2052 Women in Latin America, Latin American Perspective 3 s.h.

**HUMANITIES:**
- 2051 Women in Latin America, Comparative Perspective 3 s.h.
- 2052 Women in Latin America, Latin American Perspective 3 s.h.

**LAW:**
- 8698 Law in the Muslim World 3 s.h.

**LAS:**
- 2700/IS:2700/SPAN:2700/PORT:2700 Introduction to Latin American Studies 3 s.h.

**MUS:**
- 2311 Music of Latin America and the Caribbean 3 s.h.

**POLI:**
- 2415 Latin American Politics 3 s.h.
- 3104 Immigration Politics 3 s.h.
- 3106/CPA:3106 Immigration and Societal Change 3 s.h.
- 3106/CPA:3106 Immigration and Societal Change 3 s.h.
- 3106/CPA:3106 Immigration and Societal Change 3 s.h.
- 3106/CPA:3106 Immigration and Societal Change 3 s.h.

**PORT:**
- 2800/BZ:2800 Brazilian Literature Before 1900 3 s.h.
- 3350 Brazilian Literature Before 1900 3 s.h.
- 3400 Brazilian Literature After 1900 3 s.h.
- 4100 Topics in Luso-Brazilian Culture 3 s.h.
- 4100 Topics in Luso-Brazilian Culture 3 s.h.

**SLAV:**
- 3124 Invitation to Nabokov 3 s.h.
- 3320 Modern Slavic History 3 s.h.
- 3343 Contemporary Slavic Studies 3 s.h.
- 3343 Contemporary Slavic Studies 3 s.h.
- 3343 Contemporary Slavic Studies 3 s.h.

**SPAN:**
- 1800 Contemporary Spanish American Narrative 3 s.h.
- 1900 Contemporary Spanish American Literature 3 s.h.
- 2000 Contemporary Spanish American Literature 3 s.h.
- 2200 Introduction to Spanish American Cultures 3 s.h.
- 2500 Readings in Spanish American Literature 3 s.h.
- 2800 Screening Latin America 3 s.h.
- 2900 Music of the Hispanic World 3 s.h.
- 3000 Cultures of Spanish America 3 s.h.
- 3220 Visual Culture: Colonial Spanish America 3 s.h.

**WLLC:**
- 3834 Arab Spring in Context: Media, Literature, Culture, and Politics 3 s.h.
- 3834 Arab Spring in Context: Media, Literature, Culture, and Politics 3 s.h.
- 3834 Arab Spring in Context: Media, Literature, Culture, and Politics 3 s.h.
- 3834 Arab Spring in Context: Media, Literature, Culture, and Politics 3 s.h.
- 3834 Arab Spring in Context: Media, Literature, Culture, and Politics 3 s.h.

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Students must complete a minimum of 18 s.h. for the track, chosen from the following list. They must include at least 12 s.h. in courses numbered 3000 or above.

**Russian, East European, and Eurasian Studies Track**

Students must complete a minimum of 18 s.h. for the track, chosen from the following list. They must include at least 12 s.h. in courses numbered 3000 or above.

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<td>Nazi and Stalinist Art: Aesthetics of Power</td>
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<tr>
<td>CL:1500/SLAV:1500</td>
<td>Ukraine, a Country at the Crossroads: An Interdisciplinary Seminar on Ukrainian History and Culture</td>
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<td>HIST:4493</td>
<td>Soviet Union 1917-1945</td>
<td>3-4 s.h.</td>
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<td>POLI:1401</td>
<td>Introduction to the Politics of Russia and Eurasia</td>
<td>3 s.h.</td>
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<td>POLI:3410</td>
<td>Russian Foreign Policy</td>
<td>3 s.h.</td>
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<td>SLAV:1131</td>
<td>Introduction to Russian Culture</td>
<td>3 s.h.</td>
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<td>SLAV:1132</td>
<td>Russia Today</td>
<td>3 s.h.</td>
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<td>SLAV:1450</td>
<td>Diversities of Eastern Europe: Culture, Art, and Politics</td>
<td>3 s.h.</td>
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<td>SLAV:1531</td>
<td>Slavic Folklore</td>
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<td>Religion and Culture of Slavs</td>
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<td>SLAV:2100</td>
<td>Secrets of Russian Mentality</td>
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<td>SLAV:2122</td>
<td>Cult Films of the Last Soviet Generation</td>
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<td>SLAV:2131</td>
<td>Women in Russian Society</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>SLAV:2531</td>
<td>Topics in Russian, East European, and Eurasian Studies</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>SLAV:3082</td>
<td>Youth Subcultures After Socialism</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>SLAV:3100</td>
<td>East and West: Women in the Slavic World</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>SLAV:3122/CL:3122</td>
<td>Tolstoy and Dostoevsky</td>
<td>3-4 s.h.</td>
</tr>
<tr>
<td>SLAV:3124</td>
<td>Invitation to Nabokov</td>
<td>3-4 s.h.</td>
</tr>
</tbody>
</table>
SLAV:3131/GHS:3131 Health Care and Health Reforms in Russia 3 s.h.
SLAV:3202/CL:3302 Russian Literature in Translation 1860-1917 3 s.h.
SLAV:3221/CL:3221 Twentieth-Century Czech Authors 3 s.h.
SLAV:3250 Readings in Russian Literature 3 s.h.

**South Asian Studies Track**

Students must complete a minimum of 18 s.h. for the track, chosen from the following list. They must include at least 12 s.h. in courses numbered 3000 or above.

**ANTH:**2108/GWSS:2108 Gendering India 3 s.h.
**ANTH:**3121/GWSS:3121 Love and Kinship in South Asia 3 s.h.
**ASIA:**2450 India Beat: The Aesthetics and Politics of India Today 3 s.h.
**ASIA:**3890/RELS:3572 Comparative Ritual 3 s.h.
**ASIA:**4606/CINE:4606 Topics in Asian Cinema 3 s.h.
**ENGL:**3540 Literature of the Indian Subcontinent 3 s.h.
**ENGL:**3570/CL:3570 Transnational and Postcolonial Writing by Women 3 s.h.
**ENGL:**3590 People on the Move 3 s.h.
**EPLS:**5104 Education in the Third World 2-3 s.h.
**GEOG:**1060 Geography of Asia: From Japan to Pakistan 3 s.h.
**HIST:**2606/ASIA:2606 Civilizations of Asia: South Asia 3-4 s.h.
**HIST:**2609 India Now! A Survey from Bollywood Films to Global Terror 3 s.h.
**HIST:**4605 Disease, Politics, and Health in South Asia 2-4 s.h.
**HIST:**4640 Imperialism and Modern India 3 s.h.
**HIST:**4724 Crossing the Indian Ocean 3 s.h.
**RELS:**1404/ASIA:1040 Living Religions of the East 3 s.h.
**RELS:**1410 Introduction to Indian Religions 3 s.h.
**RELS:**1506/ASIA:1060 Introduction to Buddhism 3 s.h.
**RELS:**3448 The Allure of Krishna: Sacred Sexuality in Indian Culture 3 s.h.
**RELS:**3560/ASIA:3560 Topics in Asian Religions 3 s.h.
**RELS:**3775/ASIA:3775 East Meets West: The Western Reception of Eastern Religion 3 s.h.
**RELS:**3580 Religion and Healing 3 s.h.
**SOAS:**1502/RELS:1502 Asian Humanities: India 3 s.h.
**SOAS:**3500 Queerness in South Asian Literature and Cinema 3 s.h.

**Four-Year Graduation Plan**

The following checkpoints list the minimum requirements students must complete in order to stay on the University's Four-Year Graduation Plan.

Note: Students who intend to study abroad during their junior year should schedule an appointment during their fourth semester to meet with an advisor from Study Abroad; those who intend to study abroad during their senior year should schedule an appointment during their sixth semester.

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**Before the fifth semester begins:** At least the two introductory courses and one foundation course.

**Before the seventh semester begins:** At least nine courses in the major and at least 90 s.h. earned toward the degree.

**Before the eighth semester begins:** At least 12 courses in the major, including the required research preparation course for program option B students or the first writing course for program option C students.

**During the eighth semester:** Enrollment in all remaining course work in the major, all remaining general education courses, and a sufficient number of semester hours to graduate.

### Iowa Degree in Three

University of Iowa majors who are strongly motivated can graduate with a degree in three years under the Iowa Degree in Three. The program is available to students who can complete more semester hours each term than they would on the Four-Year Graduation Plan.

Students sign an agreement during their first semester of enrollment; meet with an advisor at least once a semester to review their plans and progress; take courses during summer sessions, if necessary; meet specific course checkpoints; and maintain the grade-point average required for the major.

Students are allowed to bring Advanced Placement (AP), College Level Examination Program (CLEP), or transfer credit upon admission to reduce the number of semester hours required for their degree. They should consult their advisor about the program.

### Honors in the Major

Students majoring in international studies have the opportunity to graduate with honors in the major. International studies honors students must maintain a cumulative University of Iowa g.p.a. of at least 3.33 and a g.p.a. of at least 3.33 in all course work for the major and in all course work that may be applied to the major.

To graduate with honors in the major, students must complete a minimum of 45 s.h. for the major (an additional 3 s.h.), including at least 15 s.h. in courses numbered 3000 or above and at least 6 s.h. in courses designated as honors courses. Students may meet this requirement in one of two ways. They may complete 21 s.h. in a single track, with at least 15 s.h. in courses numbered 3000 or above. Alternatively, students may select courses from two tracks, completing at least 12 s.h. in the first track, including 9 s.h. in courses numbered 3000 or above; and completing at least 9 s.h. in the second track, including 6 s.h. in courses numbered 3000 or above.

Honors students completing the Certificate in Global Health Studies, International Business, or Latin American Studies or the minor in global health studies or Latin American studies may not choose an international studies track that corresponds with those certificate(s) or minor(s). Those who choose the two-track option may not choose a first track that corresponds with those certificate(s) or minor(s).

Honors students must choose program option B for the major. Instead of taking IS:4990 International Studies Senior Project, they take IS:4991 Honors Thesis in...
International Studies and present their research in a poster session.

In addition to pursuing honors in their majors, undergraduate students have a variety of opportunities for honors study and activities through membership in the University of Iowa Honors Program. Learn about the program by visiting Honors at Iowa.

**Minor**

The minor in international studies requires a minimum of 15 s.h. in courses approved for the international studies major, including 12 s.h. in courses numbered 3000 or above taken at the University of Iowa. The minor must include IS:2000 Introduction to International Studies or one of the major's foundation courses. Students must maintain a g.p.a. of at least 2.00 in all courses for the minor and in all UI courses for the minor. Course work in the minor may not be taken pass/nonpass. To preserve the interdisciplinary nature of the minor, students may count a maximum of 6 s.h. from a single department or program, from the Tippie College of Business, or from a major, another minor, or a certificate toward the minor in international studies.

**Courses**

### Lower-Level Undergraduate

**IS:1000 Designing Your International Studies Major**

1 s.h.

Importance of interdisciplinarity, global perspectives, and world language study for 21st-century liberal education; intentional planning of courses and other out-of-class experiences to prepare students for life and career after college.

**IS:1101 Cultural Anthropology**

3 s.h.

Comparative study of culture, social organization. GE: Social Sciences; Values, Society, and Diversity. Same as ANTH:1101.

**IS:2000 Introduction to International Studies**

3 s.h.

Introduction to the interdisciplinary field of international studies. GE: International and Global Issues.

**IS:2009 World Travel: Cross-Cultural Skills for International Business, Education, and Service**

1-3 s.h.

Cross-cultural skills and ethics for international business, education, and service.

**IS:2012 Issues in International Studies**

1 s.h.

Modules focusing on varied topics, taught by international studies faculty members.

**IS:2013 Issues in International Studies**

1-3 s.h.

Modules focusing on varied topics, taught by international studies faculty members.

**IS:2014 Germany and the Amanas**

1 s.h.

Contemporary issues of Germany, patterns of immigration to Amana, Iowa.

**IS:2015 Poland and the Czech Republic**

1 s.h.

Contemporary issues of Poland, the Czech Republic, and Slovakia; immigration paths to the United States, and Iowa settlements.

**IS:2016 The Netherlands and Pella**

1 s.h.

History and culture of the Netherlands; immigration pattern of the Dutch who came to Pella, Iowa.

**IS:2042 Intercultural Communication**

3 s.h.

Culture defined as a system of taken-for-granted assumptions about the world that influence how people think and act; cultural differences that produce challenges and opportunities for understanding and communication; those differences from several theoretical perspectives; opportunities to examine culture and cultural differences in practical, experience-driven ways. Prerequisites: (COMM:1112 or COMM:1170) and (COMM:1117 or COMM:1130) and (COMM:1168 or COMM:1174) and COMM:1301 and COMM:1305. Requirements: g.p.a. of at least 2.30 and completion of four of five Foundations of Communication courses. Same as SSW:2042, COMM:2042.

**IS:2111 Developed and Developing Places**

3 s.h.

Geography and the world distribution of key cultural factors—population, religion, and per capita income; economic and demographic differences between developed and developing countries.

**IS:2112 The European Union**

3 s.h.

Brief history and rationale for the European Union; environmental, economic, social, and political aspects of this potential superpower.

**IS:2115 Introduction to Human Rights**

3 s.h.

Analysis and evaluation of the international human rights program; relationship between human rights and international law. Same as HRTS:2115.

**IS:2600 Muslim Minorities in the West**

3-4 s.h.

Introduction to lives of Muslim immigrants in the USA, France, Germany, and England; examination of various theories on multiculturalism. Taught in English. Same as GRMN:2655.

**IS:2700 Introduction to Latin American Studies**

3 s.h.

Cultures of Latin American countries with emphasis on cultural history and cultural production; interdisciplinary survey. Same as SPAN:2700, PORT:2700, LAS:2700.

### Upper-Level Undergraduate and Graduate

**IS:3009 International Perspectives: Xicotepec**

2-3 s.h.

Introduction to provision of service to a community in a less-developed country; development of discipline-specific projects aimed at improving community life in Xicotepec, Mexico in collaboration with Rotary International; cultural and professional preparation for team work in an international environment; service-learning course requiring travel to Xicotepec, Mexico during spring break.

**IS:3010 Creating a Proposal for International Research**

2 s.h.
Major components of research process; development of intellectually challenging and personally engaging topics of international research. Requirements: junior or higher standing.

IS:3011 Library Strategies for International Research 1 s.h.
Skill development in international research; academic projects; work with research librarian; activity-based introduction to article, statistical, and governmental databases; research and popular materials; information discovery process (tools and search strategies); enhancement of critical thinking skills. Same as ULIB:3011.

IS:3020 Writing Projects in International Studies 1-3 s.h.
Writing project on a subject specified by supervising faculty member; available only in conjunction with a regularly offered course.

IS:3116 Communication-Based Approaches to International Development 3 s.h.
Communication as a vital component for any effort to create social change; necessary communication to reach out to target audiences—people and communities in need—from campaigns persuading communities to change knowledge, attitudes, and practices to aiding other development efforts in areas of health, education, rural development, or sustainable agricultural practices; importance of communication as an integral part to any effort aimed at creating large-scale social change. Same as JMC:3116.

IS:3199 Global Environmental Politics 3 s.h.
Survey of major environmental crises and conflict between environmental groups and their detractors; climate change, global warming, loss of biodiversity, pollution, toxins, nuclear power, deforestation.

IS:3200 Political Economy of International Development 3 s.h.
Overview of development theory and debate: increasing role of China and other new players in development funding and projects; development-oriented projects, career paths.

IS:3400 International Studies Internship 1-3 s.h.
Professional work experience in internationally-focused positions; faculty supervised. Requirements: junior or senior standing in international studies.

IS:3550 Special Topics in International Studies 1-3 s.h.
Special topics related to international studies.

IS:3555 Understanding Health and Disease in Africa 3 s.h.
Cultural, historical, and political framework for the delivery of health care services in African nations. Recommendations: junior or higher standing. Same as GHS:3555, HIST:3755.

IS:3745 Islam in Africa 4 s.h.
African Islamic history beginning with earliest Muslim migrants from Arabia to Ethiopia in early 7th century C.E. to dawn of 21st century; focus on historical development of Islam on African continent, specific regions, and particular themes; part of Islamic Studies Virtual Curriculum and Committee on Institutional Cooperation (CIC) CourseShare Program. Same as HIST:3745, RELS:3845.

IS:3834 Arab Spring in Context: Media, Religion, and Geopolitics 3 s.h.
Protest movements that started in Tunisia in 2011 and swept across North Africa and the Middle East transforming Arab and Islamic societies in radically different ways; function of social media, satellite television, communication technology; influence of religious leaders and groups on some protest outcomes; impact of wealth and geopolitics on social fabric of Islamic societies within and outside Arab countries. Requirements: for COMM:3834 — g.p.a. of at least 2.50, completion of Foundations of Communication requirement, and 6 s.h. of intermediate-level course work. Same as RELS:3834, WLLC:3834, JMC:3146, COMM:3834.

IS:3855 Human Rights and Islam 3 s.h.
Human rights in religious and secular discourse, seventh century to present; Islamic law, human rights law, religion, politics. GE: International and Global Issues. Same as RELS:3855.

IS:3900 Child Labor and International Human Rights 3 s.h.
Complexity of child labor in global, regional, national, and local contexts; international human rights system, current programs and strategies for reducing or eliminating abusive child labor. Same as HRTS:3900.

IS:3905 Topics in Human Rights 1-3 s.h.
Examination of emerging human rights issues from an interdisciplinary and international perspective. Same as HRTS:3905.

IS:3910 Human Rights Advocacy 3 s.h.
Theoretical foundations and critical issues for international human rights advocacy and international humanitarian movements. Same as HRTS:3910.

IS:3990 Independent Study in International Studies arr.
Research on a topic of international significance. Requirements: international studies major.
**IS:4131 Globalization and Culture** 3 s.h.
How context for everyday experience has increasingly become globally determined (e.g., ever-increasing transnational migration of people, spread of American culture, growth of international corporations and trade, rise of international conflict and transnational activism); range of theoretical and critical readings on globalization; various phenomena and perspectives regarding topic; themes directly relevant to lives of modern youth; how globalization affects opportunities and risks, identities and relationships. Prerequisites: (COMM:1112 or COMM:1170) and (COMM:1117 or COMM:1130) and (COMM:1168 or COMM:1174) and COMM:1301 and COMM:1305. Requirements: g.p.a. of at least 2.30, completion of Foundations of Communication requirement, and 6 s.h. of intermediate-level course work. Same as COMM:4131.

**IS:4142 Advanced Intercultural Communication** 3 s.h.
Defining culture as a historically-transmitted, socially-constructed system of meaning enacted in face-to-face interaction and mass media; focus on a specific topic within intercultural communication research and theory (i.e., cultural nature of personal relationships, built environment as culture, intersection of private with public cultural meaning); in-depth follow-up of general approach to intercultural communication covered in lower-level courses. Prerequisites: (COMM:1112 or COMM:1170) and (COMM:1117 or COMM:1130) and (COMM:1168 or COMM:1174) and COMM:1301 and COMM:1305. Requirements: for COMM:4142 — COMM:1112 or COMM:1170, COMM:1301, COMM:1305, COMM:1117 or COMM:1130, COMM:1168 or COMM:1174, g.p.a. of at least 2.50, completion of Foundations of Communication requirement, and 6 s.h. of intermediate-level course work. Same as COMM:4142.

**IS:4653 Law and Society in Late Imperial and Modern China** 3 s.h.
Survey of legal system of China and Chinese society from 1400 to 1980s. Same as HIST:4653.

**IS:4990 International Studies Senior Project** 3 s.h.
Prerequisites: IS:3010. Requirements: international studies major.

**IS:4991 Honors Thesis in International Studies** 3 s.h.
Prerequisites: IS:3010. Requirements: international studies major.
Journalism and Mass Communication

Director

- David M. Ryfe

Undergraduate major: journalism and mass communication (B.A., B.S.)
Undergraduate minor: mass communication
Graduate degrees: M.A. in journalism; M.A. in strategic communication; Ph.D. in mass communications
Faculty: http://clas.uiowa.edu/sjmc/people/faculty
Web site: http://clas.uiowa.edu/sjmc/

The School of Journalism and Mass Communication offers an undergraduate major and minor as well as graduate degree programs. Undergraduate students in all majors may use approved journalism and mass communication courses to satisfy the General Education Program (p. 313)'s Historical Perspectives, Social Sciences, and Values, Society, and Diversity requirements, and the school's First-Year Seminar is designed specifically for entering undergraduate students. The School of Journalism and Mass Communication also administers the undergraduate Certificates in Event Planning (p. 289) and Fundraising and Philanthropy Communication (p. 301).

Undergraduate Programs of Study

- Major in journalism and mass communication (Bachelor of Arts, Bachelor of Science)
- Minor in mass communication

Media writing and visual storytelling form the core of the undergraduate major in journalism and mass communication. Students are required to take both professional and conceptual courses offered by the school; they develop professional skills while studying the historical, legal, cultural, and institutional roles of media in society. They also complete extensive academic work outside the school, consistent with the University's commitment to the liberal arts and sciences.

The major prepares students for careers in the field. Graduates find employment in a variety of areas, such as public relations, advertising, marketing, political communication, health communication, philanthropy and fundraising communication, newspapers, magazines, radio, television, online communications and social media, publication design, photojournalism, and media research.

The school is accredited by the Accrediting Council on Education in Journalism and Mass Communications. A maximum of 7 s.h. of approved transfer credit may be applied to the major in journalism and mass communication; a maximum of 3 s.h. of approved transfer credit may be applied to the minor in mass communication. Some journalism course work taken at other schools may be used to fulfill the major's elective and/or second area of concentration requirements.

Students who wish to apply transfer credit toward School of Journalism and Mass Communication requirements must discuss the proposed transfer credit with a journalism advisor and must have approval from the head of undergraduate studies.

Bachelor of Arts, Bachelor of Science

The Bachelor of Arts and the Bachelor of Science with a major in journalism and mass communication require a minimum of 120 s.h., including at least 36 s.h. in journalism and mass communication courses, plus a second major or 24 s.h. in a second concentration area. Students must maintain a g.p.a. of at least 2.00 in the major. All students must complete the College of Liberal Arts and Sciences General Education Program.

Students may count a maximum of 48 s.h. earned in School of Journalism and Mass Communication courses (prefix JMC) toward the 120 s.h. required for a B.A. or B.S. degree.

Each student works with an assigned faculty advisor and/or an educational advisor to develop a study plan that meets the major's requirements. Requirements for the major are consistent with the program's accreditation requirements; the school cannot make exceptions.

Students are encouraged, but not required, to use the University's ifolio system to collect and edit their preprofessional work. They will find the portfolio useful as they interact with faculty members in preparation for entering the job market and for presentation in job interviews.

The journalism major (B.A. and B.S.) requires the following course work.

FOUNDATION

Both of these (completed with a grade of C-minus or higher before enrollment in the professional skills courses):

- JMC:1100 Media Uses and Effects 3 s.h.
- JMC:1200 Media History and Culture 3 s.h.

PROFESSIONAL SKILLS COURSES

Both of these (completed with a grade of C-minus or higher before enrollment in the intermediate/advanced reporting and writing, and workshop courses):

- JMC:2010 Journalistic Reporting and Writing 4 s.h.
- JMC:2020 Introduction to Multimedia Storytelling 4 s.h.

Intermediate/advanced reporting and writing—two of these:

- JMC:3400 Specialized Reporting and Writing 4 s.h.
- JMC:3405 Depth Reporting and Writing 4 s.h.
- JMC:3410 Magazine Reporting and Writing 4 s.h.
- JMC:3411 Radio and Television Storytelling 4 s.h.
JMC:3412 Strategic Communication Writing 4 s.h.
JMC:3415 Writing Across Cultures 4 s.h.
JMC:3450 Freelance Reporting and Writing 4 s.h.
JMC:3460 Arts and Culture Reporting and Writing 4 s.h.
JMC:3470 Narrative Journalism 4 s.h.
JMC:3490 Feature Reporting and Writing 4 s.h.
JMC:4100 Advanced Reporting and Writing 4 s.h.

Workshop—one of these:

JMC:3600 Topics in Media Production 4 s.h.
JMC:3603 TV News Production 4 s.h.
JMC:3605 Editing the News 4 s.h.
JMC:3610 Graphic Design 4 s.h.
JMC:3615 Strategic Communication Campaigns 4 s.h.
JMC:3620 Applied Digital and Social Media 4 s.h.
JMC:3625 Planning and Evaluation of Strategic Campaigns 4 s.h.
JMC:3630 Photo Storytelling: Making Powerful Images 4 s.h.
JMC:3633 Philanthropy Communication in a Digital World 4 s.h.
JMC:4120 Iowa Journalist 4 s.h.
JMC:4130 Advanced Public Relations Writing 4 s.h.
JMC:4300 Advanced Photo Storytelling 4 s.h.
JMC:4310 Advanced Media Workshop 4 s.h.
JMC:4320 Advanced Television News 4 s.h.
JMC:4330 Visual Storytelling 4 s.h.
JMC:4340 Convergence Journalism 4 s.h.

And:

A third reporting and writing course or a second workshop chosen from courses not taken in the lists above

CONCEPTUAL COURSES

This course:

JMC:3300 Media Law and Communication 3 s.h.

And one of these:

JMC:3100 Fundraising and Philanthropy Communication 3 s.h.
JMC:3105 Classic and Contemporary Sports Writing 3 s.h.
JMC:3110 Visual Communication 3 s.h.
JMC:3115 Solving Communication Problems 3 s.h.
JMC:3116 Communication-Based Approaches to International Development 3 s.h.
JMC:3120 History of Mass Communication in the U.S. 3 s.h.
JMC:3125 Media and Consumers 3 s.h.
JMC:3130 Comparative Communication Systems 3 s.h.
JMC:3131 Sex, Speech, and Digital Media Regulation 3 s.h.
JMC:3135 New Media and the Future of Sport 3 s.h.
JMC:3140 News-Editorial Problems 3 s.h.
JMC:3145 On the Campaign Trail: Elections and the Media 3 s.h.

JMC:3146 Arab Spring in Context: Media, Religion, and Geopolitics 3 s.h.
JMC:3150 Media and Health 3 s.h.
JMC:3155 Law, Media, and Current Issues 3 s.h.
JMC:3160 Images and Society 3 s.h.
JMC:3165 African Americans and the Media 3 s.h.
JMC:3170 Communication Technology and Society 3 s.h.
JMC:3175 Gender and Mass Media 3 s.h.
JMC:3180 Journalism Ethics 3 s.h.
JMC:3181 The Business of Sport Communication 3 s.h.
JMC:3182 Sport, Scandal, and Strategic Communication in Media Culture 3 s.h.
JMC:3183 Sport and the Media 3 s.h.
JMC:3185 Topics in Mass Communication 3 s.h.
JMC:3190 Classics of Sports Journalism: From Jack London to Grantland 3 s.h.

OPTIONAL JOURNALISM ELECTIVES

Students may earn elective credit by completing additional journalism and mass communication course work (prefix JMC), but they may not exceed a maximum of 48 s.h. earned in the School of Journalism and Mass Communication toward the 120 s.h. required for the B.A. or B.S. degree. Credit earned in JMC:2100 Journalism Internship counts toward the total journalism and mass communication course work that students may apply to the B.A. or B.S. degree.

SECOND MAJOR OR CONCENTRATION AREA

Every student majoring in journalism and mass communication must complete a second major or a concentration area outside the School of Journalism and Mass Communication. Study in the second major or concentration area enables students to acquire a substantial body of knowledge or expertise in a relevant area, learn how another discipline views the world, and/ or develop a companion set of skills to those in journalism and mass communication.

Students who satisfy the requirement by completing a concentration area must choose 24 s.h. of related course work in one or more departments; at least 15 of the 24 s.h. must be earned in advanced courses; in most departments, advanced courses are numbered 3000 or above. Course work in the concentration area must be arranged in consultation with the student's advisor; each student must have the advisor's written endorsement of the second major or concentration area before graduation.

The certificates in fundraising and philanthropy communication or in event planning do not satisfy the requirement for a second major or concentration area.

Second Major or Concentration Area for the B.A.

Bachelor of Arts students must complete the requirements for the journalism and mass communication major (36 s.h.) and must satisfy the school's second major or concentration area requirement in one of two ways.

**Option 1:** complete a B.A. major in another department.

**Option 2:** complete a 24 s.h. concentration of related courses in one or more departments that offer B.A.
degrees; at least 15 s.h. of the required 24 s.h. must be earned in advanced courses.

**Second Major or Concentration Area for the B.S.**
Bachelor of Science students must complete the requirements for the journalism and mass communication major (36 s.h.) and must satisfy the school's second major or concentration area requirement in one of two ways.

**Option 1:** complete a B.S. major in a natural, mathematical, or social science.

**Option 2:** complete a 24 s.h. concentration of related courses in the social sciences (economics, geography, political science, psychology, or sociology) and/or the natural and mathematical sciences, earning at least 15 s.h. of the required 24 s.h. in advanced courses; and complete all the special math, research methods, statistics, computer science, and/or cognate science requirements required for the B.S. in the department in which the majority of concentration area courses are taken.

**Four-Year Graduation Plan**
The following checkpoints list the minimum requirements students must complete by certain semesters in order to stay on the University's Four-Year Graduation Plan.

Students must be admitted to the journalism and mass communication major by the first semester of their sophomore year in order to be eligible for the Four-Year Graduation Plan. The checkpoints below include the required work in journalism and mass communication plus a second concentration area, but they do not include the requirements of a second major, since the Four-Year Graduation Plan does not apply to second majors.

**Before the third semester begins:** JMC:1100 Media Uses and Effects and/or JMC:1200 Media History and Culture

**Before the fifth semester begins:** JMC:2010 Journalistic Reporting and Writing, JMC:2020 Introduction to Multimedia Storytelling, one more course in the major, and at least one course in the second major or concentration area

**Before the seventh semester begins:** two required professional skills courses; one advanced, conceptual, or elective course in the major; three more courses in the second major or concentration area; and at least 90 s.h. earned toward the degree

**Before the eighth semester begins:** two more required professional skills courses; one advanced, conceptual, or elective course in the major; and two more courses in the second major or concentration area

**During the eighth semester:** enrollment in all remaining course work in the major (including the second major or concentration area), all remaining General Education courses, and a sufficient number of semester hours to graduate

**Honors in the Major**
Students majoring in journalism and mass communication have the opportunity to graduate with honors in the major. Students in the school's honors program must have a g.p.a. of at least 3.50 in work for the major. To graduate with honors in the major, they complete JMC:4955 Honors Project, earning 3 s.h. of credit in work guided by a faculty member. The honors project may be a thesis or a professional project and typically is completed during the last semester of the senior year. Students are encouraged but not required to take JMC:4950 Honors Readings or JMC:4993 Honors Workshop to prepare for the project.

Honors students in the school also must be members of the University of Iowa Honors Program, which requires students to maintain a cumulative University of Iowa g.p.a. of at least 3.33 and to fulfill other requirements; visit Honors at Iowa to learn about the University's honors program.

All majors with an overall g.p.a. of at least 3.33 are encouraged to take any journalism and mass communication course for honors credit and to make use of other honors opportunities in the school. Visit Journalism Honors Program on the school's web site or contact the school's honors advisor for details.

**Minor**
The minor in mass communication requires a minimum of 15 s.h. in mass communication courses, including 12 s.h. earned in courses considered advanced for the minor taken at the University of Iowa. Students must maintain a g.p.a. of at least 2.00 in all courses for the minor and in all UI courses for the minor. Courses for the minor may not be taken pass/nonpass.

Conceptual courses numbered JMC:3100 Fundraising and Philanthropy Communication through JMC:3190 Classics of Sports Journalism: From Jack London to Grantland, and the course JMC:3300 Media Law and Communication are considered advanced for the minor. Students are encouraged to take JMC:1100 Media Uses and Effects or JMC:1200 Media History and Culture as a lower-level course.

The minor introduces students to the field of mass communication; it does not prepare them for careers in media.

**National Honor Society**
The school's chapter of Kappa Tau Alpha, the national society honoring scholarship in journalism and mass communication, was founded in 1936 and is named for former director Leslie G. Moeller. Students are considered for membership if their grade-point average places them in the top 10 percent of their class and they have completed at least five semesters of University work, including a minimum of 9 s.h. in journalism and mass communication skills courses. Contact the school's Kappa Tau Alpha advisor for details.

**Certificate in Fundraising and Philanthropy Communication**
The School of Journalism and Mass Communication administers the undergraduate certificate program in fundraising and philanthropy communication; see Fundraising and Philanthropy Communication (p. 301) in the Catalog.

**Certificate in Event Planning**
The School of Journalism and Mass Communication administers the undergraduate certificate program in event planning; see Event Planning (p. 289) in the Catalog.
Graduate Programs of Study

- Master of Arts in journalism
- Master of Arts in strategic communication
- Doctor of Philosophy in mass communications

**Master of Arts: Journalism**

The Master of Arts program in journalism requires 33 s.h. of graduate credit. Students must complete a creative thesis. The program admits students for fall entry.

The M.A. program in journalism focuses on communication. Its approach is academic and theoretical, balanced with substantial development of professional skills, to prepare students for careers in media education. The program is designed for individuals who hold a bachelor's degree in journalism and/or mass communication and wish to continue their education in the field; for experienced journalists or communicators who wish to prepare to teach by earning an M.A. and then a Ph.D.; and for persons who hold a bachelor's degree in another discipline and would like to enter journalism by earning an M.A.

Students in the M.A. program in journalism who wish to enter the school's Ph.D. program in mass communications must complete all M.A. requirements, including the creative thesis, before they may be considered for admission to the Ph.D. program. Professional course work from the M.A. program cannot be applied to the requirements of the Ph.D. program.

M.A. students gain grounding in concepts, theories, and research methods while they pursue a curriculum that emphasizes technology, innovation and media, creative and collaborative multimedia, design for media, cross-media studies, transformed social interactions, and visual communication. They also hone technical skills in reporting, writing, visual and graphic storytelling, design, and digital imaging.

Students choose courses in consultation with their advisors.

All M.A. students must complete the following course work.

- JMC:5240 Social Media and Online Communication 3 s.h.
- JMC:5400 Master’s Advanced Writing and Editing 3 s.h.
- JMC:6255 Problems in International Communication 3 s.h.
- JMC:6800 Mass Communication Seminar 3 s.h.
- Courses outside journalism and mass communication 6 s.h.

Students who have not taken a recent U.S. media law class must enroll in JMC:3300 Media Law and Communication or an alternative media law course approved by the advisor. They must have the instructor’s consent.

All students must complete a thesis—an original, in-depth, theory-based work that combines scholarship and creative production. The thesis must be done in an appropriate and reproducible medium. Students may write conventional theses or produce creative, multimedia, and cross-media theses grounded in digital humanistic and social science traditions. Theses may include original scholarly research, creative visual storytelling, visual ethnography, digital animation, digital documentary productions, digital literatures, and so forth.

For a more detailed description of the M.A. program in journalism, contact the School of Journalism and Mass Communication.

**Master of Arts: Strategic Communication**

The Master of Arts program in strategic communication requires a minimum of 30 s.h. of graduate credit. Courses for the program are offered online.

The strategic communication program is designed for professionals in a wide variety of areas, such as corporate and organizational communication, public relations, integrated marketing communication, advertising, political and public affairs communication, health communication, event planning, risk communication, and professional writing. The program focuses on the skills, knowledge, and experience that working professionals need, including the ability to anticipate and meet the challenges of radical change in the media landscape.

The M.A. program offers three specializations: health and medicine, political communication, and public affairs communication. It also permits students to design a specialization that fits their interests and needs.

The curriculum consists of core courses, electives, and a capstone project in place of a thesis. In most courses, students are encouraged to introduce case studies and projects from their workplace.

The M.A. in strategic communication requires the following course work.

**CORE COURSES**

All of these:

- JMC:5300 Media Principles, Problems, and Challenges 3 s.h.
- JMC:5400 Master's Advanced Writing and Editing 3 s.h.
- JMC:6800 Mass Communication Seminar 3 s.h.
- JMC:5300 provides a conceptual foundation for strategic communication; JMC:5400 sharpens students' professional skills; and JMC:6800 focuses on best practices of leadership communication both in and outside of corporations and other organizations.

And one or both of these:

- JMC:5237 Financial and Budget Fundamentals for Communicators 3 s.h.
- JMC:5240 Social Media and Online Communication 3 s.h.

The program recommends that students complete both JMC:5237 and JMC:5240; students who complete both may count the second course as an elective.

**ELECTIVES**

Strategic communication students earn 15 s.h. in elective courses, which they choose in consultation with their advisors. Students choose electives from the list below. They also may choose other electives that are appropriate for their individual programs, drawing from courses offered
by the School of Journalism and Mass Communication and by other University of Iowa departments and programs.

### JMC:5238 Strategic Communication
- 3 s.h.
- Campaigns

### JMC:5239 Strategic Web Video Communication
- 3 s.h.

### JMC:5248 Strategic Political Communication
- 3 s.h.

### JMC:5266 Risk Communication
- 3 s.h.

### JMC:5267 Strategic Health Care Communication
- 3 s.h.

### JMC:5268 Strategic Planning for the Communication Professional
- 3 s.h.

### JMC:5269 Media Management for Strategic Communicators
- 3 s.h.

### JMC:5285 Strategic Communication Externship
- 3 s.h.

### CAPSTONE PROJECT
Strategic communication students complete the following capstone project in place of a thesis.

### JMC:5950 Capstone Project in Strategic Communication
- 3 s.h.

For a more detailed description of the M.A. in strategic communication, contact the School of Journalism and Mass Communication.

### Doctor of Philosophy
The Doctor of Philosophy program in mass communications requires 80 s.h. of graduate credit. The program admits students for fall entry. It is designed for students who have completed an M.A. thesis.

The program emphasizes interdisciplinary inquiry into media communication phenomena from sociocultural, historical, and social science perspectives. It is defined by the scholarly interests of its faculty, which include ethnographic, scientific, historical, legal, critical, cultural, social, feminist, and international aspects of media communication, both verbal and visual; comparative communication; convergence; new and emerging media; health communication; popular culture; and globalization. Faculty members use qualitative or quantitative methods in their research and teaching.

The program is highly individualized. In consultation with his or her advisor, each student draws on courses offered by the School of Journalism and Mass Communication as well as other academic units to develop a course of study that reflects his or her academic background, experience, professional goals, and intellectual interests.

Students may count up to 30 s.h. of master's degree credit toward the 80 s.h. required for the Ph.D., with the graduate committee's approval, as long as the credit was earned in courses relevant to the Ph.D. study plan. The Graduate College does not accept transfer credit for professional skills courses. Students who have earned professional master's degrees must take additional Ph.D. course work.

The Doctor of Philosophy in mass communications requires the following course work.

### JMC:6100 Ph.D. Seminar (taken four times)
- 4 s.h.

### JMC:6210 Social Science Theories in Media and Communication
- 3 s.h.

### JMC:6220 Critical Cultural Theories in Media and Communication
- 3 s.h.

### JMC:6310 Quantitative Research Methods for Media and Communication
- 3 s.h.

### JMC:6320 Qualitative Research Methods for Media and Communication
- 3 s.h.

### JMC:6700 Approaches to Teaching
- 3 s.h.

### JMC:6999 Dissertation
- arr.

### Advanced research methods courses
- 3 s.h.

### Advanced theory courses
- 3 s.h.

### Journalism and mass communication electives
- 6 s.h.

### Outside concentration courses
- 9 s.h.

### Credit from master's degree and/or additional Ph.D. courses
- 30 s.h.

For a more detailed description of the Ph.D. program, contact the School of Journalism and Mass Communication.

### Joint J.D./M.A. and J.D./Ph.D.
The School of Journalism and Mass Communication and the College of Law offer a joint Juris Doctor/Master of Arts in journalism and a joint Juris Doctor/Doctor of Philosophy in mass communications. The joint degree programs allow students to count a limited amount of credit toward both degrees. Separate application to each degree program is required. Applicants must be admitted to both programs before they may be admitted to the joint degree program. Admission for journalism and mass communication graduate programs is for fall entry.

For information about the J.D., see the College of Law (p. 969) section of the Catalog.

### Admission
Applicants must meet the admission requirements of the Graduate College; see the Manual of Rules and Regulations of the Graduate College.

### Facilities and Resources

#### Adler Journalism and Mass Communication Building
The School of Journalism and Mass Communication is housed in the Philip D. Adler Journalism and Mass Communication Building. The 65,000-square-foot building has computer laboratories for audio, video, design, writing and web publishing, and a resource center. A photography laboratory is located nearby. The building also is home to offices of the Iowa High School Press Association; the Quill and Scroll Society, an international honor society for high school journalists; the University's award-winning student newspaper, The Daily Iowan; and Daily Iowan TV, a student-run newscast.

#### Iowa Center for Communication Study
The Iowa Center for Communication Study encourages and facilitates student and faculty research in communication. It also sponsors publications and provides editorial oversight for the Journal of Communication Inquiry.

### Financial Support
More than $170,000 in scholarships and awards is disbursed to journalism and mass communication students each year. Scholarship information and applications are available each fall. Visit Scholarships on the School of
Journalism and Mass Communication web site or contact the school.

The school offers research and teaching assistantships for graduate students; preference is given to Ph.D. students. Journalism and mass communication students have been successful in winning competitive fellowships open to all graduate students; applicants must be nominated by the graduate committee.

The school has a program of modest financial support for undergraduate and graduate student research projects.

Professional Enrichment

Internships

The school encourages undergraduate majors and Master of Science professional journalism emphasis students to complete at least one internship. The school’s internship and assessment coordinator helps students find appropriate positions.

Undergraduate students may earn up to 4 s.h. of internship credit, registering with appropriate faculty sponsorship for JMC:2100 Journalism Internship (1-4 s.h.). Internships do not fulfill requirements for the major, but internship credit counts toward the total journalism and mass communication credit that students may apply toward a B.A. or B.S. degree (maximum of 48 s.h.). Students may take internships for no credit through CCP:1019 Internship in Journalism.

Students also are encouraged to pursue opportunities for journalism experience on campus through student-operated media, including The Daily Iowan, Daily Iowan TV, and KRUI-FM radio.

Job Placement

The school’s internship and assessment coordinator helps students seeking career guidance and employment opportunities. The school compiles and publicizes notices of professional jobs open to JMC students and graduates. It also cooperates with the University’s Pomerantz Career Center in providing career guidance and placement services as well as workshops and programs on seeking jobs.

Activities

The school engages in a variety of activities for the enrichment of students, faculty, and the entire campus. Speakers visit campus each year under lectureships funded by the John F. Murray and Leslie G. Moeller Fund, and the M. Holly McGranahan Lecture. In addition, guest speakers are funded through the Hearst Visiting Professionals Program and the Hageboeck Daily Iowan Visiting Professionals Program. Campus organizations for students include Kappa Tau Alpha (KTA, a national society honoring scholarship in journalism), the National Association of Black Journalists (NABJ), the Public Relations Student Society of America (PRSSA), the Society of Professional Journalists (SPJ), and Ed on Campus (EOC).

Courses

Lower-Level Undergraduate

JMC:1000 First-Year Seminar

1-2 s.h.
Small discussion class taught by a faculty member; topics chosen by instructor; may include outside activities (e.g., films, lectures, performances, readings, visits to research facilities). Requirements: first- or second-semester standing.

JMC:1100 Media Uses and Effects

3 s.h.
Introduction to mass communication theory as it relates to practical applications in the media industry and American society. GE: Social Sciences.

JMC:1200 Media History and Culture

3 s.h.
Historical development of journalism in the United States; cultural, historical content. GE: Historical Perspectives.

JMC:1500 Social Media Today

3 s.h.
Prehistory of social media and identification of ideas, events, and elements in ancient and historical times; earliest days of online posting and interacting; first instances of social engagement on the Web; how social media (journalism, politics, health care, romance and lifestyle, entertainment, war and terrorism, professions and jobs) affects individual areas of life, culture, and society; what's next and how social media changes lives in the future and affects the fate of humanity. GE: Values, Society, and Diversity.

JMC:2010 Journalistic Reporting and Writing

4 s.h.
Fundamental skills of journalistic reporting and writing. Prerequisites: JMC:1100 with a grade of C- or higher and JMC:1200 with a grade of C- or higher. Corequisites: JMC:2020. Requirements: journalism major.

JMC:2020 Introduction to Multimedia Storytelling

4 s.h.
Fundamental skills of multimedia storytelling, including visual and digital. Prerequisites: JMC:1100 with a grade of C- or higher and JMC:1200 with a grade of C- or higher. Corequisites: JMC:2010. Requirements: journalism major.

JMC:2100 Journalism Internship

1-3 s.h.
Faculty-supervised professional work experience in journalism and mass communication. Prerequisites: JMC:2010 and JMC:2020. Requirements: journalism major.

JMC:2110 Internship in Event Planning

3 s.h.
Internship for Event Planning certificate. Same as EVNT:2110.

JMC:2200 Communication and Public Relations

3 s.h.
Theory and practice of public relations; cultural, social, organizational roles of public relations, opportunities, problems, and solutions.

Upper-Level Undergraduate and Graduate

JMC:3100 Fundraising and Philanthropy Communication

3 s.h.
Practical experience planning and writing fundraising materials; how yearly fundraising helps approximately 1.5 million nonprofit organizations receive more than $3 billion from individuals, foundations, and corporations to help people in need, advocate for causes, support research, arts/culture, and enhance opportunities for public and/or their members. Same as FPC:3185.

JMC:3105 Classic and Contemporary Sports Writing 3 s.h.
Critical reading of sports reportage, including historical and current examples; social and cultural preoccupations and problems viewed through the prism of sports journalism.

JMC:3110 Visual Communication 3 s.h.
History of modern visual communication from a cultural perspective; visual form, composition, spatial representation, color and other topics; in-depth study of selected artists, designers, photographers.

JMC:3115 Solving Communication Problems 3 s.h.
Fundamentals of scientific inquiry in the study of communication and mass communication behavior; language, concepts, procedures, application of behavioral research methods; field and experimental approaches.

JMC:3116 Communication-Based Approaches to International Development 3 s.h.
Communication as a vital component for any effort to create social change; necessary communication to reach out to target audiences—people and communities in need—from campaigns persuading communities to change knowledge, attitudes, and practices to aiding other development efforts in areas of health, education, rural development, or sustainable agricultural practices; importance of communication as an integral part to any effort aimed at creating large-scale social change. Same as IS:3116.

JMC:3120 History of Mass Communication in the U.S. 3 s.h.
Historical analysis of professional practices. Prerequisites: JMC:1200.

JMC:3125 Media and Consumers 3 s.h.
Communications media in historical, political, economic contexts and their relationships with audiences; criteria for evaluating media content in relation to nature and consequences of news, entertainment, advertising.

JMC:3130 Comparative Communication Systems 3 s.h.
Culture and communication as central to examining media in different social and political settings; emphasis on contemporary problems.

JMC:3131 Sex, Speech, and Digital Media Regulation 3 s.h.
Representation and regulation of sex-themed visual imagery in public spaces and mass media; history of regulation of sex-themed visual imagery in context of religion and art, background for regulation of pornography, erotica, and obscenity in Anglo-American tradition and under international law; focus on regulation of pornography as “speech” under the First Amendment; transfer of First Amendment free speech principles designed to regulate sex-themed content from media in real space to media in cyberspace.

JMC:3135 New Media and the Future of Sport 3 s.h.
Emergence and significance of Internet blogs, social media, convergence journalism, video games, and fantasy sports; economic, regulatory, and cultural forces that shape new media sport journalism and entertainment. Same as SPST:3198, AMST:3198.

JMC:3140 News-Editorial Problems 3 s.h.
Current issues in journalism, editing strategies; emphasis on press performance and practical problems journalists confront in their work.

JMC:3145 On the Campaign Trail: Elections and the Media 3 s.h.
Relationship between political campaigns and mass media; critical evaluation of nature, role, function of media political coverage.

JMC:3146 Arab Spring in Context: Media, Religion, and Geopolitics 3 s.h.
Protest movements that started in Tunisia in 2011 and swept across North Africa and the Middle East transforming Arab and Islamic societies in radically different ways; function of social media, satellite television, communication technology; influence of religious leaders and groups on some protest outcomes; impact of wealth and geopolitics on social fabric of Islamic societies within and outside Arab countries. Requirements: for COMM:3834 — g.p.a. of at least 2.50, completion of Foundations of Communication requirement, and 6 s.h. of intermediate-level course work. Same as RELS:3834, IS:3834, WLLC:3834, COMM:3834.

JMC:3150 Media and Health 3 s.h.
Potential and limits of mass media's ability to educate the public about health; research and theory on the influence of information and entertainment media; theories, models, assumptions of mass communication in relation to public health issues. Same as CBH:3150, GHS:3150.

JMC:3155 Law, Media, and Current Issues 3 s.h.
Current topics in communication law.

JMC:3160 Images and Society 3 s.h.
Development and uses of photography, film, and television as technologies of reproduction in contemporary culture.

JMC:3165 African Americans and the Media 3 s.h.
GE: Values, Society, and Diversity. Same as AFAM:3925.

JMC:3170 Communication Technology and Society 3 s.h.
Implications and effects of computer-based forms of communication, especially the Internet, for journalists, the media audience, and society at large.

**JMC:3175 Gender and Mass Media** 3 s.h.  
Media images and representations of the body in terms of gender; impact on people, society; media and body image, sexuality, gender roles, gender and power; race, ethnicity, class, age; critical analysis of mediated images.

**JMC:3180 Journalism Ethics** 3 s.h.  
Application of ethical principles in journalistic decision making; consideration of potentially conflicting values, loyalties, and goals that force professional journalists to make difficult choices.

**JMC:3181 The Business of Sport Communication** 3 s.h.  
Critical and practical approach to understanding contemporary sports media and business practices that mark it; focus on sports media industries and institutions; branding, marketing, demographic, public relations, and promotional factors that shape content. Same as SPST:3181.

**JMC:3182 Sport, Scandal, and Strategic Communication in Media Culture** 3 s.h.  
Use of sport scandal to consider relationship between sport and media in American and global popular culture; broad range of case studies used to consider what constitutes a sport scandal, how this definition shifts in different circumstances; crucial roles media play in creating, communicating, and diffusing these crises; how phenomenon of sports scandal has intensified along with emergence of cable television, the Internet, and social media. Same as SPST:3182.

**JMC:3183 Sport and the Media** 3 s.h.  
Examination of sport and media's intimate relationship; aesthetic, cultural, political, economic, and industrial factors that shape it. Same as SPST:3175.

**JMC:3185 Topics in Mass Communication** 2-3 s.h.  
Focus on particular area, issue, approach, or body of knowledge; may include international media, media criticism, new technologies, history of documentary photography, literary journalism, media management.

**JMC:3190 Classics of Sports Journalism: From Jack London to Grantland** 3 s.h.  
Historical examples of celebrated works of sports journalism; focus on long-form texts. Same as SPST:3180.

**JMC:3210 Workshop for Secondary School Journalism/Communication Teachers** 1-3 s.h.  
Workshops on journalism/mass media curriculum, audio/video production, photojournalism, publication design, journalistic writing techniques, advising student publications. Same as EDTL:3026.

**JMC:3250 Foundations of Event Management** 3 s.h.  
Large, major special events, professional meetings, and conferences; development and planning, implementation of events, management and evaluation of events; development requirements of planning events, development strategies, budgeting, staffing requirements, resource allocation, site planning, basic risk management requirements, emergency procedures; event implementation policy and procedures; relationship to elements within development stages; event management and evaluation procedures. Same as SRM:3154, EVNT:3250.

**JMC:3260 Event Planning Workshop** 3 s.h.  
Hands-on experience in event planning; working with clients, conceptualizing events, lining up small and large details, promoting events via social media and other means, carrying out events, and reflecting on outcomes; meet with event planning professionals; complete individual and group projects. Same as EVNT:3260.

**JMC:3300 Media Law and Communication** 3 s.h.  
Issues affecting the media: freedom of expression, libel, privacy, access to information, protection of news sources, free press/fair trial, copyright, government regulation of broadcasting. Requirements: junior standing.

**JMC:3400 Specialized Reporting and Writing** 4 s.h.  
Topics may include public affairs, law, science, business, medicine, intercultural affairs, education, computer-assisted reporting. Prerequisites: JMC:2010 with a grade of C- or higher and JMC:2020 with a grade of C- or higher. Requirements: journalism major.

**JMC:3405 Depth Reporting and Writing** 4 s.h.  
Enterprise reporting; emphasis on reporter as researcher, organizer, writer of complex stories in a variety of contexts. Prerequisites: JMC:2010 with a grade of C- or higher and JMC:2020 with a grade of C- or higher. Requirements: journalism major.

**JMC:3410 Magazine Reporting and Writing** 4 s.h.  
Finding ideas, researching, interviewing; problems of organization and style; identification of audiences and markets; development of writing skills. Prerequisites: JMC:2010 with a grade of C- or higher and JMC:2020 with a grade of C- or higher. Requirements: journalism major.

**JMC:3411 Radio and Television Storytelling** 4 s.h.  
Principles; gathering, writing, editing, reporting the news; techniques and concepts as a foundation for understanding, successfully writing, and delivering broadcast news. Prerequisites: JMC:2010 with a grade of C- or higher and JMC:2020 with a grade of C- or higher. Corequisites: JMC:3603. Requirements: journalism major.

**JMC:3412 Strategic Communication Writing** 4 s.h.  
Principles and practices of persuasive writing; focus on public relations; may include editorials, op-ed pieces, magazine essays, reviews. Prerequisites: JMC:2010 with a grade of C- or higher and JMC:2020 with a grade of C- or higher and (JMC:2200 or FPC:2200). Requirements: journalism major.
JMC:3415 Writing Across Cultures 4 s.h.
Forms of travel writing and other types of crosscultural reporting; skills, knowledge, understandings vital to writing well about an increasingly multicultural and diverse world. Prerequisites: JMC:2010 with a grade of C- or higher and JMC:2020 with a grade of C- or higher. Requirements: journalism major.

JMC:3450 Freelance Reporting and Writing 4 s.h.
Approaches to writing and marketing articles to magazines, newspapers, other publications; developing ideas, researching periodical markets, writing queries, writing and rewriting articles for publication. Prerequisites: JMC:2010 with a grade of C- or higher and JMC:2020 with a grade of C- or higher. Requirements: journalism major.

JMC:3460 Arts and Culture Reporting and Writing 4 s.h.
Writing about arts and culture in a range of formats (e.g., news, profiles, features, criticism, essays); emphasis on original reporting that draws on resources, issues, people, and events on campus and in the community, especially in visual and performing arts. Prerequisites: JMC:2010 with a grade of C- or higher and JMC:2020 with a grade of C- or higher. Requirements: journalism major.

JMC:3470 Narrative Journalism 4 s.h.
Process of writing the true story; development of skills in researching, interviewing, information gathering, organization, story-telling techniques, writing final story; story publication in magazines, newspapers, journals, online. Prerequisites: JMC:2010 with a grade of C- or higher and JMC:2020 with a grade of C- or higher. Requirements: journalism major.

JMC:3490 Feature Reporting and Writing 4 s.h.
Storytelling techniques for magazine, newspaper, web site features; stylistic flair; human elements in stories; research, interviewing, and reporting. Prerequisites: JMC:2010 with a grade of C- or higher and JMC:2020 with a grade of C- or higher. Requirements: journalism major.

JMC:3600 Topics in Media Production 4 s.h.
Analysis and solution of problems with communication strategies and/or media products: public relations, newsletter production, radio, media research, web basics, global media, interviewing, PR fund-raising. Prerequisites: JMC:2010 with a grade of C- or higher and JMC:2020 with a grade of C- or higher. Requirements: journalism major.

JMC:3603 TV News Production 4 s.h.
Electronic news gathering (ENG); conceptualization, shooting, editing basic news packages. Prerequisites: JMC:2010 with a grade of C- or higher and JMC:2020 with a grade of C- or higher. Corequisites: JMC:3411. Requirements: journalism major.

JMC:3605 Editing the News 4 s.h.
Principles and process of editing content for publication; micro- and macroediting, headline writing, other aspects of editing. Prerequisites: JMC:2010 with a grade of C- or higher and JMC:2020 with a grade of C- or higher. Requirements: journalism major.

JMC:3610 Graphic Design 4 s.h.
Problems of design, layout and production; practical and aesthetic considerations; digital techniques; creative projects. Prerequisites: JMC:2010 with a grade of C- or higher and JMC:2020 with a grade of C- or higher. Requirements: journalism major.

JMC:3615 Strategic Communication Campaigns 4 s.h.
Development and presentation of public relations campaigns for client organizations; communication theory and research techniques applied to analyzing and solving public relations problems through objective-based strategic planning. Prerequisites: JMC:2010 with a grade of C- or higher and JMC:2020 with a grade of C- or higher and (JMC:2200 or FPC:2200) and JMC:3412. Requirements: journalism major.

JMC:3620 Applied Digital and Social Media 4 s.h.
Creation of original journalistic web sites incorporating writing, design, and structure; contemporary online media issues. Prerequisites: JMC:2010 with a grade of C- or higher and JMC:2020 with a grade of C- or higher. Requirements: journalism major.

JMC:3625 Planning and Evaluation of Strategic Campaigns 4 s.h.
Undergraduate-level research methods used specifically for public relations and advertising; basic quantitative and qualitative methods as related to strategic communication; hands-on exercises. Prerequisites: JMC:2010 with a grade of C- or higher and JMC:2020 with a grade of C- or higher. Requirements: journalism major.

JMC:3630 Photo Storytelling: Making Powerful Images 4 s.h.
Techniques; basic craft, location shooting, editing photographs; group critiques of assignments. Prerequisites: JMC:2010 with a grade of C- or higher and JMC:2020 with a grade of C- or higher.

JMC:3633 Philanthropy Communication in a Digital World 4 s.h.
World of philanthropy and nonprofit work that changes rapidly with and in response to developments in digital communications; campaigns and fundraisers driven by free agents on social networking sites as an example of how philanthropists and nonprofit workers operate in digital environment; overview of trends in areas of philanthropy and nonprofit work; practical skills to help communicate, create, and disseminate messages using multiple digital tools and social media; analysis of communication/media strategies; media production. Same as FPC:3633.

JMC:4100 Advanced Reporting and Writing 4 s.h.
Project journalism; extended magazine pieces, explanatory/investigative journalism, series for newspapers, or task-force projects by entire class on a major issue, with goal of publication. Prerequisites: JMC:3400 or JMC:3405 or JMC:3410 or JMC:3411 or JMC:3412 or JMC:3415 or JMC:3450 or JMC:3460 or JMC:3470 or JMC:3490. Requirements: journalism major and one course from JMC:3400 through JMC:3490.
JMC:4120 Iowa Journalist 4 s.h.
Experience in photojournalism and desktop publishing software consistent with real-world media and public relations objectives; students write, edit, design, and produce Iowa Journalist magazine. Prerequisites: JMC:3400 or JMC:3405 or JMC:3410 or JMC:3411 or JMC:3412 or JMC:3415 or JMC:3450 or JMC:3460 or JMC:3470 or JMC:3490 or JMC:3600 or JMC:3603 or JMC:3605 or JMC:3610 or JMC:3615 or JMC:3620 or JMC:3625 or JMC:3630 or JMC:3633. Requirements: journalism major and one course from JMC:3400 through JMC:3620.

JMC:4130 Advanced Public Relations Writing 4 s.h.
Case-based study of corporate public relations practice; globalization issues, branding and integrated communication, crisis management. Prerequisites: JMC:3412. Requirements: journalism major.

JMC:4300 Advanced Photo Storytelling 4 s.h.
Photojournalism skills; may include documentary photography, advanced photojournalism methods and techniques. Prerequisites: JMC:3630.

JMC:4310 Advanced Media Workshop 4 s.h.
Journalism and mass communication skills; may include editing, broadcasting, design, multimedia. Prerequisites: JMC:3400 or JMC:3405 or JMC:3410 or JMC:3411 or JMC:3412 or JMC:3415 or JMC:3450 or JMC:3460 or JMC:3470 or JMC:3490 or JMC:3600 or JMC:3603 or JMC:3605 or JMC:3610 or JMC:3615 or JMC:3620 or JMC:3625 or JMC:3630 or JMC:3633. Requirements: journalism major and one course from JMC:3400 through JMC:3620.

JMC:4320 Advanced Television News 4 s.h.
Advanced training and experience in producing, writing, and reporting television news packages and newscasts; emphasis on meeting professional standards. Prerequisites: JMC:3411 and JMC:3603. Requirements: journalism major.

JMC:4330 Visual Storytelling 4 s.h.
Experience with journalistic storytelling techniques, generating story ideas, researching, writing, producing, editing, and critiquing documentary features and other visual narratives; use of digital video and archival material to produce visual narrative pieces for broadcast and other media platforms. Prerequisites: JMC:3411 and JMC:3603. Requirements: journalism major.

JMC:4340 Convergence Journalism 4 s.h.
Use of multiple technologies for journalistic storytelling across media platforms, such as print, television, and Internet. Prerequisites: JMC:3620. Requirements: journalism major.

JMC:4900 Special Projects in Mass Communication arr.
Research and readings to fit needs, interests of students.

JMC:4910 Readings in Communication and Mass Communication 1-3 s.h.
Focus on a problem or issue.

JMC:4950 Honors Readings 1-3 s.h.
Topic in journalism or mass communication, chosen by student. Requirements: honors standing.

JMC:4955 Honors Project 3 s.h.
Independent research or project for honors students. Requirements: honors standing.

JMC:4993 Honors Workshop 3 s.h.
Preparation for honors project; coordination of student's individual thesis work, introduction to issues in research design, methods. Requirements: honors standing.

Graduate

JMC:5100 Masters Seminar 1 s.h.
Theoretical or methodological problems in mass communication.

JMC:5237 Financial and Budget Fundamentals for Communicators 3 s.h.
How a company operates as a business; rapid changes in international economy; important SEC documents and other sources of information on public companies; a public company's financial statements; comparison of public companies financial conditions; analysis and informed conclusions about a public company's financial condition.

JMC:5238 Strategic Communication Campaigns 3 s.h.
Practice of strategic communication through traditional and new media for purpose of benefiting nonprofit organizations or bringing about social change; examples and strategies from corporate, nonprofit, and social marketing campaigns; application of knowledge for benefit of real-world clients; principles and strategies applied to professional projects.

JMC:5239 Strategic Web Video Communication 3 s.h.
Production of video content and releasing visual stories online; tools needed to capture compelling images and edit meaningful stories; strengths and weaknesses of video storytelling using portable video cameras and affordable editing software; for graduate students who are working professionals.

JMC:5240 Social Media and Online Communication 3 s.h.
Exploration of information industry growth; creative processes involved in developing a blog and utilizing multimedia tools to enhance strategic messages; focus on characteristics and spread of new communication technologies and their social, economic, and political effects.

JMC:5248 Strategic Political Communication 3 s.h.
Study of political communication; topics range from classic issues (agenda setting) to current debates and emerging topics associated with new media; readings address political communication in the United States.
JMC:5266 Risk Communication 3 s.h.
Examination of risk as a central concept in communication process; risk as intrinsically an interdisciplinary concept; literature from a wide range of disciplines and perspectives (communication, psychology, sociology, formal risk analysis); case studies drawn from issues and cultural contexts (environmental, technological or health risks; food safety risks; international military crisis or threats of terrorism, natural disasters); emphasis on comparison of European and American contexts.

JMC:5267 Strategic Health Care Communication 3 s.h.
Breaking down health care to basics; writing and communicating about health care in an understandable way so that hospitals, medical groups, and health care businesses can be better understood when doing business with each other as well as the public and consumers at large; health care writing and communication so consumers can understand, avoid injuries and even death from medical errors shown by studies on health literacy; how doctors and insurance companies can convey their messages in easy-to-understand way to lessen public frustration with the system.

JMC:5268 Strategic Planning for the Communication Professional 3 s.h.
Use of a 10 step strategic planning model to discuss ways that an effective strategic planning process can be developed to effectively respond to a changing environment; strategic planning for an organization, department, specific project, and personal growth; ways that strategic thinking can help develop strategic thinking skills that transfer to any part of a career.

JMC:5269 Media Management for Strategic Communicators 3 s.h.
Looking at media in a completely new way; focus on economics and management of competitive businesses; how modern-day businesses in the media sector succeed or fail and why; decision making, competition, and outcomes; emphasis on news media companies that operate in public glare and offer rich opportunities for critical observation.

JMC:5285 Strategic Communication Externship 3 s.h.
Externship to allow connection between academic program and professional world; enhancement of skill and knowledge.

JMC:5300 Media Principles, Problems, and Challenges 3 s.h.
Current issues in journalism and mass communication in the United States and the world.

JMC:5400 Master's Advanced Writing and Editing 3 s.h.
Writing workshop for M.A. strategic communication students.

JMC:5910 Masters Tutorial arr.
Topics in communication and mass communication inquiry.

JMC:5920 Masters Practicum arr.
Research, readings, projects to fit needs, interests of students.

JMC:5950 Capstone Project in Strategic Communication 3 s.h.
Workshop of capstone projects required for graduation; for students nearing completion of M.A. in strategic communication. Requirements: M.A. in strategic communication program enrollment.

JMC:5955 Masters Research arr.
Independent research for projects, theses.

JMC:6100 Ph.D. Seminar 1 s.h.
Forum on theoretical or methodological problems in mass communication.

JMC:6210 Social Science Theories in Media and Communication 3 s.h.
Introduction to social science theory used by communication scholars to study media and communication; use of theory to explain media and communication phenomena.

JMC:6220 Critical Cultural Theories in Media and Communication 3 s.h.
Continuation of JMC:6210; introduction to critical cultural theories; use of theories to explain media and communication phenomena.

JMC:6254 Communication and Change 3 s.h.
Diverse perspectives on changing communication forms and their implications for media and society; theoretical and methodological approaches to research involving innovation.

JMC:6255 Problems in International Communication 3 s.h.
Representative topics: communication systems in national development and globalization; international and cross-cultural communication structure and theory; human rights; images, values; mass persuasion; laws, agreements; information channels, content, flow, effects; censorship, language, literacy.

JMC:6256 Gender and Mass Communication 3 s.h.
Approaches to the study of gender and communication; topics vary. Same as GWSS:6256.

JMC:6310 Quantitative Research Methods for Media and Communication 3 s.h.
Journalism and media communication research methods that involve collection and analysis of quantifiable data; surveys, content analyses, and experiments.

JMC:6320 Qualitative Research Methods for Media and Communication 3 s.h.
Interpretive research methods in journalism and communication studies that involve field observation, interviews, and textual analysis; use of contemporary, historical, and legal resources; ethical and philosophical positions underlying use of these methods.

JMC:6330 Reading Group 1-3 s.h.
Analysis and discussion of important texts.
JMC:6333 Seminar in Media Communication 3 s.h.
Topics vary.

JMC:6340 The Internet, Human Rights, and Freedom of Expression 3 s.h.
Origins of international human rights regime from a comparative and collective memory perspective; major human rights and freedom of expression controversies from a comparative and international perspective.

JMC:6700 Approaches to Teaching 3 s.h.
Institutional and disciplinary issues that influence the journalism/mass communication classroom, philosophies of teaching, and use of teaching strategies, techniques, and classroom technologies; for students planning to work in academia.

JMC:6776 Visual Narratives Techniques 3 s.h.
Analyses of theories, aesthetics, and methodologies of visual narratives in media storytelling; narrative techniques employed in different media from broadcast television documentaries and news features to narrative storytelling in cyberspace; conceptual survey of visual narratives; hands-on research, writing, production, and editing of narrative video content for broadcast television and online platforms; production of a high-quality visual narrative project.

JMC:6800 Mass Communication Seminar 2-3 s.h.
Readings, research.

JMC:6910 Ph.D. Tutorial arr.
Communication and mass communication inquiry.

JMC:6920 Ph.D. Research Practicum arr.
Conceptualization and execution of research projects.

JMC:6999 Dissertation arr.
Large Data Analysis

Chair, Department of Computer Science
- Alberto Segre

Coordinator, Large Data Analysis
- Suely P. Oliveira (Computer Science)

Undergraduate certificate: large data analysis
The Certificate in Large Data Analysis is administered by the Department of Computer Science (p. 198).

Undergraduate Program of Study
- Certificate in Large Data Analysis

The certificate addresses the need for people with the quantitative and computational skills to make sense of massive data. Expertise in this field involves computational and algorithmic skills to efficiently process large data sets, statistical analysis to understand if correlations seen in large data sets are significant, and mathematical skills to develop and understand the underlying algorithms for the data analysis.

Certificate

The Certificate in Large Data Analysis requires a minimum of 21 s.h. The certificate program is open to current University of Iowa undergraduate students and to all individuals who hold a bachelor’s degree and are not enrolled in a graduate or professional degree program. Students must maintain a g.p.a. of at least 2.00 in work for the certificate.

Students majoring in computer science, mathematics, or statistics may count a maximum of 6 s.h. of course work for their major toward the certificate. Students pursuing other majors should consult with their major advisors to ascertain whether they may count certificate course work toward their majors.

Most of the certificate courses have prerequisites not included in the certificate requirements. Students should select courses for which they have met the prerequisites.

Prerequisites (or their equivalents) for the certificate include:

- CS:1210 Computer Science I: Fundamentals 4 s.h.
- MATH:1850 Calculus I 4 s.h.
- MATH:1860 Calculus II 4 s.h.
- MATH:2700 Introduction to Linear Algebra 4 s.h.

The following course work is required.

Level I

Both of these:

- MATH:3800 Elementary Numerical Analysis 3 s.h.
- STAT:2010 Statistical Methods and Computing 3 s.h.

Level II

This course:

- STAT:3200 Applied Linear Regression 3 s.h.

Two of these:

- CS:4700/MATH:4860 High Performance and Parallel Computing 3 s.h.
- CS:4980 Topics in Computer Science II (consult advisor for section approval) 3 s.h.
- MATH:4820 Optimization Techniques 3 s.h.
- MSCI:3200 Database Management 3 s.h.

May include one of these:

- STAT:5400 Computing in Statistics 3 s.h.
- STAT:5810/BIOS:5310 Research Data Management

Level III

Both of these:

- MATH:4740/STAT:4740/CS:4740 Large Data Analysis (capstone course) 3 s.h.
- MSCI:6421/CS:6421 Knowledge Discovery 3 s.h.

Topic courses on machine learning, internet measurements and analytics, big data technologies, or topological data analysis may be substituted for the requirements with the approval of the large data analysis advisory board.
Latin American Studies

**Director, Division of Interdisciplinary Programs**
- Helena R. Dettmer

**Director, Latin American Studies**
- Joy Hayes (Communication Studies)

**Coordinator, Latin American Studies**
- Karmen R. Berger

**Undergraduate minor:** Latin American studies  
**Undergraduate certificate:** Latin American studies  
**Faculty:** http://clas.uiowa.edu/latin-american-studies/faculty  
**Web site:** http://clas.uiowa.edu/latin-american-studies

The Latin American Studies Program (LASP) is interdisciplinary, focusing on the history, politics, social organization, economy, geography, music, religion, art, and literature of Central and South America, Mexico, the Caribbean, the United States, and elsewhere around the globe. Faculty members from across the College of Liberal Arts and Sciences participate in the Latin American Studies Program as affiliated faculty members. Other University of Iowa faculty members occasionally offer courses and participate in the program's research, study, and interdisciplinary activities.

The Latin American Studies Program prepares students for graduate study or for Latin America-related careers in business, communications, government, bilingual/bicultural education, secondary teaching, community organizing, and international work.

In addition to its instructional activity, LASP sponsors a wide variety of activities, brings scholars of Latin America to campus, and fosters institutional linkages.

Latin American Studies is one of the academic units in the Division of Interdisciplinary Programs (p. 226).

**Undergraduate Programs of Study**
- Certificate in Latin American Studies  
- Minor in Latin American studies

**Certificate**

The Certificate in Latin American Studies requires a minimum of 24 s.h. The certificate program is open to current University of Iowa undergraduate students (except those earning a major in international studies (p. 415) with an emphasis in Latin American studies) and to all individuals who hold a bachelor's degree and are not enrolled in a graduate or professional degree program. Students must maintain a g.p.a. of at least 2.00 in certificate courses.

A student may earn the certificate or the minor in Latin American studies, but not both.

The 24 s.h. required for the certificate must be earned in LASP-approved courses (see "Associated Courses" and "Courses" below) and must include at least 12 s.h. of credit earned at the University of Iowa. All students develop an individual certificate plan of study in close cooperation with a LASP advisor. They may count a total of 12 s.h. of credit earned for majors, minors, and other certificates toward the Certificate in Latin American Studies. In some cases, students may be able to count certificate courses toward certain General Education Program (p. 313) requirements.

The Certificate in Latin American Studies requires the following course work.

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>LAS:2700 Introduction to Latin American Studies</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>LAS:4700 Latin American Studies Seminar</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>Spanish and Portuguese courses</td>
<td>6 s.h.</td>
</tr>
<tr>
<td>Additional courses</td>
<td>12 s.h.</td>
</tr>
</tbody>
</table>

The required Spanish and Portuguese courses (6 s.h.) must be chosen from the lists under "Associated Courses" below.

The required additional courses (12 s.h.) also must be chosen from the lists under "Associated Courses" and "Courses" below. They must include courses from at least two different departments, and they may include a maximum of one (3 s.h.) additional course in Spanish or Portuguese.

**Study Abroad**

The program highly recommends study abroad in Latin America. Students must have prior approval to apply credit from a study abroad program toward the certificate requirements; contact the Latin American Studies Program.

**Minor**

The minor in Latin American studies requires a minimum of 15 s.h. in LASP-approved courses (see "Associated Courses" and "Courses" below), including 12 s.h. in University of Iowa courses numbered 3000 or above. Students must maintain a g.p.a. of at least 2.00 in all courses for the minor and in all UI courses for the minor. Course work in the minor may not be taken pass/nonpass.

A student may earn the minor or the certificate in Latin American studies, but not both.

Students may count a total of 6 s.h. earned for majors, certificates, and other minors toward the Latin American studies minor. The minor is interdisciplinary, so it may include a maximum of 6 s.h. of credit from any single department or program.

Students are strongly encouraged to take either or both of these for the minor.

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>LAS:2700 Introduction to Latin American Studies</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>LAS:4700 Latin American Studies Seminar</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

**Study Abroad**

The Latin American Studies Program highly recommends, but does not require, that students have an in-depth Latin American cultural experience, usually through study abroad, before completing their undergraduate requirements.

In cooperation with International Programs Study Abroad, LASP faculty members facilitate student participation in programs in many Latin American countries. University of Iowa students may enroll in programs in Argentina,
Brazil, Chile, Colombia, Costa Rica, Cuba, the Dominican Republic, Honduras, Mexico, and Uruguay. Programs range from intensive language study to group programs with a special focus. The University of Iowa cosponsors these programs through various consortiums.

Study abroad courses may be counted toward requirements for the certificate and the minor with prior approval from a LASP director.

Financial Support

Students are encouraged to apply for a Stanley Undergraduate Award for International Research/Fieldwork through University of Iowa International Programs. The awards are given to outstanding University of Iowa undergraduates who, in close consultation with a faculty member, propose well-conceived, small-scale research or fieldwork projects that require travel abroad. Students may conduct projects while participating in a study abroad program and may combine the award with other awards and financial assistance. For information regarding other scholarships, contact LASP advisors, International Programs staff, and the LASP director.

Activities

In addition to its instructional activity, LASP organizes a range of public programming activities each semester, including film series, photography and art exhibits, conferences, roundtable discussions, and lectures. Recent events include public lectures on community media and violence in Mexico and Colombia and on the cultural legacies of the 1960s in Latin America, and the annual Charles A. Hale Lecture in Latin American Studies. In the past, LASP cosponsored an interdisciplinary symposium on the Latino Midwest and the International Conference of the American Portuguese Studies Association.

Associated Courses

The following courses are approved for the Latin American studies certificate and minor. Students may petition to include other courses that have significant Latin American content; consult the Latin American Studies Program.

**Anthropology**

ANTH:2110 Latin American Economy and Society 3 s.h.
ANTH:2220 Archaeology of Mesoamerica 3 s.h.
ANTH:3111/GHS:3040 Health in Mexico 3 s.h.
ANTH:3130 Cultural Politics 3 s.h.
ANTH:4700/HIST:4504/SPAN:4900/PORT:4700 Latin American Studies Seminar 3 s.h.

**Art**

ARTH:3120 The Art of Ancient Mexico 3 s.h.

**CINEMATIC ARTS**

CINE:2624 Introduction to Latin American Film 3 s.h.
CINE:4678/SPAN:4810 Topics in Latin American Cinema 3 s.h.

**Comparative Literature**


**Communication Studies**

COMM:1898 Introduction to Latina/o Communication and Culture 3 s.h.
COMM:4152 Latin American Media 3 s.h.

**Dance**

DANC:1150 Brazilian Culture and Carnival 3 s.h.

**English**

ENGL:3525 Literature and Culture of the Americas 3 s.h.
ENGL:3535 Inter-American Studies (when content is Latin American) 3 s.h.

**History**

HIST:4216 Mexican American History 3 s.h.
HIST:4217 Latina/o Immigration 3 s.h.
HIST:4334 Topics in American Borderlands History 3 s.h.
HIST:4501 Society and Revolution in Cuba 3 s.h.
HIST:4502 History of Mexico 3 s.h.
HIST:4505 Topics in Latin American History 3 s.h.
HIST:4508 Medicine and Public Health in Latin America, 1820-2000 3 s.h.
HIST:4510 Colonial Latin America 3 s.h.
HIST:4515 Introduction to Modern Latin America 3 s.h.
HIST:4520 Latin America and the U.S.: The Historical Perspective 3 s.h.
HIST:4525 Latin American Revolution 3 s.h.
HIST:4526 Dictatorships of Latin America 3 s.h.

**International Studies**

IS:2700/SPAN:2700/PORT:2700/LAS:2700 Introduction to Latin American Studies 3 s.h.

**Music**

MUS:2311 Music of Latin America and the Caribbean 3 s.h.
MUS:3163 Steel Band 1 s.h.

**Political Science**

POLI:2415 Latin American Politics 3 s.h.
POLI:3104 Immigration Politics 3 s.h.

**Portuguese**

PORT:1800 Contemporary Brazilian Narrative 3 s.h.
PORT:2700/LAS:2700/SPAN:2700/IS:2700 Introduction to Latin American Studies 3 s.h.
PORT:2800 Topics in Cultural Studies 3 s.h.
PORT:3350 Brazilian Literature Before 1900 3 s.h.
PORT:3400 Brazilian Literature After 1900 3 s.h.
PORT:4000 Topics in Luso-Brazilian Literature (when topic is Latin American) 3 s.h.
PORT:4100 Topics in Luso-Brazilian Culture (when topic is Latin American) 3 s.h.

Spanish
SPAN:1800 Contemporary Spanish American Narrative 3 s.h.
SPAN:2200 Introduction to Spanish American Cultures 3 s.h.
SPAN:2500 Readings in Spanish American Literature 3 s.h.
SPAN:2700/IS:2700/LAS:2700/PORT:2700 Introduction to Latin American Studies 3 s.h.
SPAN:2800 Screening Latin America 3 s.h.
SPAN:3060 Introductory Workshop on Creative Writing in Spanish 3 s.h.
SPAN:3200 Cultures of Spanish America 3 s.h.
SPAN:3220 Visual Culture: Colonial Spanish America 3 s.h.
SPAN:3230 Modern Mexico 3 s.h.
SPAN:3270/CL:3262 Pan-Caribbean Literary Currents 3 s.h.
SPAN:3300 Contemporary Spanish American Fiction 3 s.h.
SPAN:3310 Spanish American Short Story 3 s.h.
SPAN:3320 Spanish American Poetry 3 s.h.
SPAN:3350 Contemporary Spanish American Literature 3 s.h.
SPAN:3360/GWSS:3360 Latin American Women Writers 3 s.h.
SPAN:3400 Chicano Literature and Culture 3 s.h.
SPAN:3420 Cuban American Literature and Culture 3 s.h.
SPAN:3440 Topics in Latino/a Literature and Culture 3 s.h.
SPAN:4310 Cultural Identity in Caribbean Literature 3 s.h.
SPAN:4330 Colonial Spanish American Literature 3 s.h.
SPAN:4370 Literature and Mass Culture in Latin America 3 s.h.
SPAN:4380 Narratives of Underdevelopment 3 s.h.
SPAN:4390 Topics in Spanish American Literature 3 s.h.
SPAN:4800 Chicano Cinema 3 s.h.
SPAN:4810/CINE:4678 Topics in Latin American Cinema 3 s.h.
SPAN:4820 Latino/a Popular Culture 3 s.h.
SPAN:4950 Advanced Workshop on Creative Writing in Spanish 3 s.h.

Courses

All Latin American Studies Program courses are approved for the certificate and minor.

LAS:2700 Introduction to Latin American Studies 3 s.h.
Cultures of Latin American countries with emphasis on cultural history and cultural production; interdisciplinary survey. Same as SPAN:2700, PORT:2700, IS:2700.

LAS:4700 Latin American Studies Seminar 3 s.h.

LAS:4990 Independent Study arr.

Rotating Topics

The focus of these courses changes from semester to semester. With prior approval, students may use these courses to satisfy requirements for the Latin American studies certificate or minor when the course focuses on Latin America.

ANTH:3107 Literature and Anthropology 3 s.h.
CINE:3627 Proseminar in Cinema and Culture 1 s.h.
CINE:4618 Topics in World Cinemas 3 s.h.
ENGL:4000 English Honors Seminar 3 s.h.
HIST:2151 Introduction to the History Major 3 s.h.
SPAN:3290 Topics in Cinema and Society 3 s.h.
SPAN:3370 Topics in Literatures and Cultures 3 s.h.
SPAN:4850 Topics in Cultural Studies 3 s.h.
SPAN:4910 Topics in Literary Studies 3 s.h.
SPAN:4920 Topics in Film Studies 3 s.h.

Courses
Linguistics

Chair
• William D. Davies

Undergraduate major: linguistics (B.A.)
Undergraduate minor: linguistics
Graduate degrees: M.A. in linguistics; Ph.D. in linguistics
Faculty: http://clas.uiowa.edu/linguistics/people/faculty
Web site: http://clas.uiowa.edu/linguistics/

Linguistics is the scientific study of human languages, which are highly complex systems. Areas of study include word structure (morphology), speech sounds (phonetics) and their patterns of combination and contrast (phonology), sentence structure (syntax), and meaning relations (semantics).

Linguists study well-known and familiar languages, such as English, Spanish, Russian, and Chinese. They also study less well-known languages and even those languages about which little has been discovered. While human languages are different from one another in many ways, there are broad similarities among them, supporting the idea that the capacity for language is part of human cognitive functions.

The description of formal patterns of human language has a number of applications. Linguistics is connected to psychology and to speech and hearing, in studying how children learn language, how speakers process and interpret language, and how injuries and disorders affect both production and perception of speech. Linguistics is also linked with anthropology and other social sciences in studying how language use relates to culture, region, class, and gender. Linguists collaborate with computer scientists to construct computational representations of syntax and semantics for processing natural languages.

Linguistics has important ties with instruction in foreign languages and in English as a second language (ESL). Studies of how languages are learned are based in part on analysis of the languages in question. They also are grounded strongly in theories of second language acquisition, which in turn are related to theories of how linguistic knowledge is represented in the mind.

People with linguistic training teach ESL and help clinicians retrain people with linguistic disabilities. Some help design school programs for minority groups or intelligence and achievement tests. Linguists also work in occupations related to law, the computer industry, and foreign languages.

High scores on verbal, analytic, and quantitative aptitude tests are indicators of success in linguistics. Although few aspects of the field deal with numbers, students must be able to reason logically and explicitly and deal with formulas and abstract symbols.

Undergraduate Programs of Study
• Major in linguistics (Bachelor of Arts)
• Minor in linguistics

Depending on their vocational goals, students planning to major in linguistics should consider pursuing their studies either through the M.A. in linguistics with a professional focus or through the Ph.D., or they should complete a second major. Appropriate companion fields include languages, anthropology, computer science, English, mathematics, philosophy, psychology, sociology, speech pathology, and elementary and secondary education.

Bachelor of Arts

The Bachelor of Arts with a major in linguistics requires a minimum of 120 s.h., including 30 s.h. of work for the major. Students must maintain a g.p.a. of at least 2.00 in all courses for the major and in all UI courses for the major. They also must complete the College of Liberal Arts and Sciences General Education Program (p. 313).

The major in linguistics prepares students to do basic language analysis in syntax-semantics (sentence patterns and their relation to meanings) and phonology (sound patterns). Elective courses in a variety of subspecialties enable students to tailor the program to their own interests.

The major in linguistics requires the following course work.
All of these:
LING:3001 Introduction to Linguistics 3 s.h.
LING:3005 Articulatory and Acoustic Phonetics 3 s.h.
LING:3010 Syntactic Analysis 3 s.h.
LING:3020 Phonological Analysis 3 s.h.

One of these:
A course in language history, such as
LING:3080
A course in an old language (classical Greek, Latin, Old English, Sanskrit)

And:
Electives chosen in consultation with a faculty advisor, bringing total credit in the major to 30 s.h.

Students must complete no fewer than 15 s.h. of requirements for the major at the University of Iowa, including LING:3005 Articulatory and Acoustic Phonetics, LING:3010 Syntactic Analysis, and LING:3020 Phonological Analysis.

The course LING:1003 English Grammar does not count toward the linguistics major.

TESL Emphasis

As part of the major in linguistics, students may complete an emphasis in Teaching English as a Second Language (TESL). The TESL emphasis can prepare students to teach English to nonnative speakers abroad. It also is excellent preparation for graduate work in second language acquisition. TESL emphasis students complete the requirements for the linguistics major listed above, using the following course work to partially satisfy the electives requirement.

Both of these:
LING:4040 The Structure of English 3 s.h.
LING:4050 Methods of Teaching English as a Second Language 3 s.h.

One of these:
LING:3030 Child Language-Linguistic Perspectives 3 s.h.
LING:3670 Language Processes 3 s.h.
LING:4080 Linguistic Theory and Second Language Acquisition 3 s.h.
LING:4090 Practical Phonetics 3 s.h.

Four-Year Graduation Plan
The following checkpoints list the minimum requirements students must complete by certain semesters in order to stay on the University’s Four-Year Graduation Plan. (Courses in the major are those required to complete the major; they may be offered by departments other than the major department.)

Before the fifth semester begins: Introduction to Linguistics [LING:3001] and one additional linguistics course
Before the seventh semester begins: three more courses in the major and at least 90 s.h. earned toward the degree
Before the eighth semester begins: two more courses in the major
During the eighth semester: enrollment in all remaining course work in the major, all remaining General Education courses, and a sufficient number of semester hours to graduate

Honors in the Major
Students majoring in linguistics have the opportunity to graduate with honors in the major. Departmental honors students must complete the required course work for the major and must prepare an honors thesis, working in consultation with their academic advisor. Honors students in linguistics must be members of the University of Iowa Honors Program, which requires students to maintain a cumulative University of Iowa g.p.a. of at least 3.33 and to fulfill other requirements; visit Honors at Iowa to learn about the University’s honors program.

Minor
The minor in linguistics requires a minimum of 15 s.h. in linguistics courses, including at least 12 s.h. in University of Iowa courses. The minor must include the courses listed below. Students must maintain a cumulative g.p.a. of at least 2.00 in all courses for the minor and in all UI courses for the minor. Course work in the minor may not be taken pass/nonpass.

LING:3001 Introduction to Linguistics 3 s.h.
LING:3005 Articulatory and Acoustic Phonetics 3 s.h.
LING:3010 Syntactic Analysis 3 s.h.
LING:3020 Phonological Analysis 3 s.h.
Additional approved course numbered 3000 or above 3 s.h.

Joint B.A./M.A. with TESL Focus
Undergraduate linguistics majors who plan to earn a master’s degree in linguistics with a Teaching English as a Second Language (TESL) focus have the opportunity to enroll in the joint Bachelor of Arts/Master of Arts degree program. Students in the joint B.A./M.A. program take selected graduate-level courses while they are still undergraduates and may count 12 s.h. of advanced course work toward both degrees. Once students complete the requirements for the bachelor’s degree, they are granted the B.A., and they usually complete the M.A. one year later.

As part of the undergraduate major with TESL focus, B.A./M.A. students take LING:4040 The Structure of English, a course in language history, LING:3001 Introduction to Linguistics, and LING:3005 Articulatory and Acoustic Phonetics.

They substitute some graduate-level course work for normal undergraduate requirements. Instead of taking LING:3010 Syntactic Analysis to fulfill the B.A. syntax requirement, they take LING:5010 Introduction to Syntax, the first course in the mandatory two-course syntax sequence for M.A. students. Instead of taking LING:3020 Phonological Analysis to fulfill the B.A. phonology requirement, they take LING:5020 Introduction to Phonology, the first in the graduate two-course phonology sequence.

In addition, LING:4050 Methods of Teaching English as a Second Language and LING:6010 Syntactic Theory count toward both degrees and typically are taken during the senior year.

To be admitted to the program, students must be working toward an undergraduate major in linguistics, must have completed at least 80 s.h. of undergraduate course work (typically by the end of their fifth semester), and must have a g.p.a. of at least 3.50.

Graduate Programs of Study
- Master of Arts in linguistics
- Doctor of Philosophy in linguistics

Department of Linguistics graduate programs emphasize theory and research. Students interested in non-university careers also may take courses in applied linguistics and other fields, either in connection with doctoral work or as an option in the M.A. program.

Iowa’s linguistics department has particular strengths in phonology, syntax, and second language acquisition (SLA).

The phonology curriculum emphasizes current theoretical perspectives, including optimality theory, and the collection, description, and interpretation of novel phonological and phonetic data. Courses feature extensive work in data analysis and problem solving, focusing on construction and evaluation of phonological theories, particularly in light of new empirical data.

The syntax curriculum includes the dual emphases of empirical and theoretical perspectives. It offers a variety of foundational courses that build analytic and argumentation skills, as well as specialized course work on current issues in syntactic theory. The courses consist of intensive work in problem solving. They combine discovery and description of new linguistic data with exploration of the implications of such facts in testing and constructing syntactic theories.

The curriculum in second language acquisition includes courses that provide an overview and analysis of current SLA research conducted within the generative framework, with emphasis on explaining the linguistic competence of second language learners in terms of universal grammar
An approved specialty area of 18 s.h. also is required, and students must achieve proficiency in a foreign language, as specified by department regulations.

**Master of Arts**

The Master of Arts in linguistics requires a minimum of 31-37 s.h. of graduate credit with thesis, or 37 s.h. without thesis.

All M.A. students complete the following set of required core courses in phonology, syntax, and language acquisition (total of 22 s.h.).

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>LING:3005 Articulatory and Acoustic Phonetics</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>LING:5000 Proseminar: Morphosyntax</td>
<td>1 s.h.</td>
</tr>
<tr>
<td>LING:5010 Introduction to Syntax</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>LING:5020 Introduction to Phonology</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>LING:6010 Syntactic Theory</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>LING:6020 Phonological Theory</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>LING:6080 Generative Second Language</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

One of these:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>LING:5040 Linguistic Field Methods</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>LING:6040 Linguistic Structures</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>LING:6050 Language Universals Linguistic</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

Acquisition

Thesis students also complete at least 9 s.h. of electives and may earn up to 6 s.h. for the thesis. Nonthesis students also complete 15 s.h. of Department of Linguistics course work, which may include a 9 s.h. focus (e.g., teaching English as a second language). A student’s advisor must approve all courses that count toward the degree.

A student with a linguistics background may waive up to 6 s.h. of course work if the department determines that he or she completed comparable work before enrolling in the program.

Comprehensive examinations cover phonology, syntax, and applied linguistics (for students who choose this option).

**Doctor of Philosophy**

The Doctor of Philosophy in linguistics requires a minimum of 72 s.h. of graduate credit, or 73 s.h. for graduates of the M.A. nonthesis program. The highly selective program provides students with a strong foundation in theoretical linguistics and helps them develop the skills they will need to explore the close relationship between linguistics and related disciplines.

The Ph.D. core includes the following course work (total of 18 s.h.).

Two upper-level syntax courses numbered LING:7010 or above
Two upper-level phonology courses numbered LING:7020 or above
Two or more seminars

An approved specialty area of 18 s.h. also is required, and students must achieve proficiency in a foreign language, as specified by department regulations.

To pass the comprehensive examination for the Ph.D., a student must gain approval for two papers of publishable quality. One must be in phonology or syntax. The other should be in an area of the student’s choosing and must be distinct from the area of the first paper.

An oral defense of the dissertation and three years in residence at the University of Iowa are required. In addition, all candidates are required to gain supervised experience in teaching and research.

**Related Certificate: Cognitive Science of Language**

The Graduate College offers the Certificate in Cognitive Science of Language, which requires a minimum of 12-15 s.h. of graduate credit. Designed to complement doctoral study, the certificate program ensures that students have training in interdisciplinary approaches to the study of language along with strong theoretical grounding in their Ph.D. discipline. See Cognitive Science of Language (p. 933) (Graduate College) in the Catalog for more information.

**Admission**

Applicants to the graduate program in linguistics must complete an application form, submit GRE General Test scores, and have three letters of recommendation sent to the Department of Linguistics. Students whose first language is not English must submit Test of English as a Foreign Language (TOEFL) scores. Applications for admission should be submitted as early as possible for the following academic year.

Applicants must meet the admission requirements of the Graduate College; see the Manual of Rules and Regulations of the Graduate College.

**Financial Support**

Applications should be received by February 1 for the following academic year in order to have priority in consideration for financial aid. Applications received after February 1 are considered for remaining aid. Early submission of an application is strongly encouraged.

Exceptionally well-qualified applicants may be eligible for a Presidential Graduate Research Fellowship. Individuals interested in being nominated for a presidential fellowship should submit all application materials by January 15 for the following academic year.

Applications for all awards are considered only for students whose application for admission is complete.

**Facilities**

The Department of Linguistics has a laboratory equipped with 20 computer workstations for small group instruction, individual work, and student research in speech analysis, second language acquisition, computational linguistics, and other areas. The department also has a soundproof booth connected to a computer with software for speech analysis. Remote terminals and personal computers are also available to students.

The departmental reading room, which contains a modest library, provides a common meeting place for faculty and students. Students have considerable influence on
departmental affairs and enjoy a high degree of individual instruction.

Courses

Lower-Level Undergraduate

LING:1000 First-Year Seminar 1 s.h.
Small discussion class taught by a faculty member; topics chosen by instructor; may include outside activities (e.g., films, lectures, performances, readings, visits to research facilities). Requirements: first- or second-semester standing.

LING:1003 English Grammar 3 s.h.
Recognizing nouns, verbs, adverbs, adjectives, and other parts of speech; sentence analysis; subjects, objects; types of sentences; passives, relative clauses; for students with little or no background in English grammar study. Does not count toward the linguistics major.

LING:1010 Language and Society 3 s.h.
Correlations between social and linguistic behavior; methods for discovering and describing socially significant language behavior; educational and political implications of findings. GE: Social Sciences.

LING:1020 Introduction to the Study of Language 3 s.h.
Nontechnical introduction: classification of languages, writing systems, language and the brain, acquisition of first and second languages, bilingualism, animal communication, language and computing.

LING:1030 English Words 3 s.h.
English word formation, basic units of English vocabulary; vocabulary skill expansion; word structure.

LING:1040 Language Rights 3 s.h.
Language minorities and linguistic human rights in the United States and worldwide; language and identity, culture, power; case studies of language rights deprivation. GE: International and Global Issues. Same as ANTH:1040.

LING:1050 Language and Formal Reasoning 3 s.h.
Semantics and sentence structure of English; word meanings, meaning connected to truth conditions, reasoning based on logical connectives and quantifiers, evaluation of valid and invalid arguments. GE: Quantitative or Formal Reasoning.

Individual participation in faculty research projects.

LING:2090 Special Project arr.

LING:2900 Language and Gender 3 s.h.
Gender-related language variation; current research on gender-specific linguistic forms and usage in the United States and other language communities; introduction to relevant principles of linguistic theory and analysis. GE: Values, Society, and Diversity.

Upper-Level Undergraduate and Graduate

LING:3001 Introduction to Linguistics 3 s.h.
Introduction to the study of human language: sounds and their contrasts and variation, words and meaningful subunits, sentence structure, historical change.

LING:3005 Articulatory and Acoustic Phonetics 3 s.h.
Production and transcription of sounds in human languages; physics of sound, computer analysis of speech sounds. Offered fall semesters. Same as SLA:3400.

LING:3010 Syntactic Analysis 3 s.h.
Introduction to sentence structures and basic abstract relations that characterize them, including word category, word order, hierarchical organization; problem sets from English and other languages as basis for discussion, analysis. Offered spring semesters. Prerequisites: LING:3001.

LING:3020 Phonological Analysis 3 s.h.
Introduction to analysis of sound systems; generative phonological theory; practice in phonological analysis using data from a variety of languages. Offered spring semesters. Prerequisites: LING:3001 and LING:3005.

LING:3030 Child Language-Linguistic Perspectives 3 s.h.
Linguistic theory as applied to first-language learning, including acquisition of sounds, syntax and word meaning, acquisition strategies, properties of input, theories of first-language acquisition. Prerequisites: LING:3001.

LING:3040 Topics in Linguistics 3 s.h.
Varied topics in linguistics; for undergraduates. Prerequisites: LING:3005.

LING:3080 History of the English Language 3 s.h.
Development of phonological and grammatical structure of English, from Old to Modern English; dialectal differentiation in English.

LING:3116 Basic Neuroscience for Speech and Hearing 3 s.h.
Basic anatomy, physiology of central nervous system; emphasis on neural systems involved in normal and disordered communication. Offered fall semesters. Requirements: biology, zoology, or physiology course. Same as CSD:3116.
LING:3117 Psychology of Language 3 s.h.
Theoretical, empirical investigations of linguistic behavior; behaviorist, rationalist models in context of formal linguistic structure and context of models of speech perception and production. Offered spring semesters. Prerequisites: LING:3001. GE: Social Sciences. Same as CSD:3117.

LING:3118 Language Acquisition 1-3 s.h.

LING:3302 Introduction to Chinese Linguistics 3 s.h.
Aspects of modern Chinese linguistics, such as Chinese phonology, syntax, pedagogical grammar, history of the language. Taught in English. Same as SLA:3302, CHIN:3302.

LING:3670 Language Processes 3 s.h.
Psychological processes involved in using languages, including speech perception and production, the meaning of words, understanding and producing sentences, and basics of discourse and pragmatics; developmental and neural bases of language processes. Prerequisites: PSY:2701. Requirements: grade of C‑ or higher in PSY:2601, grade of C‑ or higher in PSY:2810, and psychology major; or nonmajor and CSD:1015 or LING:3001. Same as PSY:3670.

LING:4020 Morphology 3 s.h.
Lexicon and principles of word formation; principal processes of inflection, derivation, and compounding found in the world's languages; relation to phonology, syntax; practice in morphological analysis from a variety of languages. Prerequisites: LING:3001.

LING:4030 Introduction to Computational Linguistics 3 s.h.
Introduction to computational linguistics; focus on theory and practice of natural language processing and syntactic and semantic analysis. Same as CS:4460.

LING:4040 The Structure of English 3 s.h.
Descriptive analysis of English, including word and sentence structure; focus on relevance to teaching English as a second language. Offered fall semesters. Prerequisites: LING:3001.

LING:4050 Methods of Teaching English as a Second Language 3 s.h.
Observations of ESL and intensive English classes at the University; design and presentation of short lessons, test evaluation, demonstrations of innovative approaches of the last decade; materials. Offered spring semesters. Prerequisites: LING:3005 and LING:4040. Same as SLA:4401.

LING:4060 Introduction to Semantics 3 s.h.
Overview of meaning in natural language mapped onto lexical and syntactic structures; formal logical and set theory description; discussion of truth conditions, compositionality, presupposition, definiteness, quantification in natural language. Requirements: course in syntax.

LING:4080 Linguistic Theory and Second Language Acquisition 3 s.h.
Introduction of research results obtained by generative second language acquisition framework and their implications for classroom teaching methods; current views of language architecture; focus on inflectional morphology and linguistic interfaces, which have been proposed to be severe bottlenecks for acquisition; research findings on acquisition of syntax, phonology, semantics, linguistic pragmatics; pedagogical implications of these findings. Prerequisites: LING:3010 and LING:3020. Same as SLA:4080.

LING:4090 Practical Phonetics 3 s.h.
Contemporary articulatory and acoustic research, including second-language acquisition, elicitation and computer analysis of primary linguistic data. Prerequisites: LING:3005.

LING:4589 Philosophy of Language 3 s.h.
Main issues in contemporary philosophy of language; topics may include theories of meaning, truth, belief, interpretation, translation, speech acts, performatives, rule following, reference, naming, propositional attitudes, metaphor. Same as PHIL:4589.

Graduate

LING:5000 Proseminar: Morphosyntax 1 s.h.
Basic morphological analysis of languages other than English; morphological markers of syntactic relations (morphosyntax), such as case/agreement, possession, switch reference and other inflectional marking. Corequisites: LING:5010.

LING:5010 Introduction to Syntax 3 s.h.
Methods and argumentation for formal analysis of sentence structure through induction from language data of central concepts and relations; hypothesis testing, empirical bases of theoretical concepts. Corequisites: LING:5000. Same as SLA:5010.

LING:5020 Introduction to Phonology 3 s.h.
Analysis of sound systems, focus on early generative phonological theory; extensive practice in analysis using data from a variety of languages; linguistic argumentation. Prerequisites: LING:3005. Same as SLA:5020.

LING:5030 First Language Acquisition 3 s.h.
Child language from a crosslinguistic perspective. Prerequisites: LING:3005 and (LING:4040 or LING:5010). Same as SLA:5401.
LING:5040 Linguistic Field Methods
Collection and analysis of primary linguistic data from unfamiliar language; methods of elicitation, theory, practical problems; extensive practice in eliciting data from a consultant. Prerequisites: LING:3005. Requirements: a course in syntax and a course in phonology.

LING:5070 Practicum in Teaching English as a Second Language
Practical experience in TESL, observation and participation in intensive English classes; design and teaching of ESL classes under supervision. Offered summer sessions. Prerequisites: LING:4050.

LING:5090 Special Projects
Theoretical and applied topics.

LING:6010 Syntactic Theory
Current syntactic theory examined through analysis of data sets, readings in recent research; emphasis on argument construction, statement of formal principles. Offered spring semesters. Prerequisites: LING:5010. Same as SLA:6010.

LING:6020 Phonological Theory
Post-SPE phonological theory, including autosegmental phonology, feature geometry, the syllable, optimality theory. Prerequisites: LING:5020. Same as SLA:6011.

LING:6040 Linguistic Structures
Grammatical and/or phonological structure of a selected language or language family.

LING:6050 Language Universals Linguistic Typology
Proposed universal principles of linguistic structure; approaches to classification of languages on the basis of grammatical and phonological structure. Prerequisites: LING:5010.

LING:6080 Generative Second Language Acquisition
Overview of current second-language acquisition research in the generative linguistic framework; focus on characterizing second language learners' linguistic competence and how it is constrained by principles of universal grammar. Offered fall semesters. Prerequisites: (LING:3010 or LING:5010) and (LING:3020 or LING:5020). Same as SLA:6452.

LING:6101 Cognitive Science of Language Proseminar I
Survey of five major disciplines within language sciences: formal linguistic, communication disorders, psychological, neuroscience, and computational approaches. Requirements: graduate standing in communication sciences and disorders, linguistics, psychology, or neuroscience. Same as PSY:6102, CSD:6102.

LING:6190 Topics in Comparative Romance Linguistics
Comparative study of phonology, morphology, or syntax of the main Romance languages as informed by linguistic theory; diachronic or synchronic perspective. Recommendations: additional graduate course work in linguistics. Same as SPAN:6190, CLSA:6990, SLA:6302.

LING:6415 Seminar: Language, Gender, and Sexuality
Role of language and discourse in cultural constructions of gender identities and relations, including domination and subordination; theoretical perspective and methodological approaches that have shaped thought on the language/gender nexus. Same as ANTH:6415, GWSS:6415.

LING:6900 Master's Thesis

LING:7000 Seminar: Spanish Linguistics
Same as SPAN:7000.

LING:7010 Advanced Syntactic Theory
Recent developments in syntax; comparison of theories, argumentation, and uses of data. Prerequisites: LING:6010. Same as SLA:7401.

LING:7020 Advanced Phonological Theory
Current issues. Prerequisites: LING:6020. Same as SLA:7402.

LING:7040 Topics in Linguistic Theory
Varied topics in linguistic theory; for graduate students.

LING:7090 Seminar: Problems in Linguistics
Intensive study of theoretical and practical problems. Same as SLA:7404.

LING:7100 Special Projects

LING:7900 Ph.D. Thesis
Mathematics

Chair

- Daniel D. Anderson

**Undergraduate major:** mathematics (B.A., B.S.)

**Undergraduate minor:** mathematics

**Graduate degrees:** M.S. in mathematics; Ph.D. in mathematics

**Faculty:** http://www.math.uiowa.edu/people/faculty

**Web site:** http://www.math.uiowa.edu/

Mathematics is a basic tool for understanding modern society as well as a crucial requirement for many careers in science, engineering, business, and the professions. Research in this living, dynamic subject is at the highest level in history; CareerCast.com also ranked mathematician as the best job to hold in 2014.

An undergraduate degree in mathematics prepares students for a variety of careers in government and business, for secondary teaching, for graduate study, and with proper planning, for a variety of professional programs. Graduate study is advisable for some business and governmental positions and for college and university teaching and research. The department also offers a minor and partners with the Departments of Computer Science and Statistics and Actuarial Science to offer the undergraduate Certificate in Large Data Analysis (p. 445).

**Undergraduate Programs of Study**

- Major in mathematics (Bachelor of Arts, Bachelor of Science)
- Minor in mathematics

Students majoring in mathematics (either B.A. or B.S.) enroll in one of three programs: Program A is for students who plan to work in business or government or pursue graduate study in mathematics; program B is for students who seek secondary school teaching licensure; and program C is for those seeking specialization in a math-related area, such as actuarial science, biomathematics, business, computer science, economics, physics, statistics, and so forth. Program C may be especially appropriate for students who plan to seek a math-related job after earning a bachelor's degree, rather than going on to graduate study.

**B.A. OR B.S. WITH SECOND MAJOR**

Students majoring in mathematics may choose to earn a second major in computer science, statistics, actuarial science, or other disciplines. They must satisfy all requirements of program A, program B, or program C in mathematics as well as all requirements for the second major. For more information, consult an advisor and see the department's Handbook for Undergraduate Majors.

**POST-CALCULUS MATHEMATICS REQUIREMENT**

Students majoring in mathematics (Bachelor of Arts or Bachelor of Science) must earn at least 15 s.h. in post-calculus mathematical sciences courses offered by the University of Iowa; students may not count transfer courses or credit by exam toward this requirement. At least 12 s.h. of the required 15 s.h. in post-calculus courses must be earned in Department of Mathematics courses (prefix MATH) or in courses cross-listed with the department.

Post-calculus courses in the Department of Mathematics are numbered 2000 or above, excluding these:

- MATH:3700 Introduction to Matrix Theory;
- MATH:3750 Classical Analysis;
- MATH:3995 Topics in Mathematics;
- MATH:3996 Individual Study and Honors in Mathematics;
- MATH:3997 Readings in Mathematics;
- MATH:4010 Basic Analysis; and
- MATH:4020 Basic Abstract Algebra.

Post-calculus courses offered by the Department of Computer Science, and the Department of Statistics and Actuarial Science must have a calculus prerequisite.
UPPER-LEVEL MATHEMATICS REQUIREMENT
All mathematics majors must take at least one upper-level math course offered by the Department of Mathematics. Upper-level math courses include MATH:3900 Introduction to Mathematics Research and courses numbered 4000 or above, excluding these:
MATH:4010 Basic Analysis;
MATH:4020 Basic Abstract Algebra; and
MATH:4120 History of Mathematics.

Program A
Program A is primarily for students who plan to work in business or government or to pursue graduate study in mathematics.

PROGRAM A: CORE COURSES
Students must complete a two-semester sequence of calculus I-II. Advanced placement credit, CLEP credit, and credit granted through the Mathematics Incentive Program is accepted for all or part of the calculus requirement.

B.A. and B.S. students complete the following core courses.
MATH:1850 & MATH:1860 Calculus I-II 8 s.h.
MATH:2700 Introduction to Linear Algebra 4 s.h.
MATH:2850 Calculus III 4 s.h.
MATH:3600 Introduction to Ordinary Differential Equations 3 s.h.
MATH:3720 Introduction to Abstract Algebra I 4 s.h.
MATH:3770 Fundamental Properties of Spaces and Functions I 4 s.h.

More advanced courses may be substituted for the core courses, with Department of Mathematics approval.

PROGRAM A: ELECTIVES
B.A. students complete four electives (12-16 s.h.), including at least one upper-level mathematics course.

B.S. students complete six electives (18-24 s.h.), including at least three upper-level mathematics courses.

Mathematics
Students may choose from mathematics courses numbered MATH:2150 Foundations of Geometry, MATH:3800 Elementary Numerical Analysis or courses above MATH:3800, excluding MATH:4010 Basic Analysis and MATH:4020 Basic Abstract Algebra.

Computer Science
Students may choose computer science courses numbered CS:1210 through CS:4740, excluding CS:2111 Programming Practice, CS:3110 Introduction to Informatics, CS:3210 Programming Languages and Tools, CS:3910 Informatics Project, CS:3980 Topics in Computer Science I, and CS:3990 Honors in Computer Science or Informatics.

Statistics and Actuarial Science

Among the courses listed above, only one of the following three courses, STAT:2020, STAT:3100, or STAT:3120 can be counted; although none of these courses can be counted if taken after STAT:4100.


Consult the department's Handbook for Undergraduate Majors for a complete list of electives in computer science, and statistics and actuarial science.

Program B
Program B is intended for students seeking secondary school teaching licensure. In addition to earning a Bachelor of Arts or Bachelor of Science with a major in mathematics, students must complete the Teacher Education Program (TEP); see "B.A. or B.S. with Teacher Licensure" below.

PROGRAM B: CORE COURSES
Students must complete a two-semester sequence of calculus I-II. Advanced placement credit, CLEP credit, and credit earned through the Mathematics Incentive Program is accepted for part or all of the calculus requirement. B.A. and B.S. students complete the following core courses.

All of these:
MATH:1850 & MATH:1860 Calculus I-II 8 s.h.
MATH:2150 Foundations of Geometry 3 s.h.
MATH:2700 Introduction to Linear Algebra 4 s.h.
MATH:2850 Calculus III 4 s.h.
MATH:3720 Introduction to Abstract Algebra I 4 s.h.
MATH:3770 Fundamental Properties of Spaces and Functions I 4 s.h.
CS:1210 Computer Science I: Fundamentals 4 s.h.
STAT:3120 Probability and Statistics 4 s.h.

One of these:
MATH:4050 Introduction to Discrete Mathematics 3 s.h.
MATH:4060 Discrete Mathematical Models 3 s.h.

More advanced courses may be substituted for the core courses, with Department of Mathematics approval.

PROGRAM B: ELECTIVES
B.A. students in Program B must take at least one additional Department of Mathematics post-calculus course (3-4 s.h.). B.S. students in Program B must take at least three additional Department of Mathematics post-calculus courses (9-12 s.h.), including two chosen from MATH:3900 Introduction to Mathematics Research and courses numbered 4000 or above, excluding MATH:4010 Basic Analysis and MATH:4020 Basic Abstract Algebra. The post-calculus courses must be chosen avoiding duplication and regression with the core math courses, particularly when the engineering math courses are considered. With the department's approval, eligible students are encouraged to substitute more advanced courses in the same subject area for any of the electives. The Handbook for Undergraduate Majors offers advice on course selection.
Program C

Program C enables students to specialize in a math-related subtrack, such as the mathematics of making optimal business decisions, risk management and insurance, economics, finance, physics, chemistry, biostatistics, biomathematics, computer science, statistics and actuarial science, or all departments within the College of Engineering. In consultation with the faculty advisor, each student builds on the Program C core to prepare a subtrack plan of study tailored to his or her interests and academic or career goals. The proposed study plan must be approved by the Department of Mathematics undergraduate committee.

Students must file their subtrack plan of study before they begin their senior year; they use the Program C Plan of Study form, available at the Department of Mathematics office. The Handbook for Undergraduate Majors has plans for choosing electives in several areas; students may use these or propose other plans.

PROGRAM C: CORE COURSES

Students must complete a two-semester sequence of calculus I-II. Advanced placement credit, CLEP credit, and credit earned through the Mathematics Incentive Program is accepted for part or all of the calculus requirement. B.A. and B.S. students complete the following core math courses.

MATH:1850 & MATH:1860 Calculus I-II 8 s.h.
MATH:2700 Introduction to Linear Algebra 4 s.h.
MATH:2850 Calculus III 4 s.h.
One additional proof course such as MATH:3720 or MATH:3770 4 s.h.

Some subtracks require additional core courses; consult the Handbook for Undergraduate Majors. Additional core courses count as required electives (see "Program C: Electives" below). Students who specialize in engineering should consult the Department of Mathematics.

More advanced courses may be substituted for the core courses, with Department of Mathematics approval.

PROGRAM C: ELECTIVES

B.A. students choose six or seven electives, depending on their subtrack. B.S. students choose eight or nine approved electives. All electives must be offered for 3-4 s.h. of credit. At least three of the electives must be offered by the Departments of Computer Science, Mathematics, and Statistics and Actuarial Science (prefixes CS, MATH, and STAT or ACTS). At least two of the three electives must be post-calculus math courses (prefix MATH). All mathematics majors must take 15 s.h. of post-calculus math courses and at least one upper-level math course; see "Post-Calculus Mathematics Requirement" and "Upper-Level Mathematics Requirement" above.

Some subtracks require additional core courses (see "Program C: Core Courses" above); the additional core courses count as required electives. For a list of suggested subtracks and restrictions on electives in each subtrack, consult the Handbook for Undergraduate Majors.

B.A. or B.S. with Teacher Licensure

Mathematics majors interested in earning licensure to teach in elementary and/or secondary schools must complete the College of Education's Teacher Education Program (TEP) in addition to the requirements for the major and all requirements for graduation. The TEP requires several College of Education courses and student teaching. Contact the Office of Education Services for details.

Students must satisfy all degree requirements and complete Teacher Education Program licensure before degree conferral.

Students majoring in mathematics who wish to earn teacher licensure should choose program B in the mathematics major (Bachelor of Arts or Bachelor of Science); see "Program B" above.

Four-Year Graduation Plan

The following checkpoints list the minimum requirements students must complete by certain semesters in order to stay on the University's Four-Year Graduation Plan. (Courses in the major are those required to complete the major; they may be offered by departments other than the major department.)

Note: Many mathematics courses must be taken in sequence, so students must begin major requirements as early as possible, and individual plans of study must be constructed carefully. The mathematics major typically requires 11 or 12 courses for Bachelor of Arts students and 13 or 14 courses for Bachelor of Science students. Students must choose program A, B, or C by the end of the third semester and must remain in their chosen program until they graduate in order to stay on track for the four-year graduation plan.

Before the third semester begins: course work in the major through second-semester calculus

Before the fifth semester begins: two or three more courses in the major

Before the seventh semester begins: three or four more courses in the major and at least 90 s.h. earned toward the degree

Before the eighth semester begins: two or three more courses in the major

During the eighth semester: enrollment in all remaining course work in the major, all remaining General Education courses, and a sufficient number of semester hours to graduate

Honors in the Major

Students majoring in mathematics have the opportunity to graduate with honors in the major. Departmental honors students must complete all requirements for the major and must maintain a g.p.a. of at least 3.40 in the major and overall. To graduate with honors in the major, they must complete one of the options below.

Option 1: complete four of the courses below, including a two-course sequence, with a B average for the four courses.

MATH:4090 A Rigorous Introduction to Abstract Algebra 4 s.h.
MATH:4210 Foundations of Analysis 4 s.h.
MATH:5000 & MATH:5010 Abstract Algebra I-II 8 s.h.
MATH:5200 & MATH:5210 Introduction to Analysis I-II 8 s.h.

Before the third semester begins: course work in the major through second-semester calculus

Before the fifth semester begins: two or three more courses in the major

Before the seventh semester begins: three or four more courses in the major and at least 90 s.h. earned toward the degree

Before the eighth semester begins: two or three more courses in the major

During the eighth semester: enrollment in all remaining course work in the major, all remaining General Education courses, and a sufficient number of semester hours to graduate

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MATH:4210 Foundations of Analysis 4 s.h.
MATH:5000 & MATH:5010 Abstract Algebra I-II 8 s.h.
MATH:5200 & MATH:5210 Introduction to Analysis I-II 8 s.h.
MATH:5400 & MATH:5410 General Topology - Introduction to Smooth Manifolds  8 s.h.
MATH:5600 & MATH:5700 Nonlinear Dynamics with Numerical Methods - Partial Differential Equations with Numerical Methods  8 s.h.

Mathematics courses (prefix MATH) numbered 6000 or above, to be approved by the honors advisor in advance

Option 2: complete an honors project comparable to taking several of the courses above, approved by the honors advisor and the thesis supervisor. Students who choose this option typically register for MATH:3996 Individual Study and Honors in Mathematics for 3 s.h. or more. They must find a faculty member willing to supervise their project; contact the department for help finding a project supervisor. Contact the Department of Mathematics honors advisor for more information.

In addition to honors in their majors, undergraduate students have a variety of opportunities for honors study and activities through membership in the University of Iowa Honors Program; visit Honors at Iowa to learn about the University's honors program.

Minor

The minor in mathematics requires a minimum of 15 s.h. in mathematics courses, including 12 s.h. earned in post-calculus courses taken in the Department of Mathematics at the University of Iowa. Students must maintain a g.p.a. of at least 2.00 in all courses for the minor and in all UI courses for the minor. Course work in the minor may not be taken pass/nonpass. Transfer credit and credit by examination do not count toward the 12 s.h. of post-calculus courses.

Courses numbered 2000 or above are considered post-calculus, excluding these:

- MATH:3700 Introduction to Matrix Theory;
- MATH:3750 Classical Analysis;
- MATH:3995 Topics in Mathematics;
- MATH:3996 Individual Study and Honors in Mathematics;
- MATH:3997 Readings in Mathematics;
- MATH:4010 Basic Analysis; and
- MATH:4020 Basic Abstract Algebra.

Students who have taken MATH:1560, MATH:2550, MATH:2560, and MATH:3550 at the University of Iowa may satisfy the minor's post-calculus course requirement by taking one additional course chosen from MATH:2150 or courses numbered MATH:3720 or above, excluding these:

- MATH:3750 Classical Analysis;
- MATH:3995 Topics in Mathematics;
- MATH:3996 Individual Study and Honors in Mathematics;
- MATH:3997 Readings in Mathematics;
- MATH:4010 Basic Analysis; and
- MATH:4020 Basic Abstract Algebra.

For more information, see the department's Handbook for Undergraduate Majors.

Related Certificate: Large Data Analysis

The Certificate in Large Data Analysis (p. 445) can be earned in addition to a B.A. or B.S. degree in mathematics. The certificate focuses on handling, processing, and extracting information from large data sets. As computers have become faster and smaller, more information can be gathered and used for a large range of applications, such as for weather forecasting; identifying people and trends utilizing Facebook or other social media; understanding the genome; and searching for disease causes and cures, as well as many other areas of study. The certificate is interdisciplinary, requiring courses from three areas of study—computer science, mathematics, and statistics. Computer science teaches students how to handle large amounts of data and how to implement the algorithms to process them while statistics helps students to understand what can and cannot be legitimately inferred from the data. Mathematics focuses on algorithms and methods for connecting these important areas of data collection.

Graduate Programs of Study

- Master of Science in mathematics
- Doctor of Philosophy in mathematics

Master of Science

The Master of Science in mathematics requires a minimum of 30 s.h. of graduate credit. Students earn the degree through courses and comprehensive examinations. There is no M.S. thesis. Requirements (courses and comprehensive examination areas) may be modified with the department's consent.

Four different programs (I, II, III, and IV) lead to the M.S. in mathematics. Program II is designed for secondary school teachers.

Program I

Program I prepares students for further study of pure and applied mathematics and for employment in government and business. M.S. students in program I take several courses and pass two comprehensive examinations. Students must earn a grade of B-minus or higher in six of the courses and maintain a g.p.a. of at least 2.75 in all mathematics courses taken for the degree.

Program I requires the following courses.

- MATH:5000 & MATH:5010 Abstract Algebra I-II  8 s.h.
- MATH:5200 & MATH:5210 Introduction to Analysis I-II  8 s.h.
- MATH:5400 General Topology  4 s.h.
- MATH:5410 Introduction to Smooth Manifolds  4 s.h.
- MATH:5600 Nonlinear Dynamics with Numerical Methods  4 s.h.
- MATH:5700 Partial Differential Equations with Numerical Methods  4 s.h.

The two comprehensive examinations are chosen from algebra, analysis, differential equations with numerical methods, and topology.

Program II

Program II is designed for secondary school teachers. Program II requirements are similar to those for
programs I and III, but program II students complete two mathematics education courses and a minimum of 24 s.h. in Department of Mathematics courses. The following courses may be used to satisfy the program II mathematics course requirements.

MATH:3600 Introduction to Ordinary Differential Equations 2-3 s.h.
Mathematics courses (prefix MATH) numbered 4000 or above

Students are encouraged to consult with the mathematics education faculty when planning their course of study.

**Program III**

Program III focuses on applied mathematics. Students in program III take several courses and pass two comprehensive examinations. Students must earn a grade of B-minus or higher in six of the courses and maintain a g.p.a. of at least 2.75 in all mathematics courses taken for the M.S.

Program III requires the following courses.

All of these:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH:5200 &amp; MATH:5210 Introduction to Analysis I-II</td>
<td>8 s.h.</td>
</tr>
<tr>
<td>MATH:5600 Nonlinear Dynamics with Numerical Methods</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>MATH:5700 Partial Differential Equations with Numerical Methods</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>MATH:5800 Numerical Analysis: Nonlinear Equations and Approximation Theory</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>MATH:5810 Numerical Analysis: Differential Equations and Linear Algebra</td>
<td>4 s.h.</td>
</tr>
</tbody>
</table>

Both courses in group A, or two courses from group B:

Group A

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH:5400 General Topology</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>MATH:5410 Introduction to Smooth Manifolds</td>
<td>4 s.h.</td>
</tr>
</tbody>
</table>

Group B

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH:4060 Discrete Mathematical Models</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>MATH:4610 Continuous Mathematical Models</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>MATH:4820 Optimization Techniques</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

The two comprehensive examinations are chosen from analysis, differential equations with numerical methods, numerical analysis, and topology.

**Program IV**

Program IV is designed for nondepartmental students working toward a Ph.D. in areas of study that require mathematical knowledge. The program has no specific required courses.

Students in program IV are considered to have passed the comprehensive examination for the master’s degree in mathematics if they have maintained a g.p.a. of at least 3.00 in all mathematics courses taken for the M.S. in mathematics and have successfully completed the Ph.D. comprehensive examination in their area of study.

Students in program IV are assigned a mathematics advisor, who works with them and their major advisor to plan an appropriate curriculum for the M.S. in mathematics. A suitable program of study should be approved by a mathematics advisor before the student takes the Ph.D. comprehensive examination, and a member of the mathematics faculty should serve on the Ph.D. comprehensive examination committee.

**Doctor of Philosophy**

The Doctor of Philosophy in mathematics requires a minimum of 72 s.h. of graduate credit. The program places strong emphasis on preparation for research and teaching. The department maintains no division between pure and applied mathematics. It cooperates in interdisciplinary doctoral programs with the College of Education (see Teaching and Learning (p. 793) in the Catalog) and the Program in Applied Mathematical and Computational Sciences (p. 925).

Ph.D. students in mathematics must satisfy the following requirements for course work (credits and breadth), examinations, foreign language, and the Ph.D. thesis.

Students must spend at least three years in residence at a graduate college, including at least one year at the University of Iowa. They also should enroll in specific courses designated as preparatory for the Ph.D. examinations (consult the Department of Mathematics graduate studies director).

To further encourage mathematical breadth, students must earn at least 33 s.h. of graduate credit in regular courses equivalent to or more advanced than Ph.D. comprehensive examination preparatory courses. For a list of accepted Department of Mathematics courses numbered 6000 or above and rules to ensure proper distribution, contact the department.

The Ph.D. examinations consist of a qualifying exam and a comprehensive exam. Students choose three areas from the department’s list of qualifying examination areas: algebra, analysis, differential equations with numerical methods, and topology. For each qualifying area, there is a two-semester course sequence numbered 5000 or above that is designated as preparatory, although exams may differ from course content. The three parts of the qualifying exam are taken over a two-week period. An exam committee gives one grade (pass, fail, conditional pass) on the entire three-part qualifying exam. The committee has five faculty members, with at least two from each exam area. If the grade is fail, the committee has the option to consider each part of the exam separately, offering the student the option of pass in one or two of the areas and fail in the other(s).

The Ph.D. comprehensive exam tests students on research-related topics.

Candidates also take an oral final examination on their dissertation material.

Ph.D. students are required to demonstrate reading proficiency in French, German, or Russian by passing a reading test administered by the appropriate language department, earning a grade of B or higher in the second semester of a sequence offered by the appropriate language department, or passing a special examination approved by the Department of Mathematics graduate committee. Courses that do not carry graduate credit may be used to satisfy this requirement, but they do not count toward the required 72 s.h. of graduate credit. Students must demonstrate language competence after enrolling in graduate school.
The most distinctive aspect of a Ph.D. is the thesis. The department expects the thesis to be an original mathematical work comparable in content and writing quality to that found in standard published research journals. The thesis is written under the supervision of a mathematics department faculty member and must be approved by the Ph.D. defense committee.

**Admission**

Applicants must meet the admission requirements of the Graduate College; see the Manual of Rules and Regulations of the Graduate College. Applicants to the Ph.D. program have preference for admission and funding.

**Master of Science**

Admission to M.S. programs I, II, and III is competitive and based on a combination of undergraduate course work and grades, letters of recommendation, and test scores. Numerical standards change every year or so; exceptions may be made to the following guidelines.

Applicants must have completed work in an undergraduate program equivalent to the major in mathematics offered by the University of Iowa Department of Mathematics, with an undergraduate g.p.a. of at least 3.20. Relevance and difficulty of courses are considered when evaluating grades; grades of C or lower in mathematics courses must be balanced by grades of A. Individuals whose preparation does not meet this requirement may be admitted conditionally and are asked to take specific courses that cover deficiencies.

Applicants must score at least 155 on the quantitative section of the revised Graduate Record Exam (GRE) General Test (700 on the old GRE). Applicants whose first language is not English are required to demonstrate their competence in English, normally by scoring at least 105 (Internet-based) on the Test of English as a Foreign Language (TOEFL).

Applicants must submit three letters of recommendation.

**Doctor of Philosophy**

Admission to the Ph.D. program is competitive and based on a combination of undergraduate or graduate course work and grades, letters of recommendation, and test scores. Required scores on the GRE quantitative section and TOEFL are the same as those for admission to the M.S. program, but applicants to the Ph.D. program must have an undergraduate or graduate g.p.a. of at least 3.40.

**Courses**

Courses numbered below 3000 are not open to graduate students.

**Pre-Lower Level Undergraduate**

Credit earned in MATH:0100 Basic Algebra I and MATH:0300 Basic Geometry does not count toward graduation.

**MATH:0100 Basic Algebra I** 3 s.h.

Percents, ratio and proportion, algebraic expressions and operations, simple products, linear and quadratic equations, simultaneous equations, exponents and radicals; emphasis on verbal problems. GE: Algebra I - Developmental.

**MATH:0300 Basic Geometry** 3 s.h.

Angles, triangles, polygons, areas, Pythagorean theorem, similar triangles, circles, loci, related topics. Offered spring semesters. Requirements: grade of C- or higher in MATH:0100 or satisfactory score on math placement exam. Recommendations: it is strongly recommended that students whose math placement score is older than one year retake the math placement test for accurate placement and success in the course. GE: Geometry - Developmental.

**Lower-Level Undergraduate**

The sequences MATH:1850 Calculus I and MATH:1860 Calculus II, and MATH:1550 Engineering Mathematics I: Single Variable Calculus and MATH:1560 Engineering Mathematics II: Multivariable Calculus are similar, but they cover the material in a different order and with different emphases. Students who have taken the first semester or one sequence must consult with their advisor before taking the second semester of the other sequence; they also must take a math placement test.

Students who consider taking MATH:1860 Calculus II after MATH:1380 Calculus and Matrix Algebra for Business or MATH:1460 Calculus for the Biological Sciences must consult with their advisor.

**MATH:1000 First-Year Seminar** 1 s.h.

Small discussion class taught by a faculty member; topics chosen by instructor; may include outside activities (e.g., films, lectures, performances, readings, visits to research facilities). Requirements: first- or second-semester standing.

**MATH:1005 College Algebra** 4 s.h.

Algebraic techniques, equations and inequalities, functions and graphs, exponential and logarithmic functions, systems of equations and inequalities. Requirements: grade of C- or higher in MATH:0100 or satisfactory score on math placement exam. Recommendations: it is strongly recommended that students whose math placement score is older than one year retake the math placement test for accurate placement and success in the course.

**MATH:1010 Trigonometry** 3 s.h.

Trigonometric functions, solutions of right and oblique triangles, complex numbers. Requirements: grade of C- or higher in MATH:1005 or satisfactory score on math placement exam. Recommendations: it is strongly recommended that students whose math placement score is older than one year retake the math placement test for accurate placement and success in the course.

**MATH:1020 Elementary Functions** 4 s.h.

Functions, relations, coordinate systems; properties and graphs of algebraic, trigonometric, logarithmic, exponential functions; inverse trigonometric functions; properties of lines, conic sections. Requirements: grade of C- or higher in MATH:1005 or satisfactory score on math placement exam. Recommendations: it is strongly recommended that students whose math placement score is older than one year retake the math placement test for accurate placement and success in the course. GE: Quantitative or Formal Reasoning.
MATH:1120 Logic of Arithmetic 4 s.h.
Mathematical and conceptual foundations of the natural numbers used in elementary school arithmetic teaching; multiple algorithmic approaches to arithmetic and its mathematical and contextual relationships, extensions to integers, rational and irrational numbers, multiple representations. Requirements: grade of C- or higher in MATH:1020 or a more advanced math course, or satisfactory score on math placement exam. Recommendations: it is strongly recommended that students whose math placement score is older than one year retake the math placement test for accurate placement and success in the course. GE: Quantitative or Formal Reasoning.

MATH:1130 Theory of Arithmetic 3 s.h.
Sets, cardinalities, reasoning in proofs, counterexamples, arithmetic with integers, rationals, irrationals, number theory, functions, algebraic expressions. Requirements: grade of C- or higher in MATH:1020 or a more advanced math course, or satisfactory score on math placement exam. Recommendations: it is strongly recommended that students whose math placement score is older than one year retake the math placement test for accurate placement and success in the course. GE: Quantitative or Formal Reasoning.

MATH:1140 Mathematical Basis of Elementary Geometry 3 s.h.
Points, lines, planes; measurement, two- and three-dimensional coordinate geometry, transformational geometry and vectors; applications of geometry to solve real-world problems. Requirements: (elementary teacher certificate candidacy or certification) and (grade of C- or higher in MATH:0100 or satisfactory score on math placement exam). Recommendations: it is strongly recommended that students whose math placement score is older than one year retake the math placement test for accurate placement and success in the course. GE: Quantitative or Formal Reasoning.

MATH:1240 Finite Mathematics 4 s.h.
Introduction to logic, set theory, linear equations and inequalities, linear programming, matrix algebra, combinatorial probability. Requirements: MATH:1005 or satisfactory score on math placement exam. Recommendations: it is strongly recommended that students whose math placement score is older than one year retake the math placement test for accurate placement and success in the course. GE: Quantitative or Formal Reasoning.

MATH:1340 Mathematics for Business 4 s.h.
Algebraic techniques, functions and functional models, exponential and logarithmic functions and models, linear programming, informal introduction to calculus; examples and applications from management, economic sciences, related areas. Requirements: grade of C- or higher in MATH:1005 or satisfactory score on math placement exam. Recommendations: it is strongly recommended that students whose math placement score is older than one year retake the math placement test for accurate placement and success in the course. GE: Quantitative or Formal Reasoning.

MATH:1380 Calculus and Matrix Algebra for Business 4 s.h.
Quantitative methods for treating problems arising in management, economic sciences, related areas; introduction to differential and integral calculus, systems of linear equations and matrix operations. Requirements: grade of C- in MATH:1005 or MATH:1340, or satisfactory score on math placement exam. Recommendations: it is strongly recommended that students whose math placement score is older than one year retake the math placement test for accurate placement and success in the course. GE: Quantitative or Formal Reasoning.

MATH:1440 Mathematics for the Biological Sciences 4 s.h.
Relations, functions, coordinate systems, graphing, polynomials, trigonometric functions, logarithmic and exponential functions; discrete mathematics, probability; examples and applications from biological sciences. Requirements: grade of C- or higher in MATH:1005 or satisfactory score on math placement exam. Recommendations: it is strongly recommended that students whose math placement score is older than one year retake the math placement test for accurate placement and success in the course. GE: Quantitative or Formal Reasoning.

MATH:1460 Calculus for the Biological Sciences 4 s.h.
Differential, integral calculus; differential equations, multivariable calculus; applications to life sciences. Requirements: grade of C- or higher in MATH:1440 or satisfactory score on math placement exam. Recommendations: it is strongly recommended that students whose math placement score is older than one year retake the math placement test for accurate placement and success in the course. GE: Quantitative or Formal Reasoning.

MATH:1550 Engineering Mathematics I: Single Variable Calculus 4 s.h.
Limits, derivatives, max/min, other applications, mean-value theorem, approximating functions, concavity, curve sketching, exponential models; Riemann sums, fundamental theorem; integration techniques, improper integrals, approximations. Requirements: grade of C- or higher in MATH:1020, or grades of C- or higher in MATH:1005 and MATH:1010, or satisfactory score on math placement exam. Recommendations: it is strongly recommended that students whose math placement score is older than one year retake the math placement test for accurate placement and success in the course. GE: Quantitative or Formal Reasoning.

MATH:1550 Engineering Mathematics II: Multivariable Calculus 4 s.h.
Vector geometry; functions of several variables; polar coordinates; partial derivatives, gradients, directional derivatives; tangent lines and planes; max/min/parametric curves, curvilinear motion; multiple integrals; vector fields, flows; integration on curves, work; divergence, flux, Green's theorem. Requirements: grade of C- or higher in MATH:1550, or score of 4 or higher on AP Calc (AB) exam, or score of 3 or higher on AP Calc (BC) exam.
MATH:1850 Calculus I 4 s.h.
Fundamental concepts, limits, methods, and techniques of differential calculus of a single variable; definite and indefinite integrals, substitution rule, fundamental theorem of calculus; applications including graphing, extreme values, areas, and volumes. Requirements: grade of C- or higher in MATH:1020, or grades of C- or higher in MATH:1005 and MATH:1010, or satisfactory score on math placement exam. Recommendations: it is strongly recommended that students whose math placement score is older than one year retake the math placement test for accurate placement and success in the course. GE: Quantitative or Formal Reasoning.

MATH:1860 Calculus II 4 s.h.
Techniques of integration including by-parts, trigonometric Integrals, trigonometric substitutions, partial fractions, improper integrals; applications (i.e., arc length), area surfaces of revolutions, application to physics; introduction to differential equations; parametric equations and polar coordinates; infinite sequences and series, convergence tests, power series, Taylor polynomials and series. Requirements: grade of C- or higher in MATH:1850 or satisfactory score on math placement exam. Recommendations: it is strongly recommended that students whose math placement score is older than one year retake the math placement test for accurate placement and success in the course.

Core Undergraduate

Graduate students in mathematics must have departmental approval to earn credit for any of the courses listed below numbered 3000 or above, except MATH:3995 Topics in Mathematics. Graduate students in other disciplines may earn credit for any course numbered 3000 or above.

MATH:2150 Foundations of Geometry 3 s.h.
Axiomatic development of common foundation for Euclidean, non-Euclidean geometry; constructions of non-Euclidean models, independence of parallel postulate. Prerequisites: MATH:1860.

MATH:2550 Engineering Mathematics III: Matrix Algebra 2 s.h.
Applications, computers for matrix calculations; matrix, vector arithmetic; linear independence, basis, subspace (in R2, R3); systems of equations, matrix reduction; rank, dimension; determinants, applications; eigenvalues, eigenvectors; diagonalization, principal axis theorem. Prerequisites: MATH:1550.

MATH:2560 Engineering Mathematics IV: Differential Equations 3 s.h.
Ordinary differential equations and applications, with integrated use of computing, student projects; first-order equations; higher order linear equations; systems of linear equations, Laplace transforms; introduction to nonlinear equations and systems, phase plane, stability. Prerequisites: MATH:1560 and MATH:2550.

MATH:2700 Introduction to Linear Algebra 4 s.h.
Vector algebra and geometry of three-dimensional Euclidean space and extensions to n-space and vector spaces; lines and planes, matrices, linear transformations, systems of linear equations, reduction to row echelon form, dimension, rank, determinants, eigenvalues and eigenvectors. Prerequisites: MATH:1550 or MATH:1850.

MATH:2850 Calculus III 4 s.h.
Multivariable calculus; vector functions, line integrals, total differentials, gradient, implicit functions, coordinate systems, Taylor's expansion, extrema, multiple integrals, vector fields, surface integrals, Stokes' theorem. Requirements: grade of C- or higher in MATH:1860.

MATH:2995 Introduction to Research Opportunities 1 s.h.
Modern mathematics research areas and activities; seminar. Prerequisites: MATH:1860 and MATH:2700.

MATH:3550 Engineering Mathematics V: Vector Calculus 3 s.h.
Partial derivatives, max-min problems, integrals along curves, surfaces and solids, vector fields and conservation of energy; curl, divergence, Stokes' theorem and the divergence theorem; the classical partial differential equations and qualitative behavior of their solutions. Prerequisites: MATH:1560 and MATH:2550. Corequisites: MATH:2560.

MATH:3600 Introduction to Ordinary Differential Equations 2-3 s.h.
First-order ordinary differential equations; second-order linear differential equations; series solutions; higher-order linear and matrix differential equations; existence and uniqueness theorems. Prerequisites: MATH:2700 and MATH:2850.

MATH:3700 Introduction to Matrix Theory 3 s.h.
Vector algebra and geometry of three-dimensional Euclidean space and extensions to n-space and vector spaces; lines and planes, matrices, linear transformations, systems of linear equations, reduction to row-echelon form, dimension, rank, determinants, eigenvalues, eigenvectors. Requirements: graduate standing.

MATH:3720 Introduction to Abstract Algebra I 4 s.h.
Basic logic, proof methods, sets, functions, relations, mathematical induction; gradual transition from familiar number systems to abstract structures—division algorithm, unique factorization theorems; groups, subgroups, quotient groups, homomorphisms. Prerequisites: MATH:2700.

MATH:3750 Classical Analysis 3 s.h.
Multivariable calculus, vector functions, line integral, total differentials, gradient, implicit functions, coordinate systems, Taylor's expansion, extrema, multiple integrals, vector fields, surface integrals, Stokes' theorem. Requirements: graduate standing and one year of calculus.

MATH:3770 Fundamental Properties of Spaces and Functions I 4 s.h.
Elementary topological and analytic properties of real numbers; emphasis on ability to handle definitions, theorems, proofs. Corequisites: MATH:2700. Requirements: second-semester calculus.

MATH:3800 Elementary Numerical Analysis 3 s.h.
Computer arithmetic, root finding, polynomial approximation, numerical integration, systems of linear equations, ordinary differential equations; use of higher-level computer language such as Matlab, Maple, Mathematica. Prerequisites: MATH:1560 or MATH:1860. Same as CS:3700.

MATH:3900 Introduction to Mathematics Research 3 s.h.
Research experience; students study an elementary topic of active research, then work in groups under faculty supervision. Prerequisites: MATH:1860 and MATH:2700.

MATH:3995 Topics in Mathematics 3 s.h.
Varied topics. Recommendations: junior, senior, or graduate standing in mathematics, classics, or related fields.

MATH:3996 Individual Study and Honors in Mathematics arr.

MATH:3997 Readings in Mathematics arr.

Upper-Level Undergraduate
Graduate students in mathematics may not earn credit for MATH:4010 Basic Analysis and MATH:4020 Basic Abstract Algebra.

MATH:4010 Basic Analysis 3 s.h.
Elementary topological and analytical properties of real numbers; emphasis on ability to handle definitions, theorems, proofs; same material as MATH:3770 for non-mathematics graduate students. Requirements: graduate standing, one year of calculus, and one semester of linear algebra.

MATH:4020 Basic Abstract Algebra 3 s.h.
Basic logic, proof methods, sets, functions, relations, mathematical induction; gradual transition from familiar number systems to abstract structures (division algorithm, unique factorization theorems); groups, subgroups, quotient groups, homomorphisms; same material as MATH:3720; for non-mathematics graduate students. Requirements: graduate standing, one year of calculus, and one semester of linear algebra.

MATH:4040 Matrix Theory 3 s.h.
Vector spaces, linear transformations, matrices, equivalence of matrices, eigenvalues and eigenvectors, canonical forms, similarity, orthogonal transformations, bilinear and quadratic forms. Prerequisites: MATH:2700 or MATH:3700.

MATH:4050 Introduction to Discrete Mathematics 3 s.h.
Basic methods of enumerative combinatorics, inclusion-exclusion and generating functions, applications of group theory (Polya-Burnside theorem). Offered fall semesters. Prerequisites: MATH:1860 and MATH:2700.

MATH:4060 Discrete Mathematical Models 3 s.h.
Basic combinatorics and graph theory, their applications (which may include scheduling, matching, optimization); Eulerian and Hamiltonian paths, spanning trees. Offered spring semesters. Prerequisites: MATH:2700.

MATH:4080 Elementary Theory of Numbers 3 s.h.
Factorization, congruence, Diophantine equations, law of quadratic reciprocity. Prerequisites: MATH:1860 and MATH:2700.

MATH:4090 A Rigorous Introduction to Abstract Algebra 4 s.h.
Rigorous review of groups including homomorphisms and quotient groups; group actions; Sylow’s theorems; rigorous review of rings; ideals, ring homomorphisms, quotient rings; polynomial rings; vector spaces and linear transformations; basic field theory; serves as a bridge between MATH:3720 and MATH:5000. Requirements: MATH:3720 or graduate standing.

MATH:4120 History of Mathematics 3 s.h.
May include numerical systems; Babylonian, Egyptian, and Greek mathematics; mathematics of other cultures; calculus; 19th- and 20th-century mathematics. Requirements: two semesters of calculus and one semester of linear algebra.

MATH:4200 Complex Variables 3 s.h.
Geometry of complex plane, analytic functions; Cauchy-Goursat theorem, applications; Laurent series, residues, elementary conformal mapping. Prerequisites: MATH:2850 or MATH:3750.

MATH:4210 Foundations of Analysis 4 s.h.
Introduction to fundamental ideas of analysis; emphasis on understanding and constructing definitions, theorems, and proofs; real and complex numbers, set theory in metric spaces, compactness and connectedness, sequences, Cauchy sequences, series, and continuity; elements of differential and integral calculus; sequences and series of functions; modes of convergence; equicontinuity; serves as a bridge between MATH:3770 and MATH:5200. Requirements: MATH:3770 or graduate standing.

MATH:4250 Introduction to Financial Mathematics 2-3 s.h.
Financial mathematics; option pricing and portfolio optimization, stochastic integration, methods due to Ito and Feynman-Kac, Monte-Carlo simulation. Prerequisites: MATH:2850 or STAT:3120.

MATH:4500 Introduction to Differential Geometry I 3 s.h.
Space curves, Frenet frames, intrinsic and extrinsic geometry of surfaces, first and second fundamental forms, isometries, Gauss map, Gaussian curvature, Theorema Egregium, geodesics, covariant differentiation; may include global theory of curves and Gauss-Bonnet theorem. Prerequisites: (MATH:2850 and MATH:3770) or MATH:3600.

MATH:4510 Introduction to Differential Geometry II 3 s.h.
Continuation of MATH:4500; geometry of surfaces in Euclidean space, Gauss-Bonnet theorem and its applications, minimal surfaces, abstract surfaces; may include Riemannian manifolds, connections, elementary Lie groups, applications of differential geometry to other disciplines (physics, engineering). Prerequisites: MATH:4500.

MATH:4610 Continuous Mathematical Models 3 s.h.
Building and analyzing mathematical models involving differential equations for specific problems from engineering and the sciences; modeling project. Prerequisites: MATH:3600.

MATH:4740 Large Data Analysis 3 s.h.
Current areas that deal with problem of Big Data; techniques from computer science, mathematics, statistics; high performance and parallel computing, matrix techniques, cluster analysis, visualization; variety of applications including Google PageRank, seismology, Netflix-type problems, weather forecasting; fusion of data with simulation; projects. Prerequisites: CS:1210 and MATH:2700 and (STAT:2010 or STAT:2020). Same as CS:4740, STAT:4740.

MATH:4820 Optimization Techniques 3 s.h.
Basic theory of optimization, use of numerical algorithms in solution of optimization problems; linear and nonlinear programming, sensitivity analysis, convexity, optimal control theory, dynamic programming, calculus of variations. Prerequisites: MATH:2700 and MATH:2850 and MATH:3800. Same as CS:4720.

MATH:4860 High Performance and Parallel Computing 3 s.h.
Parallel scientific computing methods such as parallel algorithms for dense and sparse matrices; implementation using libraries such as MPI; current topics such as grid computing. Prerequisites: CS:2630 and MATH:2700. Same as CS:4700.

Core Graduate

MATH:5000 Abstract Algebra I 4 s.h.
Groups and homomorphisms, Sylow Theorems, rings, finitely generated modules over a PID, Galois theory, vector spaces, linear transformations and matrices, canonical forms. Prerequisites: MATH:3720.

MATH:5010 Abstract Algebra II 4 s.h.
Continuation of MATH:5000. Prerequisites: MATH:5000.

MATH:5200 Introduction to Analysis I 4 s.h.
Real numbers, fundamentals of limits and continuity in the context of metric spaces; Lebesque theory of functions of one real variable. Requirements: MATH:3770 or graduate standing.

MATH:5210 Introduction to Analysis II 4 s.h.
Local theory of analytic functions of one complex variable, power series, classical transcendental functions; spaces of functions. Prerequisites: MATH:5200.

MATH:5400 General Topology 4 s.h.
Basic concepts of general topological spaces and continuous functions: countability of sets, topological space, comparing topologies; subspace, order, and product topologies; closed sets and limit points, continuous functions, metric topology, quotient topology (including projective spaces and gluing cells), connectedness in the real line and in general spaces, components and local connectedness, compactness in Euclidean and general spaces, limit point compactness, local compactness, countability axioms, separation axioms, normal spaces and Urysohn's Lemma, complete metric spaces, convergence in function spaces. Prerequisites: MATH:3770.

MATH:5410 Introduction to Smooth Manifolds 4 s.h.
Calculus on smooth manifolds; smooth functions, mean value theorem, chain rule, smooth manifolds, tangent vectors, tangent spaces, inverse and implicit functions theorems, submersions and immersions, vector fields, flows, multilinear algebra, differential forms, Stokes theorem. Prerequisites: MATH:2700 and MATH:2850 and MATH:5400.

MATH:5500 Nonlinear Dynamics with Numerical Methods 4 s.h.
Nonlinear differential equations, one- and two-dimensional flows, stability, phase plane analysis, limit cycles, bifurcations, chaos, fractals; Euler's, multistep, and Runge-Kutta numerical methods. Prerequisites: MATH:3600 and MATH:3770.

MATH:5500 Partial Differential Equations with Numerical Methods 4 s.h.
Conservation laws, weak solutions, diffusion equation, Laplace's equation, finite difference methods, variational methods, finite element method. Prerequisites: MATH:2850 and MATH:3600 and MATH:3770.

MATH:5700 Numerical Analysis: Nonlinear Equations and Approximation Theory 4 s.h.
Root finding for nonlinear equations; polynomial interpolation; polynomial approximation of functions; numerical integration. Prerequisites: (MATH:2700 and MATH:2850) or MATH:3550. Requirements: knowledge of computer programming. Same as CS:5710.

MATH:5810 Numerical Analysis: Differential Equations and Linear Algebra 4 s.h.
Numerical methods for initial value problems for ordinary differential equations; direct and iterative methods for linear systems of equations; eigenvalue problems for matrices. Prerequisites: ((MATH:2700 and MATH:2850) or (MATH:3550)) and MATH:3600. Requirements: knowledge of computer programming. Same as CS:5720.

MATH:5900 First-Year Graduate Seminar 1 s.h.
Introduction to mathematics graduate program. Requirements: first-year graduate standing in mathematics.

MATH:5950 Qualifying Exam Preparation Seminars 0 s.h.
Exam preparation in pure and applied mathematics.
Graduate

MATH:6000 Introduction to Algebra I 3 s.h.
Abstract algebra: semigroups, groups, rings, integral domains, polynomial rings, division rings, fields, vector spaces, matrices, modules over rings, lattices, categories. Prerequisites: MATH:5000.

MATH:6010 Introduction to Algebra II 3 s.h.
Continuation of MATH:6000. Prerequisites: MATH:6000.

MATH:6200 Analysis I 3 s.h.
Lebesque measure and integral, fundamental theorem of calculus, abstract measures and integration, Fubini's theorem, Radon-Nikodym theorem, Riesz representation theorem, L-p spaces. Prerequisites: MATH:5210.

MATH:6210 Analysis II 3 s.h.
Hilbert space, Banach space techniques; Hahn-Banach theorem, open mapping theorem, principle of uniform boundedness; reflexivity, H-p spaces, Paley-Wiener theorem, space of functions analytic on the open unit disk. Prerequisites: MATH:4200 and MATH:6200.

MATH:6400 Introduction to Algebraic Topology 3 s.h.
Homotopy, fundamental group and covering spaces, CW and simplicial complexes, simplicial homology, Euler characteristic. Prerequisites: MATH:5400.

MATH:6410 Introduction to Differential Topology 3 s.h.
Manifolds, functions: tangent bundle, Morse-Sard theorem, transversality, submanifolds, tubular neighborhoods, normal bundles, vector fields, degree and intersection theory, fixed-point theory, Morse theory. Prerequisites: MATH:5410.

MATH:6500 Differential Geometry I 3 s.h.
Differentiable manifolds, forms, tensors, Riemannian metrics, isometries, connections, geodesics, curvature, related topics.

MATH:6510 Differential Geometry II 3 s.h.
Continuation of MATH:6500; varied topics, may include study of existence and uniqueness of solutions to differential equations and systems related to geometry, indefinite metrics, Lie groups, attributes of manifolds with particular curvature properties, global Riemannian geometry, Kahler geometry, applications of differential geometry to other disciplines. Prerequisites: MATH:6500.

MATH:6600 Ordinary Differential Equations I 3 s.h.
Existence, uniqueness, continuous dependence of solutions to initial value problems, variational calculus, Lagrangian and Hamiltonian systems, differential inequalities, perturbation theory, normal forms, invariant manifolds, KAM theory, bifurcation theory, boundary value problems. Prerequisites: MATH:5210.

MATH:6610 Ordinary Differential Equations II 3 s.h.
Continuation of MATH:6600. Prerequisites: MATH:6600.

MATH:6700 Partial Differential Equations I 3 s.h.
Elliptic equations; potential theory, maximum principle, a priori estimate, Dirichlet problem; initial value problem for parabolic equations; hyperbolic equations; Duhamel's principle, Cauchy problem; nonlinear equations, characteristics, canonical form, first-order systems. Prerequisites: MATH:5210.

MATH:6710 Partial Differential Equations II 3 s.h.
Continuation of MATH:6700. Prerequisites: MATH:6700.

MATH:6850 Theoretical Numerical Analysis I 3 s.h.
Theoretical foundations of numerical analysis, within framework of functional analysis; application areas including approximation theory, numerical methods for partial differential equations, integral equations; introduction to functional analysis. Prerequisites: MATH:5200 and MATH:5210 and MATH:5800 and MATH:5810.

MATH:6860 Theoretical Numerical Analysis II 3 s.h.
Continuation of MATH:6850. Prerequisites: MATH:6850.

Advanced Graduate

MATH:7000 Homological Algebra 2-3 s.h.
Modules, tensor products, groups of homomorphisms, categories, functors, homology functors, projective and injective modules, derived functors, torsion and extension functors, homological dimension. Prerequisites: MATH:6010.

MATH:7030 Topics in Algebra 2-3 s.h.
May include algebraic number theory, groups, representation theory, algebras, ideal theory, lattice theory. Prerequisites: MATH:6010.

MATH:7070 Seminar: Algebra arr.

MATH:7080 Seminar: Commutative Ring Theory arr.

MATH:7090 Seminar: Representation Theory arr.

MATH:7200 Functional Analysis I 2-3 s.h.
Locally convex topological vector spaces, duality, tensor products and nuclear spaces; Krein-Millman theorem, Choquet's theory; geometry of Banach spaces, nonlinear functional analysis; operators on Hilbert spaces, spectral theorem, algebras of operators. Prerequisites: MATH:6210.

MATH:7210 Functional Analysis II 2-3 s.h.
Continuation of MATH:7200. Prerequisites: MATH:7200.

MATH:7250 Topics in Analysis 2-3 s.h.
Measure theory, integration, general topology.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>MATH:7400</td>
<td>Topology of Manifolds</td>
<td>3 s.h.</td>
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<tr>
<td></td>
<td>Embedding, knotting, immersions; isotopy, homotopy, regular neighborhoods, engulfing, surgery, cobardism; three-, four-, and higher dimensional manifolds. Prerequisites: MATH:6400 and MATH:6410.</td>
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<tr>
<td>MATH:7450</td>
<td>Topics in Topology</td>
<td>2-3 s.h.</td>
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<tr>
<td></td>
<td>May include homotopy theory, topology of 3-manifolds, 4-manifolds, or higher-dimensional manifolds, knotting and embedding problems, fiber bundles and characteristic classes, K-theory, PL manifolds, infinite-dimensional manifolds.</td>
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</tr>
<tr>
<td>MATH:7470</td>
<td>Seminar: Topology</td>
<td>arr.</td>
</tr>
<tr>
<td>MATH:7580</td>
<td>Seminar: Mathematical Physics</td>
<td>arr.</td>
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<tr>
<td>MATH:7630</td>
<td>Topics in Mathematical Biology</td>
<td>2-3 s.h.</td>
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<tr>
<td></td>
<td>Application of mathematics to biology.</td>
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<tr>
<td>MATH:7660</td>
<td>Seminar: Nonlinear Dynamics and Differential Equations</td>
<td>arr.</td>
</tr>
<tr>
<td>MATH:7670</td>
<td>Seminar: Mathematical Biology</td>
<td>arr.</td>
</tr>
<tr>
<td>MATH:7730</td>
<td>Topics in Partial Differential Equations</td>
<td>2-3 s.h.</td>
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<tr>
<td></td>
<td>Regularity theory, nonlinear analysis in partial differential equations, fluid dynamics, harmonic analysis, conservation laws, other topics.</td>
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<tr>
<td>MATH:7830</td>
<td>Topics in Applied Mathematics</td>
<td>arr.</td>
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<tr>
<td></td>
<td>Application of mathematics to other disciplines.</td>
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<tr>
<td>MATH:7870</td>
<td>Seminar: Numerical Analysis</td>
<td>arr.</td>
</tr>
<tr>
<td>MATH:7990</td>
<td>Reading Research</td>
<td>arr.</td>
</tr>
</tbody>
</table>
Medieval Studies

Chair
• John Finamore (Classics)

Coordinator
• Michael E. Moore (History)

Undergraduate certificate: medieval studies
Web site: http://clas.uiowa.edu/classics/undergraduate-program/medieval-studies-program

The Medieval Studies Program offers an undergraduate program of study and a selection of courses open to students in all majors.

Undergraduate Program of Study

Certificate in Medieval Studies

Certificate

The Certificate in Medieval Studies requires a minimum of 21 s.h. in medieval studies course work. The certificate program is open to current University of Iowa undergraduate students and to all individuals who hold a bachelor's degree and are not enrolled in a graduate or professional degree program. Students must maintain a g.p.a. of at least 2.00 in work for the certificate.

The program enables students to combine study in three or more disciplines into an organized investigation of the Middle Ages, a rich historical period that continues to influence today's culture. Students may earn the Certificate in Medieval Studies as a distinct interest or combine it with focused study in areas such as art history; classics; comparative literature; gender, women's, and sexuality studies; languages (e.g., French, German, Italian, Portuguese, Spanish); music; philosophy; religion; and theater.

Students must include courses from at least three different departments in their work for the certificate; they may count a maximum of 10 s.h. from a single department or program. Courses used to fulfill General Education Program (p. 313) requirements or the requirements of a major or minor may be counted toward the certificate in most cases. Up to 6 s.h. of transfer credit may be counted toward certificate requirements, with the Certificate in Medieval Studies coordinating committee's approval; contact the certificate program's coordinator.

All certificate students must complete one of the following two courses and should do so early in their program of study.

MDVL:3409 Medieval Civilization I 3 s.h.
MDVL:3410 Medieval Civilization II 3 s.h.

Remaining courses may be chosen from the lists under "Associated Courses" and "Courses" below. Students should consult regularly with a medieval studies advisor while planning and completing their program of study.

The Medieval Studies Program strongly encourages students to complete course work in a language relevant to the medieval period. Latin is recommended for anyone intending to pursue graduate study in the field. Many language courses have prerequisites, and some are offered irregularly, so students should complete their language course work as early as possible. The following language courses are approved for the medieval studies certificate.

ENGL:3256 Elementary Old English 3 s.h.
RELS:4001-RELS:4002 Biblical Hebrew I-II 8 s.h.

Sample Study Plans

Both of these sample study plans fulfill the certificate's requirements.

Sample plan for a student planning graduate work in medieval studies:

MDVL:3226/ENGL:3226 Literature and Culture of the Middle Ages 3 s.h.
MDVL:3410/HIST:3410 Medieval Civilization II 3 s.h.
ARTH:2420 Introduction to Medieval Art 3 s.h.
CLSL:2001 World of Cicero 3 s.h.
CLSL:2002 Golden Age of Roman Poetry 3 s.h.
HIST:4418 Medieval Intellectual History 1150-1500 3 s.h.
RELS:1225 Medieval Religion and Culture 3 s.h.

Sample plan for a student with a general interest in medieval studies:

MDVL:3409 Medieval Civilization I 3 s.h.
ENGL:3256 Elementary Old English 3 s.h.
ENGL:3286 Chaucer 3 s.h.
HIST:4412 History of the Medieval Church 3 s.h.
HIST:4426 Women, Power, and Society in Medieval Europe 3 s.h.
MUS:2301 History of Music I 3 s.h.
SPAN:3700 The Cid in History and Legend 3 s.h.

Associated Courses

The following courses are approved for the medieval studies certificate. Other courses may be approved for satisfaction of certificate requirements; students who wish to have a course approved should make a request to the Certificate in Medieval Studies coordinating committee. The coordinating committee revises the list of approved courses as necessary.

ARABIC LANGUAGE AND LITERATURE

ARAB:2001 Intermediate Modern Standard Arabic I 5 s.h.
ARAB:2002 Intermediate Modern Standard Arabic II 5 s.h.

ART AND ART HISTORY

ARTH:2420 Introduction to Medieval Art 3 s.h.
ARTH:3391 Themes in Medieval Art 3 s.h.
ARTH:3990 Topics in Art History (when topic is medieval) 3 s.h.

CENTER FOR THE BOOK

UICB:4910/HIST:4910 The Book in the Middle Ages 3 s.h.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>UICB:4920/HIST:4920/SLIS:4920</td>
<td>The Transition from Manuscript to Print</td>
<td>3 s.h.</td>
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<tr>
<td>CLASSICS</td>
<td></td>
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<tr>
<td>CLSL:2001</td>
<td>World of Cicero</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>CLSL:2002</td>
<td>Golden Age of Roman Poetry</td>
<td>3 s.h.</td>
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<tr>
<td>ENGLISH</td>
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<tr>
<td>ENGL:2216</td>
<td>Selected Works of the Middle Ages</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ENGL:3226</td>
<td>Literature and Culture of the Middle Ages</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ENGL:3256</td>
<td>Elementary Old English</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ENGL:3257</td>
<td>Old English Beowulf</td>
<td>3 s.h.</td>
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<tr>
<td>ENGL:3266</td>
<td>Medieval Celtic Literature</td>
<td>3 s.h.</td>
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<tr>
<td>ENGL:3276/THTR:3276</td>
<td>Medieval Drama</td>
<td>3 s.h.</td>
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<tr>
<td>ENGL:3286</td>
<td>Chaucer</td>
<td>3 s.h.</td>
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<td>FRENCH</td>
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<td>FREN:3110</td>
<td>French Civilization</td>
<td>3 s.h.</td>
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<tr>
<td>GERMAN</td>
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<td>GRMN:2780</td>
<td>King Arthur Through the Ages</td>
<td>3 s.h.</td>
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<tr>
<td>HISTORY</td>
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<tr>
<td>HIST:2151</td>
<td>Introduction to the History Major (when topic is medieval)</td>
<td>3 s.h.</td>
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<tr>
<td>HIST:3409</td>
<td>Medieval Civilization I</td>
<td>3 s.h.</td>
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<tr>
<td>HIST:3410</td>
<td>Medieval Civilization II</td>
<td>3 s.h.</td>
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<tr>
<td>HIST:4408</td>
<td>The Twelfth-Century Renaissance</td>
<td>3 s.h.</td>
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<tr>
<td>HIST:4411</td>
<td>Economic and Social History of Medieval Europe</td>
<td>3 s.h.</td>
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<tr>
<td>HIST:4412</td>
<td>History of the Medieval Church</td>
<td>3 s.h.</td>
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<tr>
<td>HIST:4417</td>
<td>Medieval Intellectual History</td>
<td>3 s.h.</td>
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<td>HIST:4418</td>
<td>Medieval Intellectual History</td>
<td>3 s.h.</td>
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<tr>
<td>HIST:4419</td>
<td>Ancient and Medieval Science</td>
<td>3 s.h.</td>
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<tr>
<td>HIST:4421</td>
<td>The Middle Ages in Film</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>HIST:4423</td>
<td>Ireland in the Early Middle Ages</td>
<td>3 s.h.</td>
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<tr>
<td>HIST:4426</td>
<td>Women, Power, and Society in Medieval Europe</td>
<td>3 s.h.</td>
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<tr>
<td>HIST:4910/UICB:4910</td>
<td>The Book in the Middle Ages</td>
<td>3 s.h.</td>
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<td>HIST:4920/UICB:4920/SLIS:4920</td>
<td>The Transition from Manuscript to Print</td>
<td>3 s.h.</td>
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<tr>
<td>ITALIAN</td>
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<td>ITAL:4633</td>
<td>Medieval Italian Literature</td>
<td>3 s.h.</td>
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<tr>
<td>ITAL:4634</td>
<td>Medieval and Renaissance Italian Literature</td>
<td>3 s.h.</td>
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<tr>
<td>MUSIC</td>
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<tr>
<td>MUS:2301</td>
<td>History of Music I</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>MUS:4200</td>
<td>Counterpoint Before 1600</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>PHILOSOPHY</td>
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<tr>
<td>PHIL:3112</td>
<td>Medieval Philosophy</td>
<td>3 s.h.</td>
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<td>RELIGIOUS STUDIES</td>
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<tr>
<td>RELS:1225</td>
<td>Medieval Religion and Culture</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>RELS:4001</td>
<td>Biblical Hebrew I</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>RELS:4002</td>
<td>Biblical Hebrew II</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>SPANISH AND PORTUGUESE</td>
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<tr>
<td>SPAN:3700</td>
<td>The Cid in History and Legend</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>SPAN:4690</td>
<td>Topics in Spanish Literature (when topic is medieval)</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>THEATRE ARTS</td>
<td></td>
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<tr>
<td>THTR:3276/ENGL:3276</td>
<td>Medieval Drama</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>Courses</td>
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<tr>
<td>MDVL:3226</td>
<td>Literature and Culture of the Middle Ages</td>
<td>3 s.h.</td>
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<tr>
<td>MDVL:3409</td>
<td>Medieval Civilization I</td>
<td>3 s.h.</td>
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<tr>
<td>MDVL:3410</td>
<td>Medieval Civilization II</td>
<td>3 s.h.</td>
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<tr>
<td>MDVL:4408</td>
<td>The Twelfth-Century Renaissance</td>
<td>3 s.h.</td>
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<tr>
<td>MDVL:4411</td>
<td>Economic and Social History of Medieval Europe</td>
<td>3 s.h.</td>
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<tr>
<td>MDVL:4412</td>
<td>History of the Medieval Church</td>
<td>3 s.h.</td>
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<td>MDVL:4417</td>
<td>Medieval Intellectual History</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>MDVL:4418</td>
<td>Medieval Intellectual History</td>
<td>3 s.h.</td>
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</tbody>
</table>

English majors may apply this course to the following area and/or period requirement. AREA: Medieval and Early Modern Literature and Culture. PERIOD: Early Literatures Through 17th Century. Same as ENGL:3226.

MDVL:3409 Medieval Civilization I
Europe from the decline of Roman empire to the eleventh century; cultural, political, economic, artistic and architectural foundations of Western civilization. Same as HIST:3409.

MDVL:3410 Medieval Civilization II
Europe from the eleventh century to the Italian Renaissance; cultural, political, economic, artistic, and architectural foundations of Western civilization. GE: Historical Perspectives. Same as HIST:3410.

MDVL:4408 The Twelfth-Century Renaissance
Social, economic, intellectual, and cultural rebirth of Europe in the 12th century; Latin learning and education; developments in vernacular literature, art, architecture, new religious orders and institutions, pilgrimage and Crusade. Same as HIST:4408.

MDVL:4411 Economic and Social History of Medieval Europe
Changes in western Europe from 300 to 1500 A.D.; feudalism, manorialism, revival of towns, heresy, women, monasticism, agricultural and commercial revolutions, Black Death. GE: Historical Perspectives. Same as HIST:4411.

MDVL:4412 History of the Medieval Church
Development of Christianity to end of great schism; rise of Roman primacy, development of monasticism, orthodox and heterodox groups. GE: Historical Perspectives. Same as HIST:4412.

MDVL:4417 Medieval Intellectual History
Philosophy, art, literature, religious culture of Europe from waning of classical intellectual modes of culture in late antiquity, to their recovery in 12th century. Same as HIST:4417.

MDVL:4418 Medieval Intellectual History
1150-1500
European philosophy, religion, literature, art from 12th-century rise of scholasticism; their transformation in period of Copernicus, Luther. Same as HIST:4418.

**MDVL:4419 Ancient and Medieval Science** 3 s.h.
Greeks' initiation of scientific inquiry; developments in astronomy, cosmology, optics, mathematics, physics, medicine, psychology in ancient and medieval societies of Middle East, Europe. Same as HIST:4419.

**MDVL:4421 The Middle Ages in Film** 3 s.h.
How films that represent medieval events and literature may be analyzed to reveal the culture and times in which the films were made; Middle Ages and European nationalistic mythmaking as represented in film. Same as HIST:4421.

**MDVL:4423 Ireland in the Early Middle Ages** 3 s.h.
Ireland and the northern British islands 400-1000 C.E., a region of small kingdoms and thin population, lacking natural resources, far from Rome and ancient centers of Mediterranean culture; development of civilization, including monastic, legal, theological, and scholarly traditions that had a major impact on continental Europe; early medieval Irish history; introduction to the world of historical scholarship. Same as HIST:4423.

**MDVL:4426 Women, Power, and Society in Medieval Europe** 3 s.h.
Same as HIST:4426.
Museum Studies

Chair, Department of Anthropology
• James Enloe (Anthropology)

Coordinator, Museum Studies
• Russell Ciochon (Anthropology/Pediatric Dentistry)

Undergraduate certificate: museum studies
Faculty: http://www.uiowa.edu/~mstudies/MSContact.htm
Web site: http://www.uiowa.edu/~mstudies/

Museum studies has a long history at the University of Iowa, with courses offered continuously since 1910. Iowa’s museum studies students have become directors, curators, educators, and exhibit specialists in museums throughout the country.

Museums embrace every aspect of human experience. Iowa’s Museum Studies Program reflects this multiplicity, offering courses related to many fields, including American studies, anthropology and archaeology, art, biology, business, communication studies, earth and environmental sciences, elementary and secondary education, English, world languages, history, and library and information science.

Instructors for museum studies courses reflect the program’s interdisciplinary nature. They include faculty members from anthropology, art and art history, business, history, law, library and information science, and other related fields. The University archivist for University of Iowa Libraries is an affiliated faculty member of the Museum Studies Program, as are the collections management specialists for the University’s Museum of Art, Museum of Natural History, and Old Capitol Museum.

The Museum Studies Program is administered by the Department of Anthropology (p. 55).

Undergraduate Program of Study

• Certificate in Museum Studies

College of Liberal Arts and Sciences students who are interested in museum studies may earn the certificate, or they may use the individualized plan of study track in the interdepartmental studies major to create a museum studies concentration relevant to their academic and professional interests.

Certificate

The Certificate in Museum Studies requires 18 s.h. The program provides a broad foundation of knowledge increasingly valued in the museum field.

The certificate is open to current University of Iowa undergraduate students and to all individuals who hold a bachelor's degree and are not enrolled in a graduate or professional degree program.

Museum studies courses introduce students to the spectrum of museum endeavors, from organization and mission planning to institutional histories and current developments in the field. Most courses developed by the program offer hands-on experience in exhibition planning and design, collection management, educational programming, community development, and administration.

A major in one of the natural sciences (e.g., biology, geoscience), anthropology, science education, art history, American studies, or history is recommended for students preparing for museum careers.

Students may count a maximum of 6 s.h. completed for a major, a minor, or another certificate offered by the College of Liberal Arts and Sciences toward the Certificate in Museum Studies.

Work for the certificate consists of an introductory course, a minimum of four courses on specific museum studies topics, and an internship. Students must request permission from the coordinator of the museum studies certificate to use courses that are not included in the program, and the proposed course content and requirements must fit into one of the program’s defined areas.

Students must maintain a g.p.a. of at least 2.00 in work for the certificate.

The Certificate in Museum Studies requires the following course work.

INTRODUCTORY COURSE

Students should begin the certificate with MUSM:3001 Introduction to Museum Studies, which is prerequisite to some of the program’s more advanced courses and is approved for the Social Sciences area of the General Education Program. The course provides a historical overview of museum development and function while introducing students to issues such as museum governance and financing, ethics and law, collection management, exhibition and educational programming, interpretation, and audience research.

MUSM:3001 Introduction to Museum Studies 3 s.h.

MUSEUM STUDIES TOPIC AREAS

Students complete a minimum of four courses in museum studies topic areas, choosing from the lists below. The areas are collection care and management; exhibition development and public education; history, theory, and culture; and museum administration and management. Students must select one course each from three of the four topic areas (9 s.h. total). They also must complete a fourth course (3 s.h.) from any of the four topic areas.

Collection Care and Management

<table>
<thead>
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<th>Course</th>
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<tr>
<td>MUSM:3003 Natural History Research Collections</td>
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<td>MUSM:3090 Topics in Museum Studies</td>
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<td>MUSM:3200 Collection Care and Management</td>
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<td>MUSM:4200 Advanced Collection Care and Management</td>
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Exhibition Development and Public Education

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<td>MUSM:3004 Exhibition Planning</td>
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<td>MUSM:3110 Learning in Museums</td>
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History, Theory, and Culture

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<td>MUSM:3120 Natural History Museums: A History</td>
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<td>MUSM:3237 Politics of the Archaeological Past</td>
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<td>MUSM:4081 The Art Museum: Theory and Practice</td>
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Museum Administration and Management

MUSM:3080 Marketing, Promoting, Politicking 3 s.h.
MUSM:3100 Historic House Management and Preservation 3 s.h.
MUSM:3500 Nonprofit Organizational Effectiveness I 3 s.h.
MUSM:4150 Introduction to Grant Writing 3 s.h.

MUSEUM STUDIES INTERNSHIP

After completing at least 12 s.h. of the required course work above, students must complete the following internship, earning a minimum of 3 s.h.

MUSM:4080 Museum Internship arr.

The Certificate in Museum Studies coordinator works closely with students and affiliated faculty members to ensure that the internship provides students with the instruction and experience they need.

Facilities and Resources

Museum studies students have access to a wide variety of museums and related resources, including the following University of Iowa museums: the Museum of Natural History, the Museum of Art, the Old Capitol Museum, the Medical Museum, and the Athletics Hall of Fame.

The Museum Studies Program maintains close connections with a number of local, community-based museums and organizations, including the State Historical Society of Iowa, the Herbert Hoover Presidential Library and Museum, the African American Museum of Iowa, the Iowa Children’s Museum, and the Johnson County Historical Society.

The University of Iowa Collections Coalition, consisting of 19 collections and collection-support organizations, is an essential resource for the Museum Studies Program. It provides museum studies internships, directed study projects, opportunities for site visits, and volunteer experiences for students as well as guest speakers.

Courses

Introduction

MUSM:3001 Introduction to Museum Studies 3 s.h.

Overview of museum history, function, philosophy, collection, and curatorial practices; governance and funding issues; exhibition evaluation and audience studies; examples from Museum of Art, Museum of Natural History, Old Capitol Museum, and Medical Museum. GE: Social Sciences. Same as EDTL:3001, SIED:3001, ANTH:3001.

Collection Care and Management

MUSM:3003 Natural History Research Collections 3 s.h.

Techniques, methods, and issues specific to natural history research collections; practice in preparing and cleaning specimens; role of natural history specimens in modern scientific research. Recommendations: basic understanding of the diversity of plants and animals and natural history museum collections, MUSM:3001 or MUSM:3200, and BIOL:1411 or BIOL:1412; or other experience.

MUSM:3090 Topics in Museum Studies 1 s.h.

Systematic and analytic methods used for research in physical collections; tutorials in collection building, curation, and preservation; designed by members of the University of Iowa Collections Coalition. Same as EES:3090.

MUSM:3200 Collection Care and Management 3 s.h.

How a museum’s management policy relates to its administrative, legal, and ethical obligations to its collections; acquisitions, deaccessions, collection use, data standards, storage environment, health, safety, documentation. Same as EES:3200.

MUSM:4200 Advanced Collection Care and Management 3 s.h.

Builds on MUSM:3200; types and materials of museum objects and their care; storage and preservation of paper, books, photographs, works of art, electronic media, textiles, furniture, archaeological artifacts, and natural history specimens; collections project and hands-on practice in preservation techniques, enclosures, and supports; for students planning museum careers or professions that require care of collections. Prerequisites: MUSM:3200 or EES:3200. Same as EES:4200.

Exhibition Development and Public Education

MUSM:3004 Exhibition Planning 3 s.h.

Preliminary work for and process of developing museum exhibitions; history of exhibit design, evaluation, budgets, teams and team member roles, working with community and special interest groups, methods of production and display; students research a topic, choose artifacts and images, and create a narrative and exhibit script. Prerequisites: MUSM:3001.

MUSM:3110 Learning in Museums 3 s.h.

Exploration of the methodology of museum education; institutional objectives that facilitate learning in museum setting; exhibition and program development, didactic materials, and funding strategies. Prerequisites: MUSM:3001. Recommendations: good writing skills. Same as EDTL:3010.

History, Theory, and Culture

MUSM:3120 Natural History Museums: A History 3 s.h.

History of the natural history museum; origin, character, and evolution; anecdotes and personalities; how natural history museums influenced society and their continuing relevance to a technological world. Recommendations: at least one course in museum studies, such as MUSM:3001.
MUSM:3237 Politics of the Archaeological Past  3 s.h.
How control over management of material remains of the ancient past, and representations of that past, intersect with the identity of diverse groups, including archaeologists, indigenous peoples, national governments, collectors, ethnic minorities and majorities, museum curators; struggles for control of the archaeological past at different scales (artifacts, skeletal remains, sites, imagery, narratives) and in different regions of the world. Same as ANTH:3237.

MUSM:4081 The Art Museum: Theory and Practice  3 s.h.
Introduction to different aspects of art museums; emphasis on roles of art historians, especially curatorial practice; current and historical theories and practices of art exhibitions; varying debates of the politics of display; art museum professions; the many facets of art exhibition preparation; the University of Iowa Museum of Art collections. Same as ARTH:4081.

MUSM:4130 Museum Literacy and Historical Memory  3 s.h.
Concepts and methods for understanding the role of museums in shaping knowledge and collective memory of history; institutionally based exhibits and collections; historical markers and public monuments, public holidays and events, media and artistic works that interpret the past; how events, people, and civic ambitions are memorialized and how memories of them are shaped; appearance of museums and related practices in the non-Western world after 1850. Same as HIST:4130.

MUSM:4150 Introduction to Grant Writing  3 s.h.
Comprehensive training in grant proposal writing; basics of project development and management; core principles for writing small and large proposals to public and private funding sources; finer points of grant writing to increase competitiveness of future proposals and applications; for students with limited grant writing experience. Same as EALL:4130.

Directed Studies and Internship
MUSM:4050 Directed Studies and Projects arr.
Advanced readings in historical development, educational philosophy, programs, operations of museums; individual projects coordinated with programs, exhibits, or collections of campus and area museums. Prerequisites: MUSM:3001 or MUSM:3004 or MUSM:3200.

MUSM:4080 Museum Internship arr.
Working experience in functions, departments, programs of the sponsoring museum; relation to museum’s overall mission and museum field in general.

Museum Administration and Management
MUSM:3080 Marketing, Promoting, Politicking Contemporary Public Art  3 s.h.
How public art projects are conceived, created, and paid for; projects sponsored and funded by federal, state, and local governments and private businesses 1960 to present; projects’ operational structures, how artists are selected; Vietnam Veterans Memorial, Serra’s Tilted Arc, recent projects. Same as ARTH:3080.

MUSM:3100 Historic House Management and Preservation  3 s.h.
Management, preservation, interpretation, and basic operations of historic structures and the museums they serve.

MUSM:3500 Nonprofit Organizational Effectiveness I  3 s.h.
Music

Director, Division of Performing Arts
• Alan MacVey

Director, School of Music
• David Gier

Director of planning
• Kristin Thelander

Associate directors
• Benjamin Coelho, Christine Getz, Dan Moore

Undergraduate major: music (B.A., B.M.)
Undergraduate minor: music
Graduate degrees: M.A. in music; M.F.A. in music; Ph.D. in music; D.M.A.
Graduate minor: theory pedagogy
Graduate certificate: sacred music
Faculty: http://music.uiowa.edu/people
Web site: http://music.uiowa.edu/

The University of Iowa School of Music is prominent in a fine arts community of international repute. It has long been recognized as one of the excellent university-based music schools in the United States.

The school's on-campus enrollment of approximately 470 music majors is large enough to sustain strong programs in all areas of specialization, yet small enough to ensure the individual attention essential to each student's development.

The faculty consists of highly trained artist-teachers in each specialization area and scholars of international distinction. Faculty ensembles in residence include the Iowa Woodwind Quintet and the Iowa Brass Quintet.

Private lessons with faculty members are offered in all band and orchestra instruments, voice, piano, and organ.

The school's undergraduate programs offer all qualified students, whether music majors or nonmajors, the opportunity for further study of music. In addition to its comprehensive course offerings for majors, the school provides a substantial selection of courses especially recommended for nonmajors and several approved for the General Education Program (p. 313) (see "Courses for Nonmajors" below).

Graduate programs in music are designed primarily to prepare students for teaching in secondary schools, colleges, and universities and for careers in performance and music therapy.

The School of Music is a charter member of the National Association of Schools of Music. The requirements for entrance and for graduation are in accordance with the association's published standards.

The department is one of three academic units in the Division of Performing Arts (p. 227). It participates in offering the division's Certificate in Performing Arts Entrepreneurship (p. 498).

Undergraduate Programs of Study
• Major in music (Bachelor of Arts, Bachelor of Music)
• Minor in music

The Bachelor of Music program offers concentrations in composition, music education, music therapy, and performance; a second emphasis in jazz studies may be added to the performance concentration. Professional certification in music education and music therapy are available only through the B.M.

The Bachelor of Arts is a nonprofessional degree for students who are not planning careers as musicians or who plan to earn more than one bachelor's degree or a B.A. with more than one major, including a second major in a performing arts area.

All undergraduate enrollments require School of Music approval. Entering first-year and transfer students who plan to major in music must be accepted into a performance area through audition either in person or by recording before they register. Students who plan to major in composition also must submit examples of creative work; for details, see "Composition Concentration" below. All entering students must complete the online theory diagnostic examination for MUS:1201 Musicianship and Theory I and a piano proficiency exam to determine appropriate placement in related courses.

Transfer students admitted to the School of Music must complete a minimum of one year of applied music (lower- or upper-level) and one year of major ensemble at the University of Iowa in order to earn a degree in music. Transfer students who have not completed the equivalent of the four-semester sequence of Musicianship and Theory I-IV (MUS:1201 Musicianship and Theory I, MUS:1202 Musicianship and Theory II, MUS:2203 Musicianship and Theory III, and MUS:2204 Musicianship and Theory IV) must complete a theory diagnostic exam to determine appropriate placement in the musicianship and theory sequence. Transfer students who have not completed the equivalent of two semesters of class piano or a piano proficiency exam must meet piano proficiency requirements at the University of Iowa.

Bachelor of Music

The Bachelor of Music requires a minimum of 120 s.h. of credit. Students must maintain a g.p.a. of at least 2.00 in all courses for the major and in all UI courses for the major. They also must complete the College of Liberal Arts and Sciences General Education Program (p. 313).

The program offers concentrations in composition, music therapy, and performance; a second emphasis in jazz studies may be added to the performance concentration. Bachelor of Music students may not choose guitar as their major instrument, and Bachelor of Arts students may not transfer to the B.M. program with guitar as their major instrument. Students seeking licensure/certification in music education or music therapy should enroll in the B.M. program.

Many students earn more than 120 s.h. in fulfilling the requirements for their majors—for instance, those who choose the music therapy concentration or seek teacher certification. The College of Liberal Arts and Sciences maximum hours rule does not apply to the Bachelor of
Music, so B.M. students may count more than 56 s.h. of course work in music toward the degree.

The Bachelor of Music requires the following School of Music course work.

**GENERAL COURSE REQUIREMENTS**

All of these:

- MUS:1200 Fundamentals of Music for Majors (or successful completion of the online theory diagnostic examination for MUS:1201) 3 s.h.
- MUS:1201 Musicanship and Theory I 4 s.h.
- MUS:1202 Musicanship and Theory II 4 s.h.
- MUS:1211 Group Instruction in Piano I (or successful completion of proficiency exam I) 1 s.h.
- MUS:1212 Group Instruction in Piano II (or successful completion of proficiency exam II) 1 s.h.
- MUS:2203 Musicanship and Theory III 4 s.h.
- MUS:2204 Musicanship and Theory IV 4 s.h.

To register for MUS:1201, students also must register for MUS:1211 or already have completed that course or have been exempted from it by proficiency exam. To register for MUS:1202, students also must register for MUS:1212 or already have completed that course or have been exempted from it by proficiency exam. Transfer students should complete the group piano requirement during their first year in residence unless they are exempted by proficiency exam.

This course:

- MUS:1210 Recital Attendance (six semesters) 6 s.h.

Six semesters of MUS:1210 are required for all B.M. students, except music therapy students, who are required to take four semesters. Transfer students should plan to enroll in this course each of their remaining semesters, or until the requirement is met.

All of these:

- MUS:2301 History of Music I (western music of the Middle Ages, Renaissance, and Baroque) 3 s.h.
- MUS:2302 History of Music II (western music 1750-present) 3 s.h.
- MUS:3625 Techniques of Conducting 2 s.h.
- MUS:4900 Senior Recital 1 s.h.

To complete the senior recital, students must have achieved upper-level applied status or be enrolled in upper-level applied music courses (see "Applied Music" below). Music therapy students may complete a senior recital or a senior research project. Composition students substitute MUS:4910 Bachelor’s Thesis for the senior recital. The senior recital, research project, or thesis must be completed at the University of Iowa.

One of these:

- MUS:1009 Jazz Cultures in America and Abroad 3 s.h.
- MUS:1310 World Music 3 s.h.
- MUS:1720 History of Jazz 3 s.h.
- MUS:2311 Music of Latin America and the Caribbean 3 s.h.

At least 3 s.h. from these:

- MUS:2206 Form and Analysis 3 s.h.
- MUS:3001 Introduction to Improvisation 3 s.h.
- MUS:3220 Instrumentation 2 s.h.
- MUS:3665 Arranging for Band 2 s.h.
- MUS:3710 Intermediate Jazz Improvisation 2 s.h.
- MUS:3750 Jazz Theory 3 s.h.
- MUS:4200 Counterpoint Before 1600 3 s.h.
- MUS:4201 Counterpoint After 1600 3 s.h.
- MUS:4210 Keyboard Harmony 2 s.h.
- MUS:4710 Advanced Jazz Improvisation 2 s.h.
- MUS:4750 Transcription 2 s.h.

**APPLIED MUSIC**

Students must complete four years of applied music. Instruction is provided on two levels, lower and upper. Students must achieve upper-level status before they may present the senior recital. Readiness for upper-level applied music is determined by a jury examination in the area. The eighth semester of applied music may be waived for students who have successfully completed a senior recital, are enrolled in the Teacher Education Program, and are student teaching. Students are allowed a maximum of six semesters (not including summer) in lower-level applied instruction. Those who want to continue lessons beyond the maximum allowable lower-level registration must do so under the nonmajor category.

Composition students are required to take 6 s.h. of lower-level applied music and 2 s.h. of secondary piano. Music therapy students who complete a senior research project rather than a senior recital are required to take three years of lower-level applied music.

**ENSEMBLE PARTICIPATION**

Students must complete eight semesters of major ensemble participation. They normally enroll in a major ensemble during consecutive semesters, beginning early in their degree work, to ensure timely completion of the requirement. Ensemble assignments are made at the discretion of the major teacher and ensemble director. String students participate in University Orchestra and Chamber Orchestra. Wind and percussion students participate in Symphony Band/Concert Band/University Band. Voice students participate in Camerata Singers, University Choir, Kantorei, and/or University Chorale. Keyboard students may substitute accompaniment for major ensemble participation for two semesters during their junior and/or senior years, with their major applied-music teacher’s consent. Composition students may, with their advisor’s consent, substitute two semesters of other ensembles during their junior and/or senior year.

Music therapy students who complete a senior research project rather than a senior recital are required to complete 6 s.h. of major ensemble participation.

Any student who wants to request adjustment of the major ensemble requirement must submit his or her request in writing to a review committee consisting of the ensemble director(s) involved, the studio instructor, and the associate director for undergraduate studies.

Major ensembles are as follows:

- MUS:1176 Women's Chorale 1 s.h.
- MUS:3160 Symphony Band/Concert Band 1 s.h.
- MUS:3170 Kantorei 1 s.h.
MUS:3172 Camerata Singers 1 s.h.
MUS:3174 University Choir 1 s.h.
MUS:3180 Orchestra 1 s.h.

ELECTIVES
Students may take advanced electives in performance (including chamber music and piano accompaniment), theory, composition, music education, music therapy, music history, diverse music cultures, music literature, conducting, and orchestration.

Performance Concentrations
A performance concentration is available in each of the orchestral areas—strings, brass, woodwinds, and percussion—and in voice, piano, and organ. Students must take at least an additional 17 s.h. beyond the School of Music general course requirements. This course work includes required courses and electives unique to each performance area. Course listings for each of the respective areas are available from the School of Music office.

JAZZ STUDIES EMPHASIS
Students with a performance concentration may add a second emphasis in jazz studies. To be admitted to the jazz studies emphasis, students must audition after they complete their first year. Students admitted to the emphasis are assigned to the jazz studies advisor in addition to their regular faculty advisor.

Senior recital and recital attendance requirements are the same as those for the Bachelor of Music. In addition to satisfying all course requirements for the B.M., jazz studies emphasis students must complete 21 s.h. of jazz course work. Many jazz studies courses fulfill other B.M. course requirements, including music electives.

Music Therapy Concentration
Admission to the music therapy concentration is based on successful completion (grade of C-plus or higher) of MUS:1687 Orientation to Music Therapy. Students must earn a B-minus or higher in all remaining music therapy core courses. In addition to the core courses in music therapy listed below, specific courses are required in biology, anatomy, psychology, and music.

A six-month, full time internship in an American Music Therapy Association (AMTA) approved off-campus clinical facility is required for completion of the degree. There are a limited number of approved music therapy internships in the Iowa City area, and many internship placements require relocation to a different city. Students are eligible to begin applying for their internship one year prior to the start of the internship. Securing an internship typically involves completing application materials, interviewing on site or via electronic platform, and demonstrating musical competencies. Students are not automatically placed in internships, but must work with the clinical advisor to select and apply for appropriate programs. Following successful completion of the internship, students are eligible to take the board certification examination in music therapy. This exam is offered through the Certification Board for Music Therapists. This leads to national board certification as a music therapist, with the credential music therapist-board certified (MT-BC).

Since music therapists work with vulnerable populations, the School of Music is required to run a criminal background check on all students when they begin their clinical experiences. Criminal convictions could negatively impact a student's ability to continue in the music therapy program and/or gain placement at an internship site. For more information, contact the director of the music therapy program.

The music therapy concentration requires the following course work.

All of these:
MUS:1687 Orientation to Music Therapy 2 s.h.
MUS:3675 Music Therapy Practicum (Section 1 taken twice for 2 s.h. and Section 2 taken once for 1 s.h.) 5 s.h.
MUS:3680 Music in Special Education 2-3 s.h.
MUS:3690 Music Therapy with Adults 3 s.h.
MUS:4670 Internship in Music Therapy arr.
MUS:4685 Music Therapy with Children 3 s.h.
EDTL:4630 Psychology of Music 2-3 s.h.
EDTL:4640 Introduction to Music Research 2-3 s.h.

At least two of these (total of 4 s.h.):
MUS:2671 Music Foundations in Therapy I 2 s.h.
MUS:2672 Music Foundations in Therapy II 1-2 s.h.
MUS:3676 Percussion Experience for Teachers and Therapists 1 s.h.

All of these:
MUS:1120 Undergraduate Secondary Performance—Voice (two semesters required) 2 s.h.
MUS:1210 Recital Attendance (four semesters required) 4 s.h.
MUS:1211 Group Instruction in Piano I 1 s.h.
MUS:1212 Group Instruction in Piano II 1 s.h.
MUS:2213 Group Instruction in Piano III 1 s.h.

One of these:
MUS:3851 Introduction to the Alexander Technique 3 s.h.
DANC:3085 Introduction to Afro-Cuban Dance 1 s.h.

One of these:
MUS:1007 Garage Band: The Basics 2 s.h.
MUS:3665 Arranging for Band 2 s.h.

One of these:
MUS:1121 Lower Level Secondary Performance—Piano 1 s.h.
MUS:3001 Introduction to Improvisation 3 s.h.

One of these:
PSY:2930 Abnormal Psychology: Health Professions 3 s.h.
PSY:3320 Abnormal Psychology 3 s.h.

One of these:
ANTH:1101 Cultural Anthropology 3 s.h.
PSY:2301 Introduction to Clinical Psychology 3 s.h.
Music

PSY:2601 Introduction to Cognitive Psychology 3 s.h.
PSY:2701 Biological Psychology 4 s.h.
One of these:
PSQF:4106 Child Development 3 s.h.
PSY:2401 Introduction to Developmental Science 3 s.h.
One of these:
CSD:1015 Introduction to Speech and Hearing Processes and Disorders 2 s.h.
CSD:2140 Manual Communication 1 s.h.
PSQF:1075 Educational Psychology and Measurement 3 s.h.
RCE:4178 Microcounseling 1-3 s.h.
RCE:4199 Counseling for Related Professions 3 s.h.
SSW:1800 Basic Aspects of Aging 3 s.h.
One of these:
MUS:4675 Senior Project in Music Therapy 1 s.h.
MUS:4900 Senior Recital 1 s.h.
Music therapy students who elect the senior recital/performance option must take four years of applied music and attain upper-level status; they also must take 8 s.h. of major ensemble participation. Vocal majors choosing this option also must take MUS:1510 Diction for Singers I and MUS:2510 Diction for Singers II.
Music therapy students who elect the senior project/clinical option must take three years of applied music and 6 s.h. of major ensemble. They also must take an additional 4 s.h. of music performance courses in areas such as MUS:1120 Undergraduate Secondary Performance—Voice, MUS:1121 Lower Level Secondary Performance—Piano, MUS:1137 Secondary Performance—Percussion, MUS:3154 Introduction to Afro-Cuban Drumming, MUS:3163 Steel Band, or other courses approved by the advisor.
In order to satisfy national certification requirements, all music therapy students must fulfill certain CLAS General Education Program requirements with specific courses. Students should consult their music therapy advisor before selecting General Education courses.

Composition Concentration
The composition concentration is open to students who have been admitted to a performance area in the School of Music. Before admission to the concentration, students normally must complete the following four-semester sequence.
MUS:1201 Musicianship and Theory I 4 s.h.
MUS:1202 Musicianship and Theory II 4 s.h.
MUS:2203 Musicianship and Theory III 4 s.h.
MUS:2204 Musicianship and Theory IV 4 s.h.
The last course in the sequence, MUS:2204, is a prerequisite for MUS:2220 Composition (undergraduate composition lessons).
Applicants to the composition concentration must submit a portfolio of creative work to the composition faculty for evaluation and acceptance into the program. Students who wish to prepare a portfolio may register for MUS:1139 Secondary Performance—Composition.
Composition students must satisfy the degree requirements stated under “Bachelor of Music.” The composition concentration requires additional course work in composition and music theory; contact the School of Music office.
The course MUS:4910 Bachelor’s Thesis replaces the recital required of applied music students. It consists of one or more compositions, approved by a committee of three faculty members and performed in regularly scheduled School of Music recitals.

B.M. with Teacher Licensure
Music majors who intend to earn licensure to teach in elementary and/or secondary schools must complete the College of Education’s Teacher Education Program (TEP) in addition to the requirements for the Bachelor of Music major and all requirements for graduation.
Students must satisfy all degree requirements and complete Teacher Education Program licensure before degree conferral.
Undergraduate students seeking teacher licensure/certification must be enrolled in a Bachelor of Music program in performance and must complete the appropriate licensure program (e.g., band, choral, string). Students must be admitted to the Teacher Education Program before they may take required professional education courses. See “Admission to the Teacher Education Program” below.
All students must complete the College of Liberal Arts and Sciences General Education Program (p. 313). In addition to the B.M. requirements in music, TEP students must take General Education courses that fulfill licensure requirements. The certification program requires courses in music methods and techniques, professional education courses, and student teaching.
The following courses are required for all music TEP students.
EDTL:3002 Technology in the Classroom 2 s.h.
EDTL:3090 Orientation to Secondary Education 1 s.h.
EDTL:3095 Teaching Reading in Secondary Content Areas 1 s.h.
EDTL:3610 Introduction and Practicum: Music 2 s.h.
EDTL:3620 Methods and Materials: General Music 3 s.h.
EDTL:4087 Seminar: Curriculum and Student Teaching 1 s.h.
EDTL:4091 Observation and Laboratory Practice in the Secondary School 6 s.h.
EDTL:4192 Special Area Student Teaching 6 s.h.
EDTL:4900 Foundations of Special Education 3 s.h.
EPLS:3000 Foundations of Education 3 s.h.
EPLS:4180 Human Relations for the Classroom Teacher 3 s.h.
PSQF:1075 Educational Psychology and Measurement 3 s.h.
One college-level math course, excluding MATH:0100, MATH:0300, and MATH:1005
BRASS, WOODWIND, AND PERCUSSION STUDENTS
Brass, woodwind, and percussion students in the TEP participate in MUS:1165 Hawkeye Marching Band for one semester. Exceptions must be approved by the head of the music education area.

The following courses are required.

- MUS:1165 Hawkeye Marching Band 1 s.h.
- MUS:1711 Jazz Rhythms and Interpretation 1 s.h.
- MUS:3659 Class Strings (Section 1) 1 s.h.
- MUS:3666 Marching Band Techniques 1 s.h.
- MUS:3760 Jazz Band Techniques 1 s.h.
- EDTL:3605/MUS:3605 Instrumental Techniques (taken three times) 6 s.h.
- EDTL:3630/MUS:3630 Band Methods and Materials 3 s.h.
- EDTL:3635/MUS:3635 Instrumental Conducting 3 s.h.

STRING STUDENTS
String majors in the TEP take one semester of secondary performance on each of three string instruments other than their primary instrument (total of 3 s.h.).

The following courses are required.

- MUS:3659 Class Strings (section 2, taken three times) 3 s.h.
- MUS:3664 Introduction to Band Instruments 2 s.h.
- EDTL:3635/MUS:3635 Instrumental Conducting 3 s.h.
- EDTL:3660/MUS:3660 String Methods and Materials 3 s.h.

VOCAL AND KEYBOARD STUDENTS
Vocal majors in the TEP register for MUS:1121 Lower Level Secondary Performance—Piano for one semester. Keyboard students register for MUS:1120 Undergraduate Secondary Performance—Voice for two semesters, MUS:1510 Diction for Singers I, and MUS:2510 Diction for Singers II. Keyboard majors with a choral music emphasis must include choral ensembles in their major ensemble experience.

The following courses are required.

- MUS:2213 Group Instruction in Piano III 1 s.h.
- EDTL:3640/MUS:3640 Choral Methods 3 s.h.
- EDTL:3645/MUS:3645 Choral Conducting and Literature 3 s.h.
- Secondary performance 1-2 s.h.

KEYBOARD STUDENTS (NONVOCAL)
Keyboard students who plan to teach in nonvocal areas complete the requirements in either the brass-woodwind-percussion area or the string area, as stated above.

Admission to the Teacher Education Program
Application forms for admission to the Teacher Education Program are available from the Office of Education Services at the College of Education. Application deadlines for the secondary Teacher Education Program are October 1 for entry the following spring or fall. The Teacher Education Program in music accepts a limited number of applicants; meeting the minimum requirements (stated below) does not guarantee admission.

Minimum requirements for admission to the music TEP are:
- admission to the School of Music;
- a University of Iowa g.p.a. and a cumulative g.p.a. of at least 3.00 at the time of admission to the program;
- a g.p.a. of at least 3.00 on all music course work;
- successful completion of MUS:1201 Musicianship and Theory I and MUS:1202 Musicianship and Theory II;
- completion of at least 30 s.h. of college credit;
- completion of a 10-hour volunteer practicum in a K-12 school setting (volunteer verification form on the Teacher Education Program application web site);
- a completed application form;
- two recommendations (with original signatures, forms on the Teacher Education Program application web site);
- transcript(s) of all college courses;
- an essay, typewritten on a separate sheet, of no more than 500 words on the topic of a contemporary teaching challenge faced by teachers nationally and how you would address it;
- a resume, typewritten on a separate sheet, of paid or volunteer work experience, including jobs, employers, and dates of employment; and
- an acceptable score on either the Praxis I exam (Pre-Professional Skills Tests, combined test, test code 5750) with a cumulative score of at least 522 and no score below 170 on the reading, writing, and mathematics tests, or Praxis Core (combined test, test code 5751) for reading (156), writing (162), mathematics (150).

Beginning fall 2015, first-year students interested in seeking music licensure, who earned a high school g.p.a. of 3.20 and who are accepted into the School of Music, are directly admitted into the Teacher Education Program. By the last day (Friday) of finals week in the fall semester, any student who has been directly admitted through early admission must also complete the following:

- achieve passing scores on a standardized test, either Praxis I (PPST or CPPST) with a cumulative score of at least 522, and no score below 170 on reading, writing, and mathematics tests, or Praxis Core (combined test, test code 5751) for reading (156), writing (162), mathematics (150);
- at least 10 hours of volunteer work (if not done prior to admission) and submission of the verification form; and
- a criminal background check.

Bachelor of Arts
The Bachelor of Arts with a major in music requires a minimum of 120 s.h., including 42-47 s.h. of work for the major. Students must maintain a g.p.a. of at least 2.00 in all courses for the major and in all UI courses for the major. They also must complete the College of Liberal Arts and Sciences General Education Program (p. 313). Students must satisfy all requirements for graduation with
a bachelor's degree; contact the School of Music and the Academic Advising Center to learn more.

The music major for the Bachelor of Arts is designed for students who have strong abilities and interest in music but are not planning on careers as musicians or who wish to pursue a double major or earn more than one bachelor's degree. Students must audition and be accepted into a performance area. They develop musicianship and performance skills and choose from a wide variety of music electives.

Students in many areas, from engineering and physics to history, art, and English, find that a B.A. in music is a good addition to their studies. Other students choose the B.A. in music to complement course work in business (especially the minor in business administration), foreign language and literature, or interdisciplinary fields such as American studies. Some students combine a B.A. in music with undergraduate preparation to study law or medicine.

All music majors with scholarships must participate in a major ensemble and studio lessons each semester.

The major in music (Bachelor of Arts) requires the following course work.

All of these:

- MUS:1200 Fundamentals of Music for Majors (or successful completion of MUS:1201 online theory diagnostic examination) 3 s.h.
- MUS:1201 Musicianship and Theory I 4 s.h.
- MUS:1202 Musicianship and Theory II 4 s.h.
- MUS:1211 Group Instruction in Piano I (or successful completion of proficiency exam I) 1 s.h.
- MUS:1212 Group Instruction in Piano II (or successful completion of proficiency exam II) 1 s.h.

To register for MUS:1201, students also must register for MUS:1211 or already have completed that course or have been exempted from it by proficiency exam. To register for MUS:1202, students also must register for MUS:1212 or already have completed that course or have been exempted from it by proficiency exam. Transfer students should complete the group piano requirement during their first year in residence unless they are exempted by proficiency exam.

All of these:

- MUS:1210 Recital Attendance (two semesters) 2 s.h.
- Lower-level applied music 4 s.h.
- Major ensemble (minimum of four semesters) 4 s.h.

For a list of major ensembles, see "Ensemble Participation" under "Bachelor of Music" above. With approval, students may use MUS:3730 Jazz Band to satisfy the major ensemble requirement. Any student who wishes to request adjustment of the major ensemble requirement must submit his or her request in writing to a review committee consisting of the ensemble director(s) involved, the studio instructor, and the associate director for undergraduate studies.

Two of these:

- MUS:1720 History of Jazz 3 s.h.
- MUS:2301 History of Music I 3 s.h.
- MUS:2302 History of Music II 3 s.h.

At least 6 s.h. from these:

- MUS:1310 World Music 3 s.h.
- MUS:1720 History of Jazz 3 s.h.
- MUS:2203 Musicianship and Theory III 4 s.h.
- MUS:2204 Musicianship and Theory IV 4 s.h.
- MUS:2301 History of Music I 3 s.h.
- MUS:2302 History of Music II 3 s.h.
- MUS:2311 Music of Latin America and the Caribbean 3 s.h.
- MUS:3625 Techniques of Conducting 2 s.h.
- MUS:3665 Arranging for Band 2 s.h.
- MUS:3750 Jazz Theory 3 s.h.
- MUS:4200 Counterpoint Before 1600 3 s.h.
- MUS:4750 Transcription 2 s.h.
- MUS:4760 Jazz Composition and Arranging 2 s.h.

All of these:

- Performance electives (lower- or upper-level applied music, ensembles, or improvisation) 6 s.h.
- Music electives 6 s.h.

**Four-Year Graduation Plan**

The following checkpoints list the minimum requirements students must complete by certain semesters in order to stay on the University's Four-Year Graduation Plan.

In addition to the requirements listed under the checkpoints, all students must complete 2 s.h. in applied music and 1 s.h. in a major ensemble each semester.

The Four-Year Graduation Plan is not available for music therapy and music education.

**Bachelor of Arts**

The Bachelor of Arts in music requires 42-47 s.h. in School of Music courses.

**Before the third semester begins:** 15-18 s.h. of course work in the major, including MUS:1201 Musicianship and Theory I, MUS:1202 Musicianship and Theory II, MUS:1211 Group Instruction in Piano I, and MUS:1212 Group Instruction in Piano II

**Before the fifth semester begins:** at least 23-32 s.h. of course work in the major

**Before the seventh semester begins:** at least 33-41 s.h. of course work in the major and at least 90 s.h. earned toward the degree

**Before the eighth semester begins:** at least 40-46 s.h. of course work in the major

**During the eighth semester:** enrollment in all remaining course work in the major, all remaining General Education courses, and a sufficient number of semester hours to graduate

**Bachelor of Music**

Students may apply more than 56 s.h. earned in School of Music courses toward the minimum 120 s.h. required for the B.M.

**Before the third semester begins:** 18 s.h. of course work in the major, including MUS:1201 Musicianship and Theory I, MUS:1202 Musicianship and Theory II, MUS:1211 Group Instruction in Piano I, and MUS:1212 Group Instruction in Piano II
Before the fifth semester begins: at least 34 s.h. of course work in the major, including MUS:2203 Musicianship and Theory III and MUS:2204 Musicianship and Theory IV

Before the seventh semester begins: at least 50 s.h. of course work in the major and at least 90 s.h. earned toward the degree

Before the eighth semester begins: at least 56 s.h. of course work in the major

During the eighth semester: enrollment in all remaining course work in the major, all remaining General Education courses, and a sufficient number of semester hours to graduate

Honors in the Major

Students majoring in music have the opportunity to graduate with honors in the major. Members of the School of Music honors program must have a g.p.a. of at least 3.80 in music.

To graduate with honors in the music major, students must complete at least 6 s.h. of honors work in music, normally in their junior and senior years. They must earn a minimum of 3 s.h. of the required honors work in MUS:4995 Honors in Music by completing one or more honors projects, such as solo or ensemble recitals; compositions, transcriptions, orchestrations, or arrangements; and essays, research papers, editions, or translations. Honors projects must be in addition to the projects normally required for graduation with a major in music.

Students also may earn honors credit in other honors courses (normally upper-level undergraduate courses) or in approved graduate courses (music history and music theory are particularly recommended).

For complete details about requirements for graduation with honors in the music major, visit Honors in Music on the School of Music web site and consult the school’s honors advisor.

In addition to honors in their majors, undergraduate students have a variety of opportunities for honors study and activities through membership in the University of Iowa Honors Program; visit Honors at Iowa to learn about the University’s honors program.

Minor

The minor in music requires a minimum of 15 s.h. in music courses, including 12 s.h. earned in courses considered advanced for the minor (music courses numbered 3000 or above) and 8 s.h. taken at the University of Iowa. Students must maintain a g.p.a. of at least 2.00 in all courses for the minor and in all UI courses for the minor. Course work for the minor may not be taken pass/nonpass.

Work for the minor must include one music theory course, one music history course, and 3 s.h. of performance courses (applied instruction or ensembles). Auditions with the instructor are required for admission to the lower-level applied instruction courses; admission to the theory courses is determined by results on the theory placement exam or completion of MUS:1200 Fundamentals of Music for Majors.

The following courses are also considered advanced for the minor.

### Courses for Nonmajors

The School of Music offers a wide range of courses that are appropriate for non-music majors. Courses about jazz, music and culture, music history, music software, and other topics are available as well as individual instruction on a number of instruments and voice. See “General Music Courses,” “Jazz Studies,” and “Music History” under “Courses” later in this Catalog section.

Several School of Music courses are approved for General Education; look for courses with the prefix MUS under "Literary, Visual, and Performing Arts" in the General Education Program (p. 313) section of the Catalog.

Participation in School of Music ensembles is open to all University of Iowa students with the ensemble director’s approval. Major ensembles are as follows.

- MUS:1176 Women’s Chorale 1 s.h.
- MUS:1180 All-University String Orchestra 1 s.h.
- MUS:3160 Symphony Band/Concert Band 1 s.h.
- MUS:3170 Kantorei 1 s.h.
- MUS:3172 Camerata Singers 1 s.h.
- MUS:3174 University Choir 1 s.h.
- MUS:3180 Orchestra 1 s.h.

Other courses particularly recommended for music non-majors include the following.

- MUS:1000 First-Year Seminar 1 s.h.
- MUS:1001 Group Piano I: Non-Music Majors 1 s.h.
- MUS:1002 Group Piano II: Non-Music Majors 1 s.h.
- MUS:1007 Garage Band: The Basics 2 s.h.
- MUS:1009 Jazz Cultures in America and Abroad 3 s.h.
- MUS:1010 Recital Attendance for Non-Majors 1 s.h.
- MUS:1012 Creativity in Music 3 s.h.
- MUS:1020 Performance Instruction for Nonmajors (interested students should consult with the instructor of their instrument) 1 s.h.
- MUS:1066 Introduction to Film Music 3 s.h.
- MUS:1100 Fundamentals of Music for Non-Music Majors 3 s.h.
- MUS:1301 Concepts and Contexts of Western Music 3 s.h.
- MUS:1302 Great Musicians 3 s.h.
- MUS:1310 World Music 3 s.h.
- MUS:1720 History of Jazz 3 s.h.
from the School of Music academic office. Describing the general content of these tests is available during the spring and summer sessions by appointment. A leaflet is distributed preceding the opening of classes, and at the beginning of each semester on the two days (except Sunday) immediately preceding the opening of classes. These examinations are given at the beginning of the fall semester, and are optional for students in music therapy. Students in music therapy are not required to take the advisory examinations in music theory or music history. M.A. students take two School of Music advisory examinations: one in music theory and one in music history and literature. M.A. students in music therapy need not take the advisory examination in music theory or music history. These examinations are given at the beginning of the fall semester on the two days (except Sunday) immediately preceding the opening of classes, and at the beginning of the spring and summer sessions by appointment. A leaflet describing the general content of these tests is available from the School of Music academic office.

PRELIMINARY PROCEDURES FOR MUSIC THERAPY GRADUATE STUDENTS

Since music therapists work with vulnerable populations, the School of Music is required to run a criminal background check on all students when they begin their clinical experiences. Criminal convictions could negatively impact a student's ability to continue in the music therapy program and/or gain placement at an internship site. For more information, contact the director of the music therapy program.

ENSEMBLE PARTICIPATION

Graduate students in the performance and pedagogy tracks of all graduate programs are required to complete four semesters of major ensemble participation. Students normally enroll in major ensemble participation during consecutive semesters beginning early in their degree work, to ensure completion of the major ensemble requirements in a timely manner. Ensemble assignments are made at the discretion of the major teacher and ensemble director.

Major ensembles are as follows:

- MUS:1176 Women's Chorale 1 s.h.
- MUS:3160 Symphony Band/Concert Band 1 s.h.
- MUS:3170 Kantorei 1 s.h.
- MUS:3172 Camerata Singers 1 s.h.
- MUS:3174 University Choir 1 s.h.
- MUS:3180 Orchestra 1 s.h.

Keyboard majors may substitute piano accompaniment for major ensemble participation, at the major applied teacher's discretion. Jazz studies majors substitute MUS:3730 Jazz Band for major ensemble participation. Theory, composition, music education, and music therapy majors have no major ensemble requirement. The M.A. in musicology requires one semester of any ensemble.

Any student who wants to request adjustment of this requirement must submit his or her request in writing to a review committee consisting of the major ensemble director(s) involved, the major teacher, and the School of Music associate director for graduate studies.

Master of Arts

The Master of Arts program in music requires a minimum of 30-37 s.h. of graduate credit. The M.A. concentrations in performance, conducting, jazz studies, composition, music theory, musicology, music therapy, and music education require a recital, capstone project, or thesis. Performance majors present a public recital in place of a written thesis. Music therapy majors complete a capstone research project. Jazz studies majors present a public recital and a separate performance project. The Master of Arts in music education is offered with thesis and nonthesis options.

All M.A. programs—except music therapy and music education—require the following course work.

INTRODUCTORY COURSE

- MUS:5300 Introduction to Graduate Study in Music 2 s.h.

MUSIC THEORY

Students must earn 6 s.h.
Students exempted from MUS:5200 through the advisory examination in music theory must substitute an additional theory elective chosen from the following.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>MUS:4200</td>
<td>Counterpoint Before 1600</td>
<td>3</td>
</tr>
<tr>
<td>MUS:4201</td>
<td>Counterpoint After 1600</td>
<td>3</td>
</tr>
<tr>
<td>MUS:5235</td>
<td>Tonal Analysis</td>
<td>3</td>
</tr>
<tr>
<td>MUS:5236</td>
<td>Post-Tonal Analysis</td>
<td>3</td>
</tr>
<tr>
<td>MUS:5240</td>
<td>Special Topics in Theory and Analysis</td>
<td>3</td>
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</table>

Students also must choose one elective from these:

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<td>Tonal Analysis</td>
<td>3</td>
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<tr>
<td>MUS:5236</td>
<td>Post-Tonal Analysis</td>
<td>3</td>
</tr>
<tr>
<td>MUS:5240</td>
<td>Special Topics in Theory and Analysis</td>
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**MUSIC HISTORY**

Students must earn 6 s.h.

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<tr>
<th>Course Code</th>
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<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>MUS:5301</td>
<td>Advanced History and Literature of Music I</td>
<td>3</td>
</tr>
<tr>
<td>MUS:5302</td>
<td>Advanced History and Literature of Music II</td>
<td>3</td>
</tr>
</tbody>
</table>

Students exempted from MUS:5301 and/or MUS:5302 through the advisory examination in music history must substitute a music history course from the following list for each of the exemptions.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>MUS:6310</td>
<td>Seminar in Musicology</td>
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</tr>
<tr>
<td>MUS:6314</td>
<td>Topics in Ethnomusicology</td>
<td>3</td>
</tr>
<tr>
<td>MUS:6315</td>
<td>Foundations of Ethnomusicology</td>
<td>3</td>
</tr>
<tr>
<td>MUS:6325</td>
<td>Renaissance Music</td>
<td>3</td>
</tr>
<tr>
<td>MUS:6326</td>
<td>Renaissance Music Notations</td>
<td>3</td>
</tr>
<tr>
<td>MUS:6330</td>
<td>Seventeenth-Century Music</td>
<td>3</td>
</tr>
<tr>
<td>MUS:6335</td>
<td>Eighteenth-Century Music</td>
<td>3</td>
</tr>
<tr>
<td>MUS:6340</td>
<td>Nineteenth-Century Music</td>
<td>3</td>
</tr>
<tr>
<td>MUS:6345</td>
<td>Music 1900-1945</td>
<td>3</td>
</tr>
<tr>
<td>MUS:6350</td>
<td>Music 1945-Present</td>
<td>3</td>
</tr>
<tr>
<td>MUS:6355</td>
<td>American Music</td>
<td>3</td>
</tr>
<tr>
<td>MUS:6375</td>
<td>Music Editing</td>
<td>3</td>
</tr>
</tbody>
</table>

**Doctor of Musical Arts**

The Doctor of Musical Arts is offered with two concentrations: conducting, and performance and pedagogy. Requirements for the D.M.A. are the same as for the Ph.D. (see "Doctor of Philosophy" above), except that the D.M.A. requires three recitals or programs (MUS:7900 D.M.A. Recital and MUS:7970 D.M.A. Essay) instead of the Ph.D. thesis. At the performance area’s discretion, a concerto performance with orchestra or other appropriate ensemble from the School of Music may be substituted for one of the recitals. Some performance areas allow one or more lecture recitals, with faculty approval. Singers may substitute one major opera role or one major solo contribution to an orchestra performance for one of their recitals. See the school's associate director for graduate programs for specific area requirements.

**Minor in Theory Pedagogy**

The graduate minor in theory pedagogy requires 15-18 s.h. of credit. The program is open to students who have already been admitted to a graduate degree program in the School of Music. The minor requires the following courses.

One of these:

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<tbody>
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</tr>
<tr>
<td>MUS:4201</td>
<td>Counterpoint After 1600</td>
<td>3</td>
</tr>
</tbody>
</table>

Both of these:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUS:6200</td>
<td>Music Theory Colloquium (taken twice)</td>
<td>0</td>
</tr>
<tr>
<td>MUS:6215</td>
<td>Music Theory Pedagogy</td>
<td>3</td>
</tr>
</tbody>
</table>
Music

One of these:
MUS:5235 Tonal Analysis 3 s.h.
MUS:6250 Advanced Tonal Theory and Analysis 3 s.h.

One of these:
MUS:5236 Post-Tonal Analysis 3 s.h.
MUS:6251 Advanced Post-Tonal Theory and Analysis 3 s.h.

Two of these:
MUS:5240 Special Topics in Theory and Analysis 3 s.h.
MUS:6210 History of Music Theory I 3 s.h.
MUS:6211 History of Music Theory II 3 s.h.
MUS:6250 Advanced Tonal Theory and Analysis 3 s.h.
MUS:6251 Advanced Post-Tonal Theory and Analysis 3 s.h.

Certificate in Sacred Music

The Certificate in Sacred Music requires 25 s.h. It is an interdisciplinary program with courses in sacred music, choral conducting and literature, keyboard, voice, religion, and art and art history. Students may earn the certificate while working toward a graduate degree. Individuals not enrolled in a graduate program also may complete the certificate, but they must be admitted to the Graduate College and have the consent of a faculty advisor.

The certificate requires the following course work.

Liturgy, History of Church Music, Hymnology, and Keyboard Studies (10-11 s.h.)

Both of these:
MUS:4452 Liturgics 2 s.h.
MUS:4454 Service Playing and Improvisation 2 s.h.

At least 3 s.h. from these:
MUS:3021 Upper Level Piano arr.
MUS:3022 Upper Level Organ arr.
MUS:4210 Keyboard Harmony 1-2 s.h.
MUS:6021 Major Piano arr.
MUS:6022 Major Organ arr.

At least 3 s.h. from these:
MUS:4450 Organ Literature Survey 2 s.h.
MUS:5450 History of Organ Building and Design 2-3 s.h.
MUS:5452 Organ Pedagogy 2 s.h.
MUS:5465 Hymnology 1-2 s.h.
MUS:5475 Organ Literature Special Topics 2 s.h.

Choral Conducting, Literature, and Vocal Studies (7-8 s.h.)

Required (if no previous conducting study):
MUS:3625 Techniques of Conducting 2 s.h.

At least 3 s.h. from these:
MUS:3020 Upper Level Voice arr.
MUS:3645 Choral Conducting and Literature 3 s.h.

MUS:5510 Graduate Diction 2 s.h.
MUS:5520 Principles of Voice Production 3 s.h.
MUS:6020 Major Voice arr.
MUS:6520 Methods of Teaching Voice 3 s.h.
MUS:6561 Seminar: Choral Literature and Analysis I 1-3 s.h.
MUS:6562 Seminar: Choral Literature and Analysis II 1-3 s.h.
MUS:6563 Seminar: Choral Literature and Analysis III 1-3 s.h.
MUS:6564 Seminar: Choral Literature and Analysis IV 1-3 s.h.
MUS:6581 Advanced Choral Conducting I 1-3 s.h.
MUS:6582 Advanced Choral Conducting II 1-3 s.h.
MUS:6583 Advanced Choral Conducting III 1-3 s.h.
MUS:6584 Advanced Choral Conducting IV 1-3 s.h.

Religion, History, and Art History (6 s.h.)

ARTH:3070 Themes in Baroque-Era Art 3 s.h.
ARTH:3390 Early Medieval Art 3 s.h.
ARTH:3391 Themes in Medieval Art 3 s.h.
ARTH:3550 Leonardo, Raphael, and Their Contemporaries 3 s.h.
ARTH:3720 The Romantic Revolution 3 s.h.
ARTH:3730 Realism, Impressionism, Post-Impressionism 3 s.h.
ARTH:3820 Modern Art 3 s.h.
ARTH:3840 Contemporary Art 3 s.h.
HIST:4241 Varieties of American Religion 3 s.h.
HIST:4412 History of the Medieval Church 3 s.h.
HIST:4417 Medieval Intellectual History 300-1150 3 s.h.
HIST:4418 Medieval Intellectual History 1150-1500 3 s.h.
RELS:3247 Banned from the Bible: Pseudepigrapha and Apocrypha 3 s.h.
RELS:4741 Varieties of American Religion 3 s.h.
Other courses numbered 3000 or above approved by Certificate in Sacred Music advisor

Optional Electives (1-2 s.h.)

MUS:3220 Instrumentation 2 s.h.
MUS:3601 Undergraduate Music Education Workshop II 1 s.h.
Other electives numbered 3000 or above approved by the Certificate in Sacred Music advisor

Financial Support

Qualified graduate students are invited to apply for teaching and research assistantships. Inquiries should be directed to the School of Music office.

Facilities, Resources

Center for New Music

The Center for New Music is a vital component of the School of Music's composition program. Since its founding in 1966, the center has been both laboratory and showcase for late-20th and 21st-century music. It
presents at least four concerts of contemporary works each academic season. It also provides a forum for visiting composers and other creative artists, bringing new music to a variety of outreach venues. Audition, rehearsal, and programming information is available on the Center for New Music website.

**Rita Benton Music Library**
The Rita Benton Music Library is currently located in the University's Main Library. The music library holds more than 70,000 scores, including chamber music sets; 50,000 books, including bound journals; 3,500 microforms, chiefly manuscripts and early printed books; and 28,000 media items in all formats. It receives about 300 journals. Its rare book division has particular strengths in 18th- and 19th-century music theory treatises and instrumental methods, and an outstanding collection of keyboard and chamber music by Ignaz Pleyel. The library also houses the Goldman Band Collection. Music manuscripts of the composer Phillip Greeley Clapp, a former director of the school, are housed in Special Collections & University Archives.

The library's large reference collection is supplemented by several online resources, including Music Index, IIMP, Grove Music Online, RILM, RISM, RIPM, WorldCat, and InfoHawk Catalog, the University's online library catalog. Online resources for streamed audio include Classical Music Library, Naxos Music Library, Naxos Jazz, African-American Song, Smithsonian Global Sound, and the Database of Recorded American Music (DRAM).

Materials circulate to University of Iowa faculty and students and to institutions that have reciprocal agreements with the University. Individuals not affiliated with the University may qualify for borrower's permits.

**Courses**
Several School of Music courses are especially appropriate for non-music majors. Some are approved for General Education; look for them (prefix MUS) under "Literary, Visual, and Performing Arts" in the General Education Program (p. 313) section of the Catalog.

The courses listed under "General Music Courses" below are especially appropriate for non-music majors, as are several listed under "Music History" below. For others, see "Courses for Nonmajors" earlier in this Catalog section.

Non-music majors may participate in most School of Music ensembles; see "Ensembles" below.

**General Music Courses, Lower-Level Undergraduate**
The following courses are especially appropriate for non-music majors.

Instruction in MUS:1020 Performance Instruction for Nonmajors consists of a half-hour lesson per week. The course is offered on a fee-per-course basis, in addition to tuition. Students register under separate section numbers for different instruments.

**MUS:1000 First-Year Seminar**
An aspect of performance, creativity, musical literature, or scholarship; seminar format with classroom participation, papers, projects, other assignments; may require attendance at lectures, rehearsals, or performances. Requirements: first- or second-semester standing.

**MUS:1001 Group Piano I: Non-Music Majors**
Reading, technical study, chording, playing by ear, improvisation; for beginners. Requirements: non-music major. GE: Literary, Visual, and Performing Arts.

**MUS:1002 Group Piano II: Non-Music Majors**
Continuation of MUS:1001. Requirements: non-music major.

**MUS:1007 Garage Band: The Basics**
Application of GarageBand software (Mac platform) using midi keyboards; composition and music theory for projects using drag-and-drop looping, multitrack recording, sound effects, mixing, importing music for composition. Requirements: prior musical experience (student can sing or play an instrument).

**MUS:1008 Jazz Masters**
Major 20th-century jazz leaders of varied styles and recordings; developments between 1917 and present.

**MUS:1010 Recital Attendance for Non-Majors**
Musical experience through student, faculty recitals.

**MUS:1012 Creativity in Music**
Where does music come from? When, why, and how did people first start making music? How do music creators turn raw inspiration into finished pieces? How do improvisers create music on the spot? Can anyone create music or is that something only for composers? Development of music creation from long ago to present day; presentations by guest composers and performers who will demonstrate how they compose or improvise their music. GE: Literary, Visual, and Performing Arts.

**MUS:1020 Performance Instruction for Nonmajors**
Bassoon, cello, clarinet, euphonium, flute, horn, oboe, organ, percussion, piano, saxophone, string bass, trombone, trumpet, tuba, viola, violin, or voice. Requirements: non-music major. GE: Literary, Visual, and Performing Arts.

**MUS:1066 Introduction to Film Music**
Major styles and composers of film music from early 20th century to the present; focus on case studies to understand different roles music can play in cinema; opportunities to employ critical thinking and listening skills to analyze particular films or key scenes. GE: Literary, Visual, and Performing Arts.

**MUS:1100 Fundamentals of Music for Non-Music Majors**
Notation of pitch and rhythm, intervals, scales, key signatures, triads, and seventh chords. Requirements: non-music major.
MUS:1210 Recital Attendance 1 s.h.
Requirements: music major.

MUS:1301 Concepts and Contexts of Western Music 3 s.h.

MUS:1302 Great Musicians 3 s.h.

MUS:1303 Roots, Rock, and Rap: A History of Popular Music 3 s.h.
Historical narrative of popular music; focus on understanding and analyzing music of past and present in relation to major issues central to popular culture and society; production, dissemination, and reception of popular music; interpretation of ways in which music forms individual and collective identities and how contemporary musical experiences are shaped by historical processes. GE: Historical Perspectives.

MUS:1310 World Music 3 s.h.
Varied perspectives on the relationship of music and culture, drawing from musical cultures around the world. GE: Literary, Visual, and Performing Arts.

History of popular female musicians and the influence of their lyrics, music, and performances on American and British cultures; how women's musical careers have been influenced by civil rights, the British invasion (Beatles, Rolling Stones), second-wave feminism, postfeminism, Vietnam, counterculture, social injustice, music education, rock festivals, charity concerts. GE: Literary, Visual, and Performing Arts.

MUS:2106 Improvisation for Classical Musicians 3 s.h.
Theory and practice in beginning nonjazz improvisation; development of aural and rhythmic skills, creation of rhythms and melodies, use of timbres and extended techniques in expression, development of instrumental technique for improvisation, practical understanding of harmony and form, experience in solo and accompaniment roles, creation of short pieces as vehicles for improvisation. Requirements: one year of music theory.

MUS:2160 Drumline Techniques 1 s.h.
Training and experience in contemporary marching percussion and rudimental drumming techniques.

MUS:2311 Music of Latin America and the Caribbean 3 s.h.
Folk and popular musical traditions and their social contexts in Latin America, the Caribbean; listening skills; video/film screenings. GE: Literary, Visual, and Performing Arts; Values, Society, and Diversity.

MUS:2872 The Music and History of the Symphony Orchestra 3 s.h.
History and great works of symphonic literature; major composers of orchestral music; institutional history of the symphony orchestra; development of critical listening skills to identify orchestral instruments and perceive structure and style of selected orchestral works; following musical scores to derive information about orchestration, style, and form. Recommendations: upper-level non-music major or undergraduate music major.

General Music Courses, Upper-level Undergraduate and Graduate

MUS:3004 World of the Beatles 3 s.h.
How the Beatles' music was influenced by American pop music, the drug culture, and the Avant Garde, nonwestern instruments and philosophy, anti-war sentiments, and world politics, and so forth; Beatlemania's impact on British and American cultures and its role in opening Eastern Europe to the West. Same as DPA:3004.

MUS:3006 Popular Music in the United States 3 s.h.
Popular music and culture in the United States from early 20th century to present; basic musical style and performance analysis, social meaning and use.

MUS:3154 Introduction to Afro-Cuban Drumming 1 s.h.
Drumming, dance, songs from folkloric and ceremonial Afro-Cuban forms; emphasis on drumming; may include participation in Afro-Cuban drum and dance ensemble. Same as DPA:3154.

MUS:3800 Reed Class 1 s.h.
Development of reed-making skills; focus on steps to complete reeds from tube cane to a finished reed; different ways of reed making; practical, pedagogical, and historical approaches; producing various reed styles. Requirements: music major.

MUS:3850 Introduction to Laban Movement Studies 2-3 s.h.
Introduction to Bartenieff Fundamentals (BF) and Laban Movement Analysis (LMA) as methods of organizing and integrating movement to support artistic goals and expanding expressive range; BF teaches body awareness, breath support, developmental patterns, ergonomically-efficient alignment, balancing of muscular strength and stretch, and coordination; LMA teaches vocabulary of expressive movement and nonverbal communication, including effort (use of energy/dynamics for expression, stamina, stress relief) and shape (how posture and gesture communicate); quality of movement that supports individual goals in artistic expression, sound production, and wellness. Same as THTR:3850, DANC:3850, DPA:3850.

MUS:3872 The Music and History of the Symphony Orchestra 3 s.h.
History and great works of symphonic literature; major composers of orchestral music; institutional history of the symphony orchestra; development of critical listening skills to identify orchestral instruments and perceive structure and style of selected orchestral works; following musical scores to derive information about orchestration, style, and form. Recommendations: upper-level non-music major or undergraduate music major.
The Alexander Technique and "self-use"—how movement choices affect results achieved; improvement of physical skills and presence; principles in support of performing arts (e.g., speaking, singing, playing an instrument, dancing, acting); application to skills in daily life, addressing underpinnings of movement; physical participation (e.g., lying down, rolling, sitting, standing, locomotion). Same as DPA:3851, DAN:3851, THTR:3851.

Applied Music: Lower-Level Undergraduate Majors

Instruction consists of individual and/or class lessons, at the instructor’s option, for a minimum of one hour per week (students register for 2 s.h.), or one half-hour per week (students register for 1 s.h.). Music majors are required to attend weekly performance and pedagogy seminars in applied music.

Courses are offered on a fee-per-course basis, in addition to tuition, and may be repeated.

Guitar instruction is offered only at the lower level. Enrollment in MUS:2038 Lower Level Jazz Guitar is limited to three Bachelor of Arts students. Students may not enroll in the Bachelor of Music program with guitar as their major instrument.

MUS:2020 Lower Level Voice

Applied lessons and guided instruction in performance, technique, musicality, pedagogy (teaching); weekly lessons; weekly performance/pedagogy seminar conducted in a master class format; student participation as performers, critics, and practice teachers with instructor guidance.

MUS:2021 Lower Level Piano

Applied lessons and guided instruction in performance, technique, musicality, pedagogy (teaching); weekly lessons; weekly performance/pedagogy seminar conducted in a master class format; student participation as performers, critics, and practice teachers with instructor guidance. Requirements: piano major or approval of the area following a successful audition.

MUS:2022 Lower Level Organ

Applied lessons and guided instruction in performance, technique, musicality, pedagogy (teaching); weekly lessons; weekly performance/pedagogy seminar conducted in a master class format; student participation as performers, critics, and practice teachers with instructor guidance.

MUS:2023 Lower Level Violin

Applied lessons and guided instruction in performance, technique, musicality, pedagogy (teaching); weekly lessons; weekly performance/pedagogy seminar conducted in a master class format; student participation as performers, critics, and practice teachers with instructor guidance.

MUS:2024 Lower Level Viola

Applied lessons and guided instruction in performance, technique, musicality, pedagogy (teaching); weekly lessons; weekly performance/pedagogy seminar conducted in a master class format; student participation as performers, critics, and practice teachers with instructor guidance.

MUS:2025 Lower Level Cello

Applied lessons and guided instruction in performance, technique, musicality, pedagogy (teaching); weekly lessons; weekly performance/pedagogy seminar conducted in a master class format; student participation as performers, critics, and practice teachers with instructor guidance.

MUS:2026 Lower Level String Bass

Applied lessons and guided instruction in performance, technique, musicality, pedagogy (teaching); weekly lessons; weekly performance/pedagogy seminar conducted in a master class format; student participation as performers, critics, and practice teachers with instructor guidance.

MUS:2027 Lower Level Flute

Applied lessons and guided instruction in performance, technique, musicality, pedagogy (teaching); weekly lessons; weekly performance/pedagogy seminar conducted in a master class format; student participation as performers, critics, and practice teachers with instructor guidance.

MUS:2028 Lower Level Oboe

Applied lessons and guided instruction in performance, technique, musicality, pedagogy (teaching); weekly lessons; weekly performance/pedagogy seminar conducted in a master class format; student participation as performers, critics, and practice teachers with instructor guidance.

MUS:2029 Lower Level Clarinet

Applied lessons and guided instruction in performance, technique, musicality, pedagogy (teaching); weekly lessons; weekly performance/pedagogy seminar conducted in a master class format; student participation as performers, critics, and practice teachers with instructor guidance.

MUS:2030 Lower Level Bassoon

Applied lessons and guided instruction in performance, technique, musicality, pedagogy (teaching); weekly lessons; weekly performance/pedagogy seminar conducted in a master class format; student participation as performers, critics, and practice teachers with instructor guidance.

MUS:2031 Lower Level Saxophone

Applied lessons and guided instruction in performance, technique, musicality, pedagogy (teaching); weekly lessons; weekly performance/pedagogy seminar conducted in a master class format; student participation as performers, critics, and practice teachers with instructor guidance.

MUS:2032 Lower Level Horn

Applied lessons and guided instruction in performance, technique, musicality, pedagogy (teaching); weekly lessons; weekly performance/pedagogy seminar conducted in a master class format; student participation as performers, critics, and practice teachers with instructor guidance.
MUS:2033 Lower Level Trumpet  
Applied lessons and guided instruction in performance, technique, musicality, pedagogy (teaching); weekly lessons; weekly performance/pedagogy seminar conducted in a master class format; student participation as performers, critics, and practice teachers with instructor guidance.

MUS:2034 Lower Level Trombone  
Applied lessons and guided instruction in performance, technique, musicality, pedagogy (teaching); weekly lessons; weekly performance/pedagogy seminar conducted in a master class format; student participation as performers, critics, and practice teachers with instructor guidance.

MUS:2035 Lower Level Euphonium  
Applied lessons and guided instruction in performance, technique, musicality, pedagogy (teaching); weekly lessons; weekly performance/pedagogy seminar conducted in a master class format; student participation as performers, critics, and practice teachers with instructor guidance.

MUS:2036 Lower Level Tuba  
Applied lessons and guided instruction in performance, technique, musicality, pedagogy (teaching); weekly lessons; weekly performance/pedagogy seminar conducted in a master class format; student participation as performers, critics, and practice teachers with instructor guidance.

MUS:2037 Lower Level Percussion  
Applied lessons and guided instruction in performance, technique, musicality, pedagogy (teaching); weekly lessons; weekly performance/pedagogy seminar conducted in a master class format; student participation as performers, critics, and practice teachers with instructor guidance.

MUS:2038 Lower Level Jazz Guitar  
1 s.h.  
Requirements: audition required.

Applied Music: Upper-Level Undergraduate Majors

Instruction consists of individual and/or class lessons, at the instructor's option, for a minimum of one hour per week (students register for 2 s.h.), or one half-hour per week (students register for 1 s.h.). Music majors are required to attend weekly performance and pedagogy seminars in applied music.

Courses are offered on a fee-per-course basis, in addition to tuition, and may be repeated.

Guitar instruction is offered only at the lower level. Students may not enroll in the Bachelor of Music program with guitar as their major instrument.

MUS:3020 Upper Level Voice  
Applied lessons and guided instruction in performance, technique, musicality, pedagogy (teaching); weekly lessons; weekly performance/pedagogy seminar conducted in a master class format; student participation as performers, critics, and practice teachers with instructor guidance.

MUS:3021 Upper Level Piano  
Applied lessons and guided instruction in performance, technique, musicality, pedagogy (teaching); weekly lessons; weekly performance/pedagogy seminar conducted in a master class format; student participation as performers, critics, and practice teachers with instructor guidance. Requirements: piano major or approval following a successful audition.

MUS:3022 Upper Level Organ  
Applied lessons and guided instruction in performance, technique, musicality, pedagogy (teaching); weekly lessons; weekly performance/pedagogy seminar conducted in a master class format; student participation as performers, critics, and practice teachers with instructor guidance.

MUS:3023 Upper Level Violin  
Applied lessons and guided instruction in performance, technique, musicality, pedagogy (teaching); weekly lessons; weekly performance/pedagogy seminar conducted in a master class format; student participation as performers, critics, and practice teachers with instructor guidance.

MUS:3024 Upper Level Viola  
Applied lessons and guided instruction in performance, technique, musicality, pedagogy (teaching); weekly lessons; weekly performance/pedagogy seminar conducted in a master class format; student participation as performers, critics, and practice teachers with instructor guidance.

MUS:3025 Upper Level Cello  
Applied lessons and guided instruction in performance, technique, musicality, pedagogy (teaching); weekly lessons; weekly performance/pedagogy seminar conducted in a master class format; student participation as performers, critics, and practice teachers with instructor guidance.

MUS:3026 Upper Level String Bass  
Applied lessons and guided instruction in performance, technique, musicality, pedagogy (teaching); weekly lessons; weekly performance/pedagogy seminar conducted in a master class format; student participation as performers, critics, and practice teachers with instructor guidance.

MUS:3027 Upper Level Flute  
Applied lessons and guided instruction in performance, technique, musicality, pedagogy (teaching); weekly lessons; weekly performance/pedagogy seminar conducted in a master class format; student participation as performers, critics, and practice teachers with instructor guidance.

MUS:3028 Upper Level Oboe  
Applied lessons and guided instruction in performance, technique, musicality, pedagogy (teaching); weekly lessons; weekly performance/pedagogy seminar conducted in a master class format; student participation as performers, critics, and practice teachers with instructor guidance.
MUS:3029 Upper Level Clarinet  
Applied lessons and guided instruction in performance, technique, musicality, pedagogy (teaching); weekly lessons; weekly performance/pedagogy seminar conducted in a master class format; student participation as performers, critics, and practice teachers with instructor guidance.

MUS:3030 Upper Level Bassoon  
Applied lessons and guided instruction in performance, technique, musicality, pedagogy (teaching); weekly lessons; weekly performance/pedagogy seminar conducted in a master class format; student participation as performers, critics, and practice teachers with instructor guidance.

MUS:3031 Upper Level Saxophone  
Applied lessons and guided instruction in performance, technique, musicality, pedagogy (teaching); weekly lessons; weekly performance/pedagogy seminar conducted in a master class format; student participation as performers, critics, and practice teachers with instructor guidance.

MUS:3032 Upper Level Horn  
Applied lessons and guided instruction in performance, technique, musicality, pedagogy (teaching); weekly lessons; weekly performance/pedagogy seminar conducted in a master class format; student participation as performers, critics, and practice teachers with instructor guidance.

MUS:3033 Upper Level Trumpet  
Applied lessons and guided instruction in performance, technique, musicality, pedagogy (teaching); weekly lessons; weekly performance/pedagogy seminar conducted in a master class format; student participation as performers, critics, and practice teachers with instructor guidance.

MUS:3034 Upper Level Trombone  
Applied lessons and guided instruction in performance, technique, musicality, pedagogy (teaching); weekly lessons; weekly performance/pedagogy seminar conducted in a master class format; student participation as performers, critics, and practice teachers with instructor guidance.

MUS:3035 Upper Level Euphonium  
Applied lessons and guided instruction in performance, technique, musicality, pedagogy (teaching); weekly lessons; weekly performance/pedagogy seminar conducted in a master class format; student participation as performers, critics, and practice teachers with instructor guidance.

MUS:3036 Upper Level Tuba  
Applied lessons and guided instruction in performance, technique, musicality, pedagogy (teaching); weekly lessons; weekly performance/pedagogy seminar conducted in a master class format; student participation as performers, critics, and practice teachers with instructor guidance.

MUS:3037 Upper Level Percussion  
Applied lessons and guided instruction in performance, technique, musicality, pedagogy (teaching); weekly lessons; weekly performance/pedagogy seminar conducted in a master class format; student participation as performers, critics, and practice teachers with instructor guidance.

Applied Music: Graduate Majors  
Instruction consists of individual and/or class lessons, at the instructor’s option, for a minimum of one hour per week (students register for 2 s.h.), or one half-hour per week (students register for 1 s.h.). Courses are offered on a fee-per-course basis, in addition to tuition, and may be repeated.

MUS:6020 Major Voice  
arr.

MUS:6021 Major Piano  
arr.

MUS:6022 Major Organ  
arr.

MUS:6023 Major Violin  
arr.

MUS:6024 Major Viola  
arr.

MUS:6025 Major Cello  
arr.

MUS:6026 Major String Bass  
arr.

MUS:6027 Major Flute  
arr.

MUS:6028 Major Oboe  
arr.

MUS:6029 Major Clarinet  
arr.

MUS:6030 Major Bassoon  
arr.

MUS:6031 Major Saxophone  
arr.

MUS:6032 Major Horn  
arr.

MUS:6033 Major Trumpet  
arr.

MUS:6035 Major Euphonium  
arr.

MUS:6034 Major Trombone  
arr.

MUS:6036 Major Tuba  
arr.

MUS:6037 Major Percussion  
arr.

Applied Music: Secondary Instruction for Majors  
Instruction consists of one half-hour lesson per week. Courses are offered on a fee-per-course basis, in addition to tuition, and may be repeated.

MUS:1120 Undergraduate Secondary Performance—Voice  
1 s.h.

Requirements: music major.
MUS:1121 Lower Level Secondary Performance—Piano
1 s.h.
Requirements: music major.

MUS:1122 Undergraduate Secondary Performance—Organ
1 s.h.
Seminar and lessons arranged. Requirements: music major.

MUS:1123 Secondary Performance—Violin
1 s.h.

MUS:1124 Secondary Performance—Viola
1 s.h.

MUS:1125 Secondary Performance—Cello
1 s.h.

MUS:1126 Secondary Performance—String Bass
1 s.h.

MUS:1127 Secondary Performance—Flute
1 s.h.

MUS:1128 Secondary Performance—Oboe
1 s.h.

MUS:1129 Secondary Performance—Clarinet
1 s.h.

MUS:1130 Secondary Performance—Bassoon
1 s.h.

MUS:1131 Secondary Performance—Saxophone
1 s.h.

MUS:1132 Secondary Performance—Horn
1 s.h.

MUS:1133 Secondary Performance—Trumpet
1 s.h.

MUS:1135 Secondary Performance—Euphonium
1 s.h.

MUS:1134 Secondary Performance—Trombone
1 s.h.

MUS:1136 Secondary Performance—Tuba
1 s.h.

MUS:1137 Secondary Performance—Percussion
1 s.h.

MUS:1139 Secondary Performance—Composition
1 s.h.

MUS:5020 Graduate Secondary Performance—Voice
1 s.h.
Study of an instrument (or voice) in area other than major performance area; opportunity to continue performance skill development on secondary instruments.

MUS:5021 Graduate Secondary Performance—Piano
1 s.h.

Study of an instrument (or voice) other than major performance area; opportunity to continue development of performance skills on secondary instruments. Requirements: graduate standing in music.

Choral Literature

MUS:6561 Seminar: Choral Literature and Analysis I
1-3 s.h.

MUS:6562 Seminar: Choral Literature and Analysis II
1-3 s.h.

MUS:6563 Seminar: Choral Literature and Analysis III
1-3 s.h.

MUS:6564 Seminar: Choral Literature and Analysis IV
1-3 s.h.

Composition

MUS:2220 Composition
arr.

MUS:3220 Instrumentation
2 s.h.
Basic techniques of writing for orchestral instruments; ranges, transpositions, sound production, notating scores and parts. Prerequisites: MUS:2204.

MUS:3230 Composition Seminar
0-1 s.h.

MUS:4220 Orchestration
2 s.h.
Instrumental capabilities and combinations in solo, chamber, and large ensemble literature; application in composition. Prerequisites: MUS:3220.

MUS:4250 Composition: Electronic Media I
3 s.h.
Composition using analog, digital technology. Offered fall semesters.

MUS:4251 Composition: Electronic Media II
3 s.h.
Advanced interactive techniques in composition in association with analog, digital technologies. Offered spring semesters.

MUS:5220 Advanced Composition
arr.
Corequisites: MUS:3230.

Conducting

Also see MUS:3635 Instrumental Conducting, MUS:3640 Choral Methods, and MUS:3645 Choral Conducting and Literature, under "Music Education" below.

MUS:3625 Techniques of Conducting
2 s.h.
Basic elements, score analysis.
MUS:6579 Orchestral Conducting Lab 1 s.h.  
Conducting practicum experience with a laboratory ensemble; participants also serve as performers to facilitate conducting experience of major orchestral repertoire through guided and critiqued gestural studies.

MUS:6580 Advanced Orchestral Conducting 2 s.h.

MUS:6581 Advanced Choral Conducting I 1-3 s.h.  

MUS:6582 Advanced Choral Conducting II 1-3 s.h.  

MUS:6583 Advanced Choral Conducting III 1-3 s.h.  

MUS:6584 Advanced Choral Conducting IV 1-3 s.h.  

MUS:6585 Score Reading 1 s.h.

MUS:6586 Orchestral Literature 2 s.h.

MUS:6590 Seminar in Advanced Band Literature and Band History arr.  
Band literature; history.

Ensembles
Enrollment requires consent of instructor. Courses may be repeated.

MUS:1160 University Band 1 s.h.  
Participation in University Band.

MUS:1165 Hawkeye Marching Band 1 s.h.  
Offered fall semesters.

MUS:1166 Large Pep Band 1 s.h.  
Performing ensemble for basketball games and wrestling meets. Requirements: membership by audition.

MUS:1176 Women's Chorale 1 s.h.

MUS:1180 All-University String Orchestra 1 s.h.  
Repertoire, rehearsal pacing, and performance expectation geared to general students. Open to all UI students with no audition.

MUS:3151 Percussion Chamber Ensemble 1 s.h.  
Advanced percussion ensemble experience to complement work in larger format percussion ensemble; preparation and performance of most important repertoire for percussion ensemble; new works brought to light in a small chamber group setting. Requirements: upper-level undergraduate or graduate percussion major.

MUS:3160 Symphony Band/Concert Band 1 s.h.  
Participation in Symphony Band or Concert Band. Requirements: (for concert band) membership by audition.

MUS:3163 Steel Band 1 s.h.  
Musical and cultural introduction to steel band music of Trinidad and other Caribbean musical styles, including calypso, soca, ska, and reggae.

MUS:3170 Kantorei 1 s.h.

MUS:3172 Camerata Singers 1 s.h.

MUS:3174 University Choir 1 s.h.

MUS:3180 Orchestra 1 s.h.

MUS:3182 Chamber Orchestra 1 s.h.  
Requirements: upper-level undergraduate standing.

MUS:3190 Center for New Music Ensemble 0-1 s.h.  
Participation in the Center for New Music; focus on contemporary composition and performance, 20th- and 21st-century repertoire and styles.

MUS:3480 Piano Accompaniment arr.  
Collaborative arts techniques, methods, and history. Requirements: keyboard major.

MUS:3481 Piano Chamber Music arr.  
Requirements: music major.

MUS:3482 String Chamber Music arr.

MUS:3485 Wind Chamber Music arr.  
Preparation, performance of representative literature; sections for woodwinds, brass, flute, clarinet, horn, saxophone, double reed, trumpet, trombone, brass choir, tuba/euphonium ensemble.

Jazz Studies

MUS:1009 Jazz Cultures in America and Abroad 3 s.h.  
How to listen to jazz and recognize a variety of processes that are taking place in performances and recordings; historical, social, and political issues, including race and gender; the unique blend of jazz of a particular region; attendance at live performances, meet and interview musicians, critics, and educators. GE: Literary, Visual, and Performing Arts; Values, Society, and Diversity.

MUS:1711 Jazz Rhythms and Interpretation 1 s.h.  
Methods for sight-reading and interpreting jazz notation. Requirements: music major or audition.
MUS:1720 History of Jazz 3 s.h.
Major 20th-century styles, artists, seminal works, and recordings; developments between 1917 and 1972. GE: Literary, Visual, and Performing Arts; Values, Society, and Diversity.

MUS:2014 Giants of Jazz: Miles, Trane, and Duke 3 s.h.
Miles Davis, John Coltrane and Duke Ellington as figureheads of the Jazz music style; how they changed the trajectory of modern music along with sidemen (B. Strayhorn and H. Hancock); Ellington's resolute defiance of stereotypical views of African Americans; Miles' brazen protests against civil injustices; how these icons are much more than mere musicians; cultural impact of landmark albums including "Kind of Blue," "A Love Supreme," and "The Birth of the Cool"; focus on their life, music and sociopolitical impact. Same as AFAM:2014.

MUS:3001 Introduction to Improvisation 3 s.h.
Introduction to the practice of improvisation through performance of repertoire and the development of practicing strategies; exercises in melody, harmony, rhythm and transcription that together form an integrated approach to developing improvisations. Prerequisites: MUS:1201. Requirements: audition.

MUS:3710 Intermediate Jazz Improvisation 2 s.h.
Improvisation in the jazz repertoire of standards, bebop, and major composers such as Thelonious Monk, Wayne Shorter; memorization and use of melodies, knowledge of chords to the thirteenth, chromatic harmony, development of rhythmic motifs/alteration, strategies for multiple chorus improvisations; separate section for drummers. Prerequisites: MUS:3001 and MUS:3750. Requirements: audition.

MUS:3730 Jazz Band 1 s.h.
Jazz performance ensembles, rehearsals, and concerts on and off campus.

MUS:3740 Small Jazz Ensembles 1 s.h.
Development of repertoire from standard jazz literature, arrangements and compositions by ensemble members; rehearsals (three hours per week) and performances on and off campus. Requirements: audition.

MUS:3750 Jazz Theory 3 s.h.
Development of skills for interpreting melodies and chord symbols in mainstream practice of jazz harmony at the piano; application of scales, development of voice leading for jazz harmonies, reharmonization, and analysis. Requirements: MUS:1201 or audition.

MUS:3760 Jazz Band Techniques 1 s.h.
Development of skills for sight-reading and interpreting notated jazz. Prerequisites: MUS:1711.

MUS:4710 Advanced Jazz Improvisation 2 s.h.
Builds on the skills learned in MUS:3710; contemporary techniques and styles used by current practitioners of improvisation; free improvisation, bitonal harmonies, through-composed forms, collective improvisation, nonwestern approaches. Prerequisites: MUS:3710 and MUS:3750. Requirements: audition.

MUS:4750 Transcription 2 s.h.
Individual projects to transcribe improvisations, small ensemble arrangements, large ensemble arrangements, or nonwestern techniques; use of computer notation programs and midi-realizations. Prerequisites: MUS:3710 and MUS:3750.

MUS:4760 Jazz Composition and Arranging 2 s.h.
Experience writing and arranging original jazz material for small and large ensembles, and presenting scores in computer notation; individual lessons. Prerequisites: MUS:3750.

Music Education
The College of Education offers additional music education courses; see Teaching and Learning (p. 793) in the Catalog for listings and descriptions. Some courses have two numbers, one for the School of Music and the other for the College of Education. Students preparing for music teacher licensure should register under the education number.

Also see MUS:3760 Jazz Band Techniques under "Jazz Studies."

MUS:3600 Undergraduate Music Education Workshop 1 s.h.
Topics vary; for inservice music teachers.

MUS:3601 Undergraduate Music Education Workshop II 1 s.h.
Topics vary; for inservice music teachers.

MUS:3605 Instrumental Techniques 2 s.h.
Same as EDTL:3605.

MUS:3630 Band Methods and Materials 3 s.h.
High school and elementary school music methods required for teaching certificate; for instrumental music education majors. Same as EDTL:3630.

MUS:3635 Instrumental Conducting 3 s.h.
Advanced skills for instrumental conducting, score analysis, rehearsal techniques, literature selection. Prerequisites: MUS:3625. Same as EDTL:3635.

MUS:3640 Choral Methods 3 s.h.
Organization, implementation of effective choral music programs for all ages. Same as EDTL:3640.

MUS:3645 Choral Conducting and Literature 3 s.h.
Advanced skills appropriate to choral conducting, analysis, literature selection studied and implemented to develop a secure approach to choral art; students preparing to teach in the elementary or secondary schools must register under EDTL:3645. Prerequisites: EDTL:3640 and MUS:3625. Same as EDTL:3645.

MUS:3659 Class Strings 1 s.h.
String playing and basic principles of string pedagogy; for band and string students. Offered fall semesters for band; offered fall and spring semesters for string. Requirements: teacher education student in music.
MUS:3660 String Methods and Materials 3 s.h.
Methods for teaching bands in schools. Offered fall semesters. Same as EDTL:3660.

MUS:3664 Introduction to Band Instruments 2 s.h.
Survey of wind and percussion instruments; for music education string majors.

MUS:3665 Arranging for Band 2 s.h.
Scoring and arranging techniques for concert, marching bands. Offered spring semesters.

MUS:3666 Marching Band Techniques 1 s.h.
Administration, show design. Offered fall semesters.

MUS:5600 Graduate Music Education Workshop 1 s.h.
For inservice music teachers; topics vary. Same as EDTL:5600.

MUS:5601 Graduate Music Education Workshop II 1 s.h.
Varied topics; for inservice music teachers. Same as EDTL:5601.

Music History
The following courses deal with periods and special topics in music history. They are offered about every two years. All of them have as prerequisites MUS:5301 Advanced History and Literature of Music I and MUS:5302 Advanced History and Literature of Music II, or the equivalents, or consent of instructor.

MUS:6326 Renaissance Music Notations 3 s.h.
MUS:6350 Music 1945-Present 3 s.h.
Several courses in music history are appropriate for non-music majors. Other music history courses appropriate for nonmajors are listed under “General Music Courses” above.

MUS:2301 History of Music I 3 s.h.

MUS:2302 History of Music II 3 s.h.

MUS:3486 Bach Performance Seminar 1 s.h.
Performance practice and interpretation of J.S. Bach's music and late German Baroque period using modern instruments; differences between Baroque performance on period and modern instruments; concept of historically informed practice (HIP) and its application in performing Bach's masterpieces; master-class format culminating in a public recital of repertoire studied during semester. Prerequisites: MUS:1125 or MUS:1126 or MUS:1127 or MUS:1128.

MUS:5300 Introduction to Graduate Study in Music 2 s.h.
Music library; reference materials; bibliography; research problems, methods; writing research papers. Offered fall and spring semesters.

MUS:5301 Advanced History and Literature of Music I 3 s.h.
History and style of Medieval, Renaissance, and Baroque music (750-1750). Offered fall semesters.

MUS:5302 Advanced History and Literature of Music II 3 s.h.
History and style of Classical, 19th-, 20th-, and 21st-century music (1750-present). Offered spring semesters.

MUS:5310 Introduction to Musicology 1-3 s.h.
Methods, materials of research in historical musicology; field of musicology. Requirements: for 1 s.h. — MUS:5300; for 3 s.h. — concurrent enrollment in MUS:5300.

MUS:6300 Musicology Colloquium 0 s.h.

MUS:6310 Seminar in Musicology 3 s.h.
One or more selected areas of music history.

MUS:6314 Topics in Ethnomusicology 3 s.h.
Perspectives on analysis and representation of selected musical cultures from around the world.

MUS:6315 Foundations of Ethnomusicology 3 s.h.
Ethnomusicology in relation to domains of musical, humanistic, social science scholarship on expressive culture and artistic processes. Requirements: senior standing.

MUS:6325 Renaissance Music 3 s.h.
Prerequisites: MUS:5301.

MUS:6326 Renaissance Music Notations 3 s.h.
Renaissance white notation, keyboard tablatures, musical paleography; transcription of early vocal, instrumental notations; editorial problems. Prerequisites: MUS:5301.

MUS:6330 Seventeenth-Century Music 3 s.h.
Prerequisites: MUS:5301.

MUS:6335 Eighteenth-Century Music 3 s.h.
Prerequisites: MUS:5302.

MUS:6340 Nineteenth-Century Music 3 s.h.
Prerequisites: MUS:5302.

MUS:6345 Music 1900-1945 3 s.h.
Prerequisites: MUS:5302.

MUS:6350 Music 1945-Present 3 s.h.
Prerequisites: MUS:5302.

MUS:6355 American Music 3 s.h.
Prerequisites: MUS:5302.
MUS:6375 Music Editing 3 s.h.
Principles and methods of music editing; use of primary source materials, establishment of music text, preparation of critical apparatus; project to prepare a critical edition of music for publication. Prerequisites: MUS:5300.

MUS:7380 Readings in Music History arr.

Music and Technology
Also see MUS:4250 Composition: Electronic Media I and MUS:4251 Composition: Electronic Media II listed under “Composition” above.

MUS:3410 Fundamentals of Piano Technology 1 s.h.
Offered spring semesters. Requirements: music major.

MUS:3780 Audio Recording I 3 s.h.
Introduction to audio fundamentals, including basic acoustics and audio systems; survey of important equipment and practices, use of microphones and mixers; introduction to AVID's Pro Tools digital audio workstation; students with no background in audio production brought up to an operational proficiency level with basic recording systems; related technical topics develop an understanding of common equipment and conventional application in modern recording studio setting; recording techniques used in MUS:3781.

MUS:3781 Audio Recording II 3 s.h.
Survey of Pro Tools; fundamental digital audio concepts applied to hands-on music recording and postproduction projects on digital audio workstations; Pro Tools 101 content with supplementary readings and recording sessions; operational knowledge of Pro Tools software and hardware configurations; basic processes of software-based digital audio recording through recording sessions and sample projects; development of functional understanding of postproduction concepts. Prerequisites: MUS:3780.

Music Therapy

MUS:1687 Orientation to Music Therapy 2 s.h.
Theory, practice; typical clients and places of employment in music therapy.

MUS:2671 Music Foundations in Therapy I 2 s.h.
Skill development on social instruments such as guitar, autoharp, piano; percussion, song-leading skills, and repertoire development for use in clinical music therapy sessions. Prerequisites: MUS:1687. Requirements: music therapy major.

MUS:2672 Music Foundations in Therapy II 1-2 s.h.
Advanced skill development on guitar for use in clinical music therapy sessions; percussion techniques, and related skills used in therapeutic settings. Prerequisites: MUS:2671. Requirements: music therapy major.

MUS:3675 Music Therapy Practicum 1-2 s.h.
Supervised clinical training with adult clients and children in variety of health care and educational settings. Prerequisites: MUS:1687. Requirements: music therapy major.

MUS:3676 Percussion Experience for Teachers and Therapists
Hands-on learning experiences in percussion techniques used by music teachers, special education teachers, music therapists, or social workers; basics of hand drumming centered on West African djembe and Trinidadian steel band; skills necessary for interacting with students and clients in educational and clinical settings.

MUS:3680 Music in Special Education 2-3 s.h.
Music methods and materials appropriate for students with disabilities in special educational settings; overview of individualized educational planning for students with disabilities. Requirements: music therapy or music education major.

MUS:3690 Music Therapy with Adults 3 s.h.
Techniques, procedures for work with adult clients with disabilities. Prerequisites: MUS:1687. Requirements: music therapy major.

MUS:4630 Psychology of Music 2-3 s.h.
Cognition of music, affective response, aesthetic response, musical ability. Same as EDTL:4630.

MUS:4670 Internship in Music Therapy arr.
Clinical training under direction of board certified music therapist. Requirements: core music therapy requirements.

MUS:4675 Senior Project in Music Therapy 1 s.h.

MUS:4685 Music Therapy with Children 3 s.h.

MUS:6670 Graduate Music Therapy Practicum arr.
Seminar, clinical field work. Requirements: undergraduate music therapy practicum.

MUS:6675 Research in Music Therapy—Graduate 1 s.h.
Research methodology; foundation for subsequent semesters of research on capstone project in music therapy.

MUS:6680 College Teaching and Clinic Supervision in Music Therapy 1-2 s.h.
Principles of college teaching, curriculum development, clinical supervision in music therapy.

MUS:6685 Theory and Research in Music Therapy 1 s.h.
Historical background, current principles and practices associated with theories of music therapy, common uses with specific populations; research methodologies associated with testing; theories and clinical practices, assigned research publications; information covered over several semesters with each semester covering three to four common theories; seminar includes strengths and limitations of each theory and its place within clinical practice. Requirements: undergraduate core courses in music therapy.
<table>
<thead>
<tr>
<th>Course Code</th>
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<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUS:6690</td>
<td>Special Studies in Music Therapy</td>
<td>1-3</td>
<td>Seminar. Requirements: music therapy or music education graduate standing.</td>
</tr>
<tr>
<td>MUS:3140</td>
<td>Audition Repertoire</td>
<td>1</td>
<td>Practicum on passages frequently requested at professional auditions.</td>
</tr>
<tr>
<td>MUS:3483</td>
<td>Baroque Seminar for Strings</td>
<td>1</td>
<td>Introduction to Baroque performance practices and techniques on period string instruments; ensembles. Requirements: enrollment in upper-level or graduate-level applied studies.</td>
</tr>
<tr>
<td>MUS:5101</td>
<td>Advanced Woodwind Pedagogy and Literature I</td>
<td>2</td>
<td>Saxophone and clarinet solo and study literature; integration of pedagogical topics.</td>
</tr>
<tr>
<td>MUS:5102</td>
<td>Advanced Woodwind Pedagogy and Literature II</td>
<td>3</td>
<td>Oboe, bassoon, and flute solo and study literature; integration of pedagogical topics.</td>
</tr>
<tr>
<td>MUS:5111</td>
<td>Advanced Brass Pedagogy and Literature I</td>
<td>2</td>
<td>Tuba, euphonium, and trombone literature; pedagogical topics.</td>
</tr>
<tr>
<td>MUS:5112</td>
<td>Advanced Brass Pedagogy and Literature II</td>
<td>2</td>
<td>Trumpet and horn literature; pedagogical topics.</td>
</tr>
<tr>
<td>MUS:5115</td>
<td>Advanced Brass Ensemble Literature</td>
<td>2</td>
<td>Brass chamber music literature, including mixed and like-instrument ensembles.</td>
</tr>
<tr>
<td>MUS:5121</td>
<td>Advanced String Methods and Literature I</td>
<td>2</td>
<td>Violin, viola, cello, and double bass solo and chamber music repertoire, pedagogical methods.</td>
</tr>
<tr>
<td>MUS:5122</td>
<td>Advanced String Methods and Literature II</td>
<td>2</td>
<td>Violin, viola, cello, and double bass solo and chamber music repertoire, pedagogical methods.</td>
</tr>
<tr>
<td>MUS:5130</td>
<td>Advanced Percussion Pedagogy and Literature</td>
<td>2</td>
<td>Percussion literature, styles, notation, performance techniques, composition; survey.</td>
</tr>
<tr>
<td>MUS:6150</td>
<td>Seminar in Performance and Pedagogy Research I</td>
<td>1</td>
<td>Research in the student's area; selection of a research topic. Offered spring semesters.</td>
</tr>
</tbody>
</table>

**Organ and Sacred Music**

<table>
<thead>
<tr>
<th>Course Code</th>
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<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUS:4450</td>
<td>Organ Literature Survey</td>
<td>2</td>
<td>Fifteenth century to present. Requirements: advanced undergraduate or graduate standing.</td>
</tr>
<tr>
<td>MUS:4452</td>
<td>Liturgics</td>
<td>2</td>
<td>History of liturgies and survey of liturgical music from Judaism to present.</td>
</tr>
<tr>
<td>MUS:4454</td>
<td>Service Playing and Improvisation</td>
<td>2</td>
<td>Hymn playing, accompanying, basic improvisation techniques. Requirements: organ major.</td>
</tr>
<tr>
<td>MUS:5450</td>
<td>History of Organ Building and Design</td>
<td>2-3</td>
<td>Development of organ design from Middle Ages to present; basic concepts of construction, maintenance.</td>
</tr>
<tr>
<td>MUS:5452</td>
<td>Organ Pedagogy</td>
<td>2</td>
<td>History, theory, practice from Renaissance to present; methods, literature appropriate for various levels.</td>
</tr>
<tr>
<td>MUS:5465</td>
<td>Hymnology</td>
<td>1-2</td>
<td>Survey of historic hymnody: ancient odes, Latin hymns, Reformation hymns and psalms; current developments in hymnody and hymnals; may be special topic study.</td>
</tr>
<tr>
<td>MUS:5475</td>
<td>Organ Literature Special Topics</td>
<td>2</td>
<td>Specialized study in selected areas of organ literature.</td>
</tr>
</tbody>
</table>

**Piano**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUS:1211</td>
<td>Group Instruction in Piano I</td>
<td>1</td>
<td>Beginning instruction for music majors whose principal performing medium is voice or an orchestral or band instrument; skill development in sight reading, technique, harmonization, transposition, improvisation, simple literature. Corequisites: MUS:1201. Requirements: music major.</td>
</tr>
<tr>
<td>MUS:1212</td>
<td>Group Instruction in Piano II</td>
<td>1</td>
<td>Elementary to early intermediate instruction for music majors whose principal performing medium is voice or an orchestral or band instrument; continued skill development begun in MUS:1211; introduction of easy solo and ensemble literature. Corequisites: MUS:1202. Requirements: MUS:1211 or successful completion of proficiency examination.</td>
</tr>
<tr>
<td>MUS:2213</td>
<td>Group Instruction in Piano III</td>
<td>1</td>
<td>Varies by semester: skills for the music therapy profession, sight-reading, harmonization, transposition, reading from a fake book, and improvisation (fall); skills for the music education profession, sight-reading, harmonization, transposition, score, and hymn reading (spring). Requirements: music therapy, music education, or piano major.</td>
</tr>
<tr>
<td>MUS:3400</td>
<td>Methods of Teaching Piano</td>
<td>2</td>
<td>Methods, materials, and teaching techniques for preschool students, precollege students, and adult learners. Requirements: keyboard major.</td>
</tr>
</tbody>
</table>
MUS:5400 Piano Pedagogy I 2 s.h.
In-depth study of techniques and materials needed to teach intermediate and advanced piano students; judging competitions; conducting master classes; writing curriculum vitaeas and cover letters in preparation for academic job searches.

MUS:5401 Piano Pedagogy II 2 s.h.
History of the piano and its technique and pedagogy; national schools of piano playing; relationship of technological changes in piano construction to piano technique, pedagogy, and composition; major methods and treatises, historical recordings and video clips; research leading to understanding of students' individual piano lineage.

MUS:5410 Piano Literature I 2 s.h.
Baroque era to Mozart or Chopin through 1900.

MUS:5411 Piano Literature II 2 s.h.
Beethoven through Schumann or 20th century.

MUS:7400 Special Studies Piano Literature arr.
Individual research in special aspects of piano literature; primarily for D.M.A. students.

MUS:7401 Special Studies in Piano Accompaniment and Chamber Music arr.
Advanced collaborative arts practicum. Prerequisites: MUS:3480.

Recital and Thesis
MUS:3990 Special Studies arr.
MUS:4900 Senior Recital 1 s.h.
MUS:4910 Bachelor's Thesis 0-1 s.h.
MUS:4990 Senior Recital 1-4 s.h.
Requirements: honors standing.
MUS:6900 M.A. Recital arr.
MUS:6920 M.A. Performance Project arr.
MUS:6950 M.A. Thesis arr.
MUS:7900 D.M.A. Recital arr.

Theory
MUS:1200 Fundamentals of Music for Majors 3 s.h.
Rudiments of music—notation of pitch and rhythm, meter, scales, keys, intervals, triads; first of a five-semester sequence.

MUS:1201 Musicianship and Theory I 4 s.h.
Principles of harmony; emphasis on aural skills, theoretical concepts, notation. Offered fall semesters. Requirements: MUS:1200 or successful completion of music theory diagnostic exam, and concurrent enrollment in MUS:1211 or successful completion of piano proficiency exam.

MUS:1202 Musicianship and Theory II 4 s.h.
Continuation of MUS:1201. Offered spring semesters. Prerequisites: MUS:1201. Requirements: MUS:1212 or successful completion of piano proficiency exam.

MUS:2203 Musicianship and Theory III 4 s.h.
Continuation of MUS:1201 and MUS:1202; focus on common-practice repertory. Offered fall semesters. Prerequisites: MUS:1202.

MUS:2204 Musicianship and Theory IV 4 s.h.
Continuation of MUS:1201, MUS:1202, and MUS:2203; focus on late 19th- and early 20th-century repertories. Offered spring semesters. Prerequisites: MUS:2203.

MUS:2206 Form and Analysis 3 s.h.
Analysis of musical forms and procedures, including 18th- and 19th-century tonal repertoires. Prerequisites: MUS:2204. Requirements: undergraduate standing.

MUS:4200 Counterpoint Before 1600 3 s.h.
Two- and three-part counterpoint; Renaissance polyphony. Requirements: MUS:2203 for undergraduates; MUS:5200 for graduate students.

MUS:4201 Counterpoint After 1600 3 s.h.
Two- and three-part writing in the style of J.S. Bach; fugue. Requirements: MUS:2204 for undergraduates; MUS:5200 or exemption on Graduate Theory Advisory Exam for graduate students.

MUS:4210 Keyboard Harmony 1-2 s.h.
Melody harmonization and figured-bass realization at the keyboard. Requirements: MUS:2204 for undergraduates, MUS:5200 for graduate students; and keyboard proficiency.

MUS:5200 Basic Analytical Techniques 3 s.h.
Theories and strategies of analysis applied to tonal and post-tonal music.

MUS:5235 Tonal Analysis 3 s.h.
Requirements: MUS:5200 for graduate students.

MUS:5236 Post-Tonal Analysis 3 s.h.
Requirements: MUS:5200 for graduate students.

MUS:5240 Special Topics in Theory and Analysis 3 s.h.
Requirements: MUS:2204 for undergraduates; MUS:5200 or exemption on Graduate Theory Advisory Examination for graduate students.

MUS:6200 Music Theory Colloquium 0 s.h.
MUS:6210 History of Music Theory I 3 s.h.
Requirements: MUS:5200 or exemption on Graduate Theory Advisory Examination.

MUS:6211 History of Music Theory II 3 s.h.
Prerequisites: MUS:5200 and MUS:6210.

MUS:6215 Music Theory Pedagogy 3 s.h.
Methods and techniques of teaching college-level music theory, including harmony, sight singing, ear training. Prerequisites: MUS:5200. Corequisites: MUS:6200.

MUS:6250 Advanced Tonal Theory and Analysis 3 s.h.
Prerequisites: MUS:5235.

MUS:6251 Advanced Post-Tonal Theory and Analysis 3 s.h.
Prerequisites: MUS:5236.

MUS:7280 Readings in Music Theory 0-1 s.h.

Voice and Opera

MUS:1510 Diction for Singers I 2 s.h.
Italian and German pronunciation for singing; basics of international phonetic alphabet; no previous background required.

MUS:2510 Diction for Singers II 2 s.h.
French and English pronunciation for singing. Prerequisites: MUS:1510.

MUS:3500 Opera Workshop 2 s.h.
Opera performing techniques, including acting, aria interpretation, scene work. Requirements: vocal major or audition.

MUS:3501 Opera Theater Chorus 1 s.h.
Requirements: audition.

MUS:3502 Opera Production 2-4 s.h.
Preparation and rehearsals leading up to performance of full production; may include one-act opera, chamber opera, musical theater production, or full-length opera. Corequisites: MUS:3503. Requirements: audition.

MUS:3503 Vocal/Operatic Coaching 1 s.h.

MUS:3510 Interpretation of German Art Song 1 s.h.
Schubert, Schumann, Brahms, Wolf, Strauss, Mahler; appropriate diction, style. Prerequisites: MUS:1510 and MUS:2510.

MUS:3511 Interpretation of Non-German Art Song 1 s.h.
Art songs in English, French, Italian, Spanish; appropriate diction, style. Prerequisites: MUS:1510 and MUS:2510.

MUS:3520 Singing for Actors 2 s.h.
Skill development for healthy, effective singing in the musical theatre style; techniques of vocal production through breath management, resonance, articulation, flexibility; song interpretation and repertoire. Recommendations: for MUS:3520 — concurrent registration in MUS:1020. Same as THTR:3130.

MUS:3521 Acting for Singers and for Dancers 2 s.h.
Fundamentals of acting technique, with attention to demands on performers in opera, musical theater, and dance. Same as THTR:3521, DANC:3521.

MUS:5510 Graduate Diction 2 s.h.
Advanced pronunciation of singing languages. Requirements: grade of B or higher in undergraduate diction in French, German, and Italian.

MUS:5520 Principles of Voice Production 3 s.h.
Basic physical, physiological, pedagogical principles in understanding professional, nonprofessional, impaired voice production; vocal anatomy, voice classification; control of loudness, pitch, register, quality; efficient, inefficient use of voice; instrumentation for voice analysis, synthesis. Offered fall semesters of odd years. Same as CSD:5201.

MUS:5555 Voice Habilitation 2-3 s.h.
Application of methods of intervention in development, training, rehabilitation of vocal behavior; motor learning, efficacy of treatment strategies, factors affecting compliance with recommended therapy. Offered fall semesters. Prerequisites: CSD:4114 or CSD:5201. Same as CSD:5213.

MUS:6520 Methods of Teaching Voice 3 s.h.
Attitude, musicianship, foreign language aptitude, physical and emotional characteristics; mental images used to modify respiratory, phonatory, articulatory behavior; vocal hygiene; performance anxiety; student-teacher relationships; administration in vocal schools, professional organizations. Offered spring semesters. Same as CSD:6202.

MUS:6525 Voice for Performers 2 s.h.
Comparison of Kinesthetic techniques for singing and acting voice; relaxation, posture, breathing, tone quality, diction, interpretation. Same as CSD:6204, THTR:6525.

MUS:6530 Topics in Vocal Performance 2 s.h.
Selected areas of vocal performance.

MUS:6535 Opera Theater Directing Seminar arr.
Exploration, discussion, and experience using techniques unique to directing opera. Score and libretto analysis, fundamentals of stagecraft, casting and management skills.

MUS:6540 Survey of Operatic Literature 3 s.h.
Important operatic scores examined from standpoint of performers, directors; production problems.

MUS:6541 Survey of Song Literature I 3 s.h.
German language lieder from 18th century to present; French mélodie from Meyerbeer to present. Offered fall semesters of odd years.
MUS:6542 Survey of Song Literature II 3 s.h.
British, American, Italian, Spanish, Latin American, Scandinavian, and Russian art song from 18th century to present. Offered fall semesters of even years.

MUS:6556 Instrumentation for Voice Analysis 2 s.h.
Glottographic, videostroboscopic, electromyographic, and acoustic analysis for assessment of vocal and respiratory function; using these techniques in conjunction with perceptual evaluation of voice; through the Vocolology Institute in Utah. Offered summer sessions of even years. Requirements: enrollment in Summer Vocolology Institute, Salt Lake City, Utah. Same as CSD:6221.
Optical Science and Technology Center

Director
- Michael E. Flatte (Physics and Astronomy)

Faculty: http://ostc.uiowa.edu/members
Web site: http://ostc.uiowa.edu

The Optical Science and Technology Center consists of faculty members from the Departments of Chemical and Biochemical Engineering (p. 861) and Electrical and Computer Engineering (p. 884) (College of Engineering), and the Departments of Chemistry (p. 135) and Physics and Astronomy (p. 507) (College of Liberal Arts and Sciences). Among the faculty are distinguished scientists who have developed international reputations for innovative research on the frontiers of optical science and engineering. Funding to support research in the Center comes from a variety of federal, state, and private sources, including the National Science Foundation (NSF), the National Aeronautics and Space Administration (NASA), the Office of Naval Research (ONR), the National Institutes of Health (NIH) and the ACS Petroleum Research Fund.

Current research areas include laser spectroscopy and photochemistry, photonics and optoelectronics, ultrafast laser development, condensed matter physics, materials growth techniques, device physics/engineering, surface chemistry, chemical sensors, environmental chemistry, polymer science, plasma physics, and nonlinear optics.

Much of the research is housed in the modern Iowa Advanced Technology Laboratories. The laboratories in this environmentally-controlled building are devoted primarily to research in areas of optical science and technology. These world-class research laboratories offer state-of-the-art equipment including a variety of novel laser systems (such as widely tunable, ultrafast lasers), materials growth and characterization facilities, optoelectronics device fabrication and characterization, UHV surface science laboratories, and supersonic molecular beam time-of-flight mass spectrometer systems. Scientists also have access to University and department diagnostic support facilities, including nuclear magnetic resonance, mass spectrometry, Fourier transform infrared spectroscopy, X-ray diffraction, and electron microscopy.

Courses

OSTC:3750 Fundamentals of Micro and Nanofabrication 3 s.h.

Fundamentals of micro- and nano-fabrication processes; physical principles of photo and electron beam lithography, alternative nano-lithography techniques, thin film deposition, molecular beam epitaxy, atomic layer deposition, self-assembly; metrology methods; physical and chemical processes of wet and plasma etching; cleanroom science, operations, safety protocols; sequential micro- and nano-fabrication processes involved in manufacture of semiconductor, photonic, nanoscale devices; imaging and characterization of micro- and nano-structures; scientific and technological applications of emerging micro- and nano-devices and systems. Prerequisites: PHYS:1611 or PHYS:1612 or PHYS:1702 or BIOL:1141 or CHEM:1060 or CHEM:1110 or CHEM:1120. Requirements: undergraduate lab course in chemistry, biology, physics, or engineering. Same as PHYS:3750.
Performing Arts Entrepreneurship

Director, Division of Performing Arts
• Alan MacVey

Coordinator, Performing Arts Entrepreneurship
• David McGraw

Undergraduate certificate: performing arts entrepreneurship
Web site: http://dpa.uiowa.edu/academic-programs/performing-arts-entrepreneurship-certificate

Undergraduate Program of Study
• Certificate in Performing Arts Entrepreneurship

The Division of Performing Arts, in partnership with the John Pappajohn Entrepreneurial Center in the Tippie College of Business, offers the undergraduate Certificate in Performing Arts Entrepreneurship. The program gives students the opportunity to pursue professional studies in the performing arts, in the framework of a liberal arts education, and to develop the skills required for creating market-based opportunities in the arts.

Certificate

The Certificate in Performing Arts Entrepreneurship requires a minimum of 29 s.h. The certificate program is open to current University of Iowa undergraduate students and to all individuals who hold a bachelor's degree and are not enrolled in a graduate or professional degree program. Students must maintain a g.p.a. of at least 2.00 in work for the certificate.

The program is designed for students of dance, music, and theatre arts who wish to learn about the business of the performing arts and to develop the entrepreneurial skills necessary for promoting their artistic work.

Certificate students are strongly encouraged, but not required, to pursue a major in one of the performing arts.

Work for the certificate includes entrepreneurship-related courses in accounting, financial management, and marketing as well as courses focused on arts management and leadership practices in both commercial and nonprofit organizations (20 s.h.). Students also must complete course work in dance, music, or theatre arts (9 s.h.) and an internship in an arts organization (0 s.h.).

Students may not use a course to satisfy more than one certificate requirement (e.g., a business course required for the certificate that is cross-listed in dance, music, or theatre arts may not also be counted toward the performing arts course requirement).

The Certificate in Performing Arts Entrepreneurship requires the following course work.

PERFORMING ARTS

Certificate students earn 9 s.h. in courses numbered 3000 or above taken in one of three performing arts units: the Department of Dance, the School of Music, or the Department of Theatre Arts. Many of these courses have prerequisites; consult an advisor about course sequencing.

BUSINESS AND ENTREPRENEURSHIP

Students must complete ENTR:1350 Foundations in Entrepreneurship, an entrepreneurship prerequisite that is offered both on campus and online. They also must complete several courses that focus on entrepreneurial and arts financing; entrepreneurship, innovation, and new ventures in the arts; entrepreneurial marketing; e-commerce for entrepreneurs; arts management; and arts leadership.

Prerequisite:

ENTR:1350 Foundations in Entrepreneurship 2 s.h.

One of these:

ARTS:3400 Grant Writing in the Arts 3 s.h.
ENTR:3100 Entrepreneurial Finance 3 s.h.

One of these:

DPA:3520 New Ventures in the Arts 3 s.h.
ENTR:2000 Entrepreneurship and Innovation 3 s.h.

All of these:

DPA:3510 Introduction to Arts Management 3 s.h.
DPA:4510 Arts Leadership Seminar 3 s.h.
ENTR:3200 Entrepreneurial Marketing 3 s.h.
ENTR:3600 E-Commerce Strategies for Entrepreneurs 3 s.h.

INTERNSHIP

Students may complete the required internship (0 s.h.) during any semester in the program. The Pomerantz Career Center coordinates a wide variety of internships; see Career Center Programs (p. 1201) (University College) in the Catalog. Students also may choose other internship opportunities. The Iowa Arts Council and the Iowa Cultural Corridor Alliance maintain lists of recommended host organizations.

Living-Learning Community

First- and second-year students studying performing arts entrepreneurship may apply to live in the Arts Living-Learning Community, a coed floor in a University of Iowa east campus residence hall. The community includes students from art and art history, dance, film, music, and theatre arts.

Courses

Lower-Level Undergraduate

DPA:1000 First-Year Seminar 1 s.h.
Small discussion class taught by a faculty member; topics chosen by instructor; may include outside activities (e.g., films, lectures, performances, readings, visits to research facilities, field trips). Requirements: first- or second-semester standing.

DPA:1412 The Arts in Performance 3 s.h.

DPA:2060 Dance and Society in Global Contexts 3 s.h.
Dance and other physical endeavors as embodied forms of knowledge and culture; U.S. dance practices; European and African dance cultures; aesthetic and political issues raised by concert dance (i.e., performance, choreography, spectatorship, criticism); ethnomethods to examine the function of dance in cultural formation (i.e., spiritual, celebratory, social, political contexts); lecture, discussion, viewing, movement workshops, formal and informal writing, field research, and BLOG construction. GE: Literary, Visual, and Performing Arts. Same as DANC:2060.

**Upper-Level Undergraduate and Graduate**

**DPA:3004 World of the Beatles**  3 s.h.
How the Beatles' music was influenced by American pop music, the drug culture, and the Avant Garde, nonwestern instruments and philosophy, anti-war sentiments, and world politics, and so forth; Beatlemania's impact on British and American cultures and its role in opening Eastern Europe to the West. Same as MUS:3004.

**DPA:3085 Introduction to Afro-Cuban Dance**  1 s.h.
Introduction to the dance, drumming, and songs of the Afro-Cuban folkloric traditions; emphasis on dance. May participate in UI Afro-Cuban Drum and Dance ensemble. Same as DANC:3085.

**DPA:3086 Afro-Cuban Drum and Dance Performance**  1 s.h.
Dance repertoire for the UI Afro-Cuban Drum and Dance Ensemble. Performance pieces based on dance, drumming, songs of the Afro-Cuban folkloric traditions. May participate in UI Afro-Cuban Drum and Dance Ensemble. Same as DANC:3086.

**DPA:3154 Introduction to Afro-Cuban Drumming**  1 s.h.
Drumming, dance, songs from folkloric and ceremonial Afro-Cuban forms; emphasis on drumming; may include participation in Afro-Cuban drum and dance ensemble. Same as MUS:3154.

**DPA:3210 Makeup Design for the Stage**  3 s.h.
Same as THTR:3210.

**DPA:3221 Technology for the Entertainment Industry**  3 s.h.
Introduction to technology skills that are at the center of the entertainment industry; programming and operating digital lighting and sound consoles, intelligent lighting systems, projection hardware and software; outdoor event rigging, metal construction, and fabrication. Same as THTR:3221.

**DPA:3510 Introduction to Laban Movement Studies**  3 s.h.
Introduction to Bartenieff Fundamentals (BF) and Laban Movement Analysis (LMA) as methods of organizing and integrating movement to support artistic goals and expanding expressive range; BF teaches body awareness, breath support, developmental patterns, ergonomically-efficient alignment, balancing of muscular strength and stretch, and coordination; LMA teaches vocabulary of expressive movement and nonverbal communication, including effort (use of energy/dynamics for expression, stamina, stress relief) and shape (how posture and gesture communicate); quality of movement that supports individual goals in artistic expression, sound production, and wellness. Same as MUS:3850, THTR:3850, DANC:3850.

**DPA:3851 Introduction to the Alexander Technique**  3 s.h.
The Alexander Technique and "self-use"—how movement choices affect results achieved; improvement of physical skills and presence; principles in support of performing arts (e.g., speaking, singing, playing an instrument, dancing, acting); application to skills in daily life, addressing underpinnings of movement; physical participation (e.g., lying down, rolling, sitting, standing, locomotion). Same as MUS:3851, DANC:3851, THTR:3851.

**DPA:4060 The Contemporary Dance Scene**  3 s.h.
Historical, theoretical, and practical elements of contemporary dance; the term "postmodern" and its associations with dance, performing arts, contemporary culture; relationships between process and product, identity and subjectivity, artistic intent and authorship, meaning and intertextuality; possibility of art as a form of dissent; theory and practice placed in a dialectic; analysis and synthesis of previous research. Same as DANC:4060.

**DPA:4510 Arts Leadership Seminar**  3 s.h.
Performing arts management and administrative principles, practical applications, trends in arts leadership and advocacy. Prerequisites: THTR:3510 or THTR:3520 or ENTR:2000. Same as ENTR:4510, THTR:4510, INTD:4510.

**Graduate**

**DPA:5060 Theories of Dance and the Body**  3 s.h.
Theoretical trends in studies of dance and physical bodies; performative and choreographic aspects of being. Same as DANC:5060.

**DPA:5550 Collaborative Performance**  1-4 s.h.
Collaborative experience with advanced artists from varied disciplines that culminates in a final performance; emphasis on sharing and investigating ideas, artistic intent, personal vision, and creating collaborative projects. Same as DANC:5550, THTR:5610.
Philosophy

Chair

• David Cunning

Undergraduate major: philosophy (B.A.)
Undergraduate minor: philosophy
Graduate degrees: M.A. in philosophy; Ph.D. in philosophy
Faculty: http://clas.uiowa.edu/philosophy/people/faculty
Web site: http://clas.uiowa.edu/philosophy/

The Department of Philosophy offers programs of study for undergraduate and graduate students. It also administers the interdisciplinary undergraduate major in ethics and public policy, which it offers jointly with the Departments of Economics and Sociology; see Ethics and Public Policy (p. 286) in the Catalog.

Undergraduate Programs of Study

• Major in philosophy (Bachelor of Arts)
  • Minor in philosophy

Undergraduate courses in philosophy are designed to impart knowledge of fundamental issues and main developments in philosophy while strengthening logical and analytic skills. A major in philosophy develops abilities useful for work in many fields and for any situation requiring clear, systematic thinking. Philosophy majors earn among the very highest scores on the Law School Admission Test (LSAT), the Graduate Management Admission Test (GMAT), the Medical College Admission Test (MCAT), and the Graduate Record Exam (GRE) General Test. Philosophy graduates enter into such fields as law, business, medicine, scientific research, government, consulting, journalism, and K-12 education, among others. Students who intend to teach philosophy in a college setting must earn a graduate degree.

Bachelor of Arts

The Bachelor of Arts with a major in philosophy requires a minimum of 120 s.h., including at least 30 s.h. of work for the major. A minimum of 21 s.h. for the major must be earned at the University of Iowa. Students must maintain a g.p.a. of at least 2.00 in all courses for the major and in all UI courses for the major. They also complete the College of Liberal Arts and Sciences General Education Program (p. 313).

Students should discuss the requirements for the major with an advisor as soon as possible. The advisor can suggest the most effective order for taking courses, based on each student's interests and on the relation of the course topics to each other.

The major requires 30 s.h. of philosophy courses (prefix PHIL), of which at least two courses must be numbered 4000 or above. Only 6 s.h. of the total hours required for the major can be taken in course work numbered at the 1000-level (see the list below for options).

May take two courses from these:

PHIL:1033 The Meaning of Life 3 s.h.
PHIL:1034 Liberty and the Pursuit of Happiness 3 s.h.
PHIL:1401 Matters of Life and Death 3 s.h.
PHIL:1636 Principles of Reasoning: Argument and Debate 3 s.h.
PHIL:1861 Introduction to Philosophy 3 s.h.

In addition, the major in philosophy requires the following course work.

VALUE THEORY
At least two of these:

PHIL:2402 Introduction to Ethics 3 s.h.
PHIL:2415 Bioethics 3 s.h.
PHIL:2429 War, Terrorism, and Torture 3 s.h.
PHIL:2432 Introduction to Political Philosophy 3 s.h.
PHIL:2435 Philosophy of Law 3 s.h.
PHIL:2436 The Nature of Evil 3 s.h.
PHIL:3342 Multiculturalism and Toleration 3 s.h.
PHIL:3430 Philosophy of Human Rights 3 s.h.
PHIL:3431 Aesthetics 3 s.h.
PHIL:3845 Buddhist Philosophy 3 s.h.
PHIL:3847 Philosophical Issues (if content is applicable; check with instructor) 3-4 s.h.
PHIL:3849 Undergraduate Seminar in Philosophy (if content is applicable; check with instructor) 3 s.h.
PHIL:4152 Plato (if content is applicable; check with instructor) 3 s.h.
PHIL:4153 Aristotle (if content is applicable; check with instructor) 3 s.h.
PHIL:4375 Rawls's Political Philosophy 3 s.h.
PHIL:4480 Analytic Ethics 3 s.h.
PHIL:4481 Issues in Philosophy of Law 3 s.h.
PHIL:4482 History of Ethics 3 s.h.
PHIL:4485 Political Philosophy 3 s.h.
PHIL:4798 Topics in Philosophy (if content is applicable; check with instructor) 3 s.h.

METAPHYSICS/EPISTEMOLOGY
At least two of these:

PHIL:2343 Philosophy East and West 3 s.h.
PHIL:2437 Introduction to Metaphysics 3 s.h.
PHIL:2442 Knowledge and the Threat of Skepticism 3 s.h.
PHIL:2480 Language and Its Social Roles 3 s.h.
PHIL:2534 Philosophy of Religion 3 s.h.
PHIL:2538 Minds and Machines 3 s.h.
PHIL:2542 Minds and Brains 3 s.h.
PHIL:3002 Ancient Skepticism 3 s.h.
PHIL:3112 Medieval Philosophy 3 s.h.
PHIL:3318 Twentieth-Century Philosophy 3 s.h.
PHIL:3604 Introduction to Philosophy of Science 3 s.h.
PHIL:3633 Philosophy of History 3 s.h.
PHIL:3847 Philosophical Issues (if content is applicable; check with instructor) 3-4 s.h.
PHIL:3849 Undergraduate Seminar in Philosophy (if content is applicable; check with instructor) 3 s.h.
PHIL:4050 Topics in Buddhist Philosophy 3 s.h.
PHIL:4152 Plato (if content is applicable; check with instructor) 3 s.h.
PHIL:4153 Aristotle (if content is applicable; check with instructor) 3 s.h.
PHIL:4258 Descartes 3 s.h.
PHIL:4260 Spinoza and Leibniz 3 s.h.
PHIL:4263 Berkeley and Hume 3 s.h.
PHIL:4266 Kant 3 s.h.
PHIL:4346 Fregé and Russell 3 s.h.
PHIL:4373 Heidegger 3 s.h.
PHIL:4377 Wittgenstein 3 s.h.
PHIL:4379 Quine 3 s.h.
PHIL:4586 Topics in Metaphysics 3 s.h.
PHIL:4587 Epistemology 3 s.h.
PHIL:4588 Philosophy of Mind 3 s.h.
PHIL:4589 Philosophy of Language 3 s.h.
PHIL:4590 Foundations of Cognitive Science 3 s.h.
PHIL:4694 Philosophy of Science 3 s.h.
PHIL:4696 Philosophy of the Human Sciences 3 s.h.
PHIL:4798 Topics in Philosophy (if content is applicable; check with instructor) 3 s.h.

**ANCIENT PHILOSOPHY**
This course:
PHIL:2111 Ancient Philosophy 3 s.h.

**MODERN PHILOSOPHY**
At least one of these:
PHIL:2214 Seventeenth-Century Philosophy 3 s.h.
PHIL:2215 Modern Philosophy 3 s.h.
PHIL:2216 Eighteenth-Century Philosophy 3 s.h.

**INTRODUCTORY LOGIC**
And this course:
PHIL:2603 Introduction to Symbolic Logic 3 s.h.

**Four-Year Graduation Plan**
The following checkpoints list the minimum requirements students must complete by certain semesters in order to stay on the University’s Four-Year Graduation Plan.

**Before the fifth semester begins**: at least one course in the major
**Before the seventh semester begins**: at least five courses in the major and at least 90 s.h. earned toward the degree
**Before the eighth semester begins**: at least six courses in the major
**During the eighth semester**: enrollment in all remaining course work in the major, all remaining General Education courses, and a sufficient number of semester hours to graduate

**Honors in the Major**
Students majoring in philosophy have the opportunity to graduate with honors in the major. In order to be admitted to the departmental honors program, a student must have taken and passed three courses required for the philosophy major. To graduate with honors in the major, students must complete the requirements for the major with a g.p.a. of at least 3.40 in philosophy coursework and must write an acceptable honors thesis on a significant topic in philosophy of interest to them. Contact the department’s honors advisor for more information.

**Minor**
The minor in philosophy requires a minimum of 15 s.h. in philosophy courses, including at least 9 s.h. in courses numbered 2000 or above. At least 12 s.h. for the minor must be taken at the University of Iowa. Students must maintain a cumulative g.p.a. of at least 2.00 in all courses for the minor and in all UI courses for the minor. Course work in the minor may not be taken pass/nonpass. Contact the undergraduate studies director for more information.

**Graduate Programs of Study**
- Master of Arts in philosophy
- Doctor of Philosophy in philosophy

The Department of Philosophy grants admission only for the Ph.D. program. The M.A. is awarded to students as they work successfully toward the Ph.D.; it is not offered as a terminal degree.

The graduate program is designed to train teachers and scholars in philosophy. The main areas in the graduate curriculum are metaphysics, epistemology, history of philosophy, logic, philosophy of science, and value theory.

Applicants must meet the admission requirements of the Graduate College; see the Manual of Rules and Regulations of the Graduate College.

**Master of Arts**
The Master of Arts in philosophy requires a minimum of 30 s.h. of graduate credit and is offered without thesis. The M.A. is not offered as a terminal degree; it is awarded to students as they work successfully toward the Ph.D. Requirements include courses in metaphysics, epistemology, history of philosophy, ethics, logic, philosophy of science, and value theory. There is no foreign language requirement. Students must take an oral final examination. Contact the graduate studies director for more information.

**Joint M.A./J.D.**
The Department of Philosophy and the College of Law offer a joint Juris Doctor/Master of Arts degree program. M.A./J.D. students may count 12 s.h. earned in the joint program toward both degrees. They must earn 18 of the 30 s.h. required for the M.A. in graduate-level philosophy courses (the usual requirement is 24 s.h.). They also must earn a minimum of 36 s.h. in undergraduate and graduate philosophy courses, combined (the usual requirement is 42 s.h.).

Separate application to each degree program is required. Applicants must be admitted to both programs before they may be admitted to the joint degree program.

See “Juris Doctor” and “Joint J.D./Graduate Degrees” in the College of Law (p. 969) section of the Catalog.

**Doctor of Philosophy**
The Ph.D. requires a minimum of 72 s.h. of graduate credit. Candidacy for the doctoral program is determined by a formal vote of the entire Department of Philosophy
faculty, usually after the student has completed three semesters of graduate study in residence.

Requirements include courses in metaphysics, epistemology, history of philosophy, logic, philosophy of science, and value theory. Students are required to take a comprehensive examination that covers their area of specialization and includes both written and oral components. Upon successfully completing the exam, they begin work on a prospectus for their dissertation. There is no foreign language requirement. Contact the graduate studies director for more information.

Courses
For more detailed descriptions of undergraduate and graduate courses offered during a given semester or summer session, visit the University's ISIS web site before early registration.

Lower-Level Undergraduate

PHIL:1001 CLAS Master Class 1-3 s.h.
Exploration of a single topic in a series of lectures by faculty presenting divergent perspectives; illuminates intellectual adventure inherent in liberal arts and sciences; encourages discovery of majors and other areas of study within the College of Liberal Arts and Sciences. Same as CLAS:1001, RELS:1010, THTR:1001, CS:1001, CSD:1001, ENGL:1001, BIOL:1001, ARTS:1001.

PHIL:1010 First-Year Seminar 1 s.h.
Small discussion class taught by a faculty member; topics chosen by instructor; may include outside activities (e.g., films, lectures, performances, readings, visits to research facilities).

PHIL:1033 The Meaning of Life 3 s.h.
Philosophical investigation of the nature of human life and of what makes human life valuable and/or meaningful. GE: Historical Perspectives.

PHIL:1034 Liberty and the Pursuit of Happiness 3 s.h.
Examination of conflict between state power and individual liberty; philosophical and historical examination of theories from Plato through today. GE: Historical Perspectives.

PHIL:1401 Matters of Life and Death 3 s.h.
Contemporary ethical controversies with life and death implications; topics may include famine, brain death, animal ethics, abortion, torture, terrorism, capital punishment. GE: Values, Society, and Diversity.

PHIL:1636 Principles of Reasoning: Argument and Debate 3 s.h.
Critical thinking and its application to arguments and debates. GE: Quantitative or Formal Reasoning.

PHIL:1861 Introduction to Philosophy 3 s.h.
Varied topics; may include personal identity, existence of God, philosophical skepticism, nature of mind and reality, time travel, and the good life; readings, films. GE: Values, Society, and Diversity.

PHIL:2111 Ancient Philosophy 3 s.h.
Ancient Greek philosophy from Thales to Aristotle; pre-Socratic cosmologists, Socrates, ancient medicine and religion, rivalry between sophists and philosophers; primary focus on reaction of Plato and Aristotle to this intellectual inheritance culminating in their greatest achievement, the invention of systematic philosophy.

PHIL:2214 Seventeenth-Century Philosophy 3 s.h.
Varied topics; may include free will, the mind-body problem, existence of God, state versus society, science and religion, stoicism, early feminism; Francis Bacon, René Descartes, Margaret Cavendish, Baruch Spinoza, Anne Conway, G.W. Leibniz, Mary Astell, John Locke.

PHIL:2215 Modern Philosophy 3 s.h.
Varied topics; may include free will, the mind-body problem, existence of God, creation versus evolution, subjectivity of perception, limits of cognition, the good life; Rene Descartes, Margaret Cavendish, Baruch Spinoza, Anne Conway, G.W. Leibniz, Mary Astell, John Locke, George Berkeley, David Hume, Immanuel Kant.

PHIL:2216 Eighteenth-Century Philosophy 3 s.h.
Varied topics; may include appearance versus reality, empiricism and science, the mind-body problem, existence of God, creation versus evolution, subjectivity of perception, limits of cognition, the good life, early feminism; Mary Astell, John Locke, George Berkeley, David Hume, Immanuel Kant.

PHIL:2343 Philosophy East and West 3 s.h.
A comparative study of Eastern and Western philosophies and arguments concerning the nature and existence of the self.

PHIL:2402 Introduction to Ethics 3 s.h.
Analytical and historical introduction to ethical theories; issues such as the nature of the goodness, distinction between right and wrong. GE: Values, Society, and Diversity.

PHIL:2415 Bioethics 3 s.h.
Recent developments in biotechnology and medicine; designer babies and cloning, genetic screening for disease, distributive justice in health care, animal experimentation, physician-assisted suicide, and euthanasia.

PHIL:2429 War, Terrorism, and Torture 3 s.h.
Examination of some of the most compelling ethical and legal questions surrounding the topic of war (Can a war ever be justified? If so, under which conditions is one justified in waging war? Are there limitations on permissible ways to fight a war? How are acts of terrorism different from acts of war? Is torture ever justified?).

PHIL:2432 Introduction to Political Philosophy 3 s.h.
Survey of central problems in political philosophy; focus on liberty, equality, justice, and purpose of the state; core philosophers may include John Locke, Jean-Jacques Rousseau, Thomas Hobbes, John Stuart Mill, and John Rawls.
Upper-Level Undergraduate and Graduate

**PHIL:2435 Philosophy of Law** 3 s.h.
examination of jurisprudential theories and their answers to the question, “What is law?”; intersection between law and morality, legal punishment, political obligation, constitutional interpretation.

**PHIL:2436 The Nature of Evil** 3 s.h.
The nature of evil explored through philosophical texts, videos and films, case studies of individuals.

**PHIL:2437 Introduction to Metaphysics** 3 s.h.
Questions about the ultimate nature of reality and our place in it: What is the nature of space and time? Is time travel possible? What is the self and how does it persist through time and change? What is the nature of causation? Do we have free will?

**PHIL:2442 Knowledge and the Threat of Skepticism** 3 s.h.
Skeptical doubt and distinction between appearance and reality; nature of knowledge and what, if anything, can we know.

**PHIL:2480 Language and Its Social Roles** 3 s.h.
Introduction to basic concepts in philosophy of language and speech act theory; social and political uses of language including nature of speech, silencing, oppressive and hate speech, propaganda and dehumanizing language, lying and misleading with language.

**PHIL:2534 Philosophy of Religion** 3 s.h.
Historical to contemporary treatments of central issues; nature of faith, existence and nature of God, science and religion, ethics and religion, miracles, religious experience, interpretation of religious texts. Requirements: sophomore or higher standing. Same as RELS:2834.

**PHIL:2538 Minds and Machines** 3 s.h.
Questions concerning artificial intelligence: What is a mind? What is the relationship between minds and machines? What distinguishes real minds from artificial minds? Could computers or robots think or have feelings? If we create something whose intelligence surpasses that of humans, do we have a right to control it? Are your smart electronic devices parts of your mind? How has the Internet changed our lives? Do we survive, perhaps immortally, if we upload contents of our minds to the Internet or Cloud?

**PHIL:2542 Minds and Brains** 3 s.h.
Nature of mind in the age of the brain; exploration of questions (How is the mind related to the brain? What do brain scans show? How does the brain process information? What is conscious experience? Is free will threatened by neuroscience? How are intuitive conceptions of memory, emotion, and other mental capacities changing?).

**PHIL:2603 Introduction to Symbolic Logic** 3 s.h.
Main ideas and techniques of modern natural deduction with quantifiers (all, some, most, exactly one); relations and identity; topics in philosophy of logic including nature of logic, nature of functions, logical necessity, identity as a relation, and how we know logic.
PHIL:3431 Aesthetics 3 s.h.
Issues regarding art, aesthetic judgment, and role of art in society; investigation of questions: What is art and what is good art? What is conceptual art? Are aesthetic judgments just a matter of taste, or are some opinions about art better than others? What features of artworks matter for making such judgments, and which don't? Issues pertaining to various arts including painting and sculpture, music, fiction and poetry, performance arts; introduction to artworks and artists.

PHIL:3510 Neuroethics 3 s.h.
Issues that arise from advances in knowledge of brain-mind relations: cognitive neuroenhancement, neuroimaging-based lie detection and privacy, changing standards of moral and legal responsibility, justification of punishment, admissibility of neuroimaging in legal contexts.

PHIL:3604 Introduction to Philosophy of Science 3 s.h.
Examination of basic questions regarding nature of science and scientific knowledge: When is a field of inquiry a science? What counts as evidence in a science, and why? In what sense, if any, is science objective? What are scientific laws, theories, and explanations? If scientific theories are never proven with certainty, are we justified in believing them to be true? Recommendations: background in science (psychology, biology, chemistry, physics).

PHIL:3633 Philosophy of History 3 s.h.
Major problems; objectivity, historiographic methods and theory of interpretation, nature of historical explanations, historical laws and free will, reducibility of group phenomena to individual actions.

PHIL:3845 Buddhist Philosophy 3 s.h.
Theories and arguments concerning the Buddhist path to enlightenment. Same as RELS:3645.

PHIL:3847 Philosophical Issues 3-4 s.h.
A philosophical topic or controversy.

PHIL:3849 Undergraduate Seminar in Philosophy 3 s.h.
Selected problems. Same as CLSA:3849.

PHIL:3950 Readings in Philosophy arr.
Requirements: honors standing and sophomore or higher standing.

PHIL:4050 Topics in Buddhist Philosophy 3 s.h.
Buddhist theories and arguments concerning nature and existence of the self.

PHIL:4152 Plato 3 s.h.
Introduction to metaphysics, epistemology, and moral theory of Plato; topics may include the philosophy of Socrates, Plato's theory of Forms, the tripartite soul, nature of virtue and moral education; Plato's cosmology and assimilation of human nature to the divine; close reading and interpretation of specific texts.

PHIL:4153 Aristotle 3 s.h.
Introduction to metaphysics, epistemology, and moral theory of Aristotle; topics may include Aristotle's theories of matter and form, causation, motion, change, space, void, time; Aristotle's philosophy of biology and theory of the soul; unity of virtue, nature of action and choice; the syllogism. Combines survey with close reading and interpretation of specific texts.

PHIL:4258 Descartes 3 s.h.
Descartes' systematic philosophy and impact on current debates; topics may include skepticism, the confusion of everyday experience, the mind-body problem, innate ideas and empiricism, free will, nature and existence of God, science and religion, problem of evil, stoicism.

PHIL:4260 Spinoza and Leibniz 3 s.h.
Comparative and critical examination of metaphysical and epistemological views of 17th-century rationalists, Baruch Spinoza and G.W. Leibniz; topics may include monism, panpsychism, space and time, free will and necessity, the confusion of everyday experience, incomplete versus complete ideas, nature and existence of God, stoicism, passions and emotions as objects of detached scientific investigation.

PHIL:4263 Berkeley and Hume 3 s.h.
Comparative and critical examination of metaphysical and epistemological views of 18th-century empiricists, George Berkeley and David Hume; topics may include the theory of ideas, perception, skepticism, limits of knowledge, the mind-body problem, scientific and philosophical method, role of God in Berkeley's and Hume's philosophical systems.

PHIL:4266 Kant 3 s.h.
Main ideas and major texts of Kant's metaphysics and epistemology; particular attention given to Critique of Pure Reason.

PHIL:4346 Frege and Russell 3 s.h.
Major issues concerning Frege's revolution in logic, Cantor's taming of the infinite, and Russelian synthesis of these revolutions to form Logicist thesis that all of pure mathematics (including geometry) is a branch of the science of logic; central issues in the philosophy of language and analysis of logical form; Russell's theory of definite descriptions and his logicism as a paradigm for a philosophical solution to mysteries of existence, number, infinite, motion, and Zeno paradoxes.

PHIL:4373 Heidegger 3 s.h.
Main ideas and major texts of Martin Heidegger; early and later periods; particular attention given to Being and Time; focus on Heidegger's analyses of Being and being-in-the-world.

PHIL:4375 Rawls's Political Philosophy 3 s.h.
Major works by John Rawls, selected secondary readings; contractarianism, concept of justice, justice as fairness as an alternative to utilitarianism, Kantian foundations, comprehensive and political liberalism.
they seem to us to be? What reason do we have for thinking that things are as being systematically deceived right now? And if we can't, can we rule out the possibility that we are dreaming or really know as much as we are inclined to think we do?

Theories of nature, structure, and extent of knowledge and rational belief; investigation of questions: Do we really know as much as we are inclined to think we do? Can we rule out the possibility that we are dreaming or being systematically deceived right now? And if we can't, what reason do we have for thinking that things are as they seem to us to be?
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tr>
<td>PHIL:6200</td>
<td>Seminar: Modern Philosophy</td>
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<td>PHIL:6300</td>
<td>Seminar: Philosophical Analysis</td>
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<td>PHIL:6400</td>
<td>Seminar: Ethics</td>
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<td>Seminar: Metaphysics</td>
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<td>PHIL:6520</td>
<td>Seminar: Epistemology</td>
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<td>PHIL:6540</td>
<td>Seminar: Philosophy of Language</td>
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<td>Seminar: Philosophy of Science</td>
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<td>PHIL:6800</td>
<td>Seminar: Philosophy of Religion</td>
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<td>PHIL:7200</td>
<td>Research: History of Philosophy</td>
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<td>PHIL:7400</td>
<td>Research: Value Theory</td>
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<td>PHIL:7500</td>
<td>Research: Metaphysics and Epistemology</td>
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<td>PHIL:7600</td>
<td>Research: Logic and Philosophy of Science</td>
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<td>PHIL:7900</td>
<td>Thesis</td>
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Physics and Astronomy

Chair
- Frederick N. Skiff

Undergraduate majors: physics (B.A., B.S.); applied physics (B.S.); astronomy (B.A., B.S.)
Undergraduate minors: physics; astronomy
Graduate degrees: M.S. in physics; M.S. in astronomy; Ph.D. in physics (optional subprogram in astronomy)
Faculty: http://www.physics.uiowa.edu/people
Web site: http://www.physics.uiowa.edu/

The Department of Physics and Astronomy provides comprehensive and rigorous instruction in all basic aspects of its subjects. It also provides research facilities and guidance in selected specialties for advanced individual scholarly work.

In addition to its undergraduate and graduate programs of study, the department offers several courses that undergraduate students in all majors may use to satisfy the General Education Program (p. 313) Natural Sciences requirement and a First-Year Seminar designed for entering undergraduates.

All of the department's courses and advanced laboratories are taught by faculty members. Faculty members also supervise associated laboratories taught by graduate students. Enrollment in courses beyond the elementary level is typically 15 to 20 students; there is ample opportunity for individual work. Special introductory courses are offered for students majoring in physics and astronomy and for others with a special interest in these subjects.

Total enrollment in physics and astronomy courses is approximately 1,700 each semester of the academic year and 150 during the summer session. The department has around 80 undergraduate majors, half of whom are honors students, and 70 graduate students.

About 70 percent of graduates with bachelor's degrees pursue advanced study. Others find positions in government and industrial laboratories and in secondary school teaching. Some use their training as the basis for careers in industry, employment in research laboratories, and graduate study in physics and related sciences.

The physics major for the Bachelor of Science requires a minimum of 120 s.h., including at least 58 s.h. of work for the major (minimum of 42 s.h. in physics plus 16 s.h. in supporting course work). Students must maintain a g.p.a. of at least 2.00 in all courses for the major and in all UI courses for the major. They also must complete the College of Liberal Arts and Sciences General Education Program (p. 313).

The physics major for the B.S. provides preparation for careers in industry, employment in research laboratories, and graduate study in physics and related sciences. Students take calculus and linear algebra in addition to physics courses, which include laboratories, and the department encourages them to do additional work.

The physics major for the Bachelor of Science requires the following courses or their equivalents. Many upper-level physics courses have prerequisites; students should consult their advisors when choosing courses numbered 3000 or above.

**MATHEMATICS**
- MATH:1850 & MATH:1860 Calculus I-II 8 s.h.
- MATH:2700 Introduction to Linear Algebra 4 s.h.
- MATH:2850 Calculus III 4 s.h.

**LABORATORIES**
- PHYS:3756 Intermediate Laboratory 3 s.h.

One of these:
- ASTR:4850 Astronomical Laboratory 3 s.h.
- PHYS:3850 Electronics 4 s.h.
- PHYS:4750 Advanced Laboratory 3 s.h.

Students who choose PHYS:3850 Electronics as one of their two required laboratory courses are advised to take it before they take PHYS:3756 Intermediate Laboratory.

**OTHER REQUIRED COURSES**

One of these sequences:
- PHYS:1701 & PHYS:1702 & PHYS:2703 Physics I-II - Physics III (strongly preferred) 12 s.h.
- PHYS:1611-PHYS:1612 Introductory Physics I-II 8 s.h.

All of these:
- PHYS:2704 Physics IV 4 s.h.
- PHYS:3710 Intermediate Mechanics 3 s.h.
- PHYS:3730 Statistical Physics 3 s.h.
- PHYS:3741-PHYS:3742 Introduction to Quantum Mechanics I-II 6 s.h.
- PHYS:3811-PHYS:3812 Electricity and Magnetism I-II 6 s.h.

Two of these:
- ASTR:3771 Introduction to Astrophysics I 3 s.h.
- ASTR:3772 Introduction to Astrophysics II 3 s.h.
- ASTR:4770 Radio Astronomy 3 s.h.
- ASTR:4850 Astronomical Laboratory 3 s.h.
- PHYS:3850 Electronics (may not be repeated) 4 s.h.

Students who wish to earn a double major in physics and astronomy must choose their course work carefully; see "B.A. or B.S.: Double Major in Physics and Astronomy" below. Bachelor of Arts students majoring in physics who are interested in science teaching and in earning a graduate degree may enroll in a joint degree program offered by the College of Liberal Arts and Sciences and the College of Education; see "Joint B.A./M.A.T. with Science Education Subprogram" below.

**Bachelor of Science: Physics**

The Bachelor of Science with a major in physics requires a minimum of 120 s.h., including at least 58 s.h. of work for the major (minimum of 42 s.h. in physics plus 16 s.h. in supporting course work). Students must maintain a g.p.a. of at least 2.00 in all courses for the major and in all UI courses for the major. They also must complete the College of Liberal Arts and Sciences General Education Program (p. 313).

The physics major for the B.S. provides preparation for careers in industry, employment in research laboratories, and graduate study in physics and related sciences. Students take calculus and linear algebra in addition to physics courses, which include laboratories, and the department encourages them to do additional work.

The physics major for the Bachelor of Science requires the following courses or their equivalents. Many upper-level physics courses have prerequisites; students should consult their advisors when choosing courses numbered 3000 or above.

**MATHEMATICS**
- MATH:1850 & MATH:1860 Calculus I-II 8 s.h.
- MATH:2700 Introduction to Linear Algebra 4 s.h.
- MATH:2850 Calculus III 4 s.h.

**LABORATORIES**
- PHYS:3756 Intermediate Laboratory 3 s.h.

One of these:
- ASTR:4850 Astronomical Laboratory 3 s.h.
- PHYS:3850 Electronics 4 s.h.
- PHYS:4750 Advanced Laboratory 3 s.h.

Students who choose PHYS:3850 Electronics as one of their two required laboratory courses are advised to take it before they take PHYS:3756 Intermediate Laboratory.

**OTHER REQUIRED COURSES**

One of these sequences:
- PHYS:1701 & PHYS:1702 & PHYS:2703 Physics I-II - Physics III (strongly preferred) 12 s.h.
- PHYS:1611-PHYS:1612 Introductory Physics I-II 8 s.h.

All of these:
- PHYS:2704 Physics IV 4 s.h.
- PHYS:3710 Intermediate Mechanics 3 s.h.
- PHYS:3730 Statistical Physics 3 s.h.
- PHYS:3741-PHYS:3742 Introduction to Quantum Mechanics I-II 6 s.h.
- PHYS:3811-PHYS:3812 Electricity and Magnetism I-II 6 s.h.

Two of these:
- ASTR:3771 Introduction to Astrophysics I 3 s.h.
- ASTR:3772 Introduction to Astrophysics II 3 s.h.
- ASTR:4770 Radio Astronomy 3 s.h.
- ASTR:4850 Astronomical Laboratory 3 s.h.
- PHYS:3850 Electronics (may not be repeated) 4 s.h.
Undergraduate majors who plan to pursue graduate study are advised to go as far as they can beyond the minimum requirements listed above, including further work in mathematics. In planning this work, they should be guided by the College of Liberal Arts and Sciences maximum hours rule: Students earning a B.A. or B.S. may apply a maximum of 56 s.h. earned in one department to the minimum 120 s.h. required for graduation, whether or not the course work is accepted toward requirements for the major; students who earn more than 56 s.h. from one department may use the additional semester hours to satisfy requirements for the major (if the department accepts them), and the grades they earn become part of their grade-point average; but they cannot apply the additional semester hours to the minimum 120 s.h. required for graduation.

Students earning a B.S. with a double major in physics and astronomy may count more than 56 s.h. earned in the Department of Physics and Astronomy to the 120 s.h. required for graduation, but they must earn at least 56 s.h. in course work outside the department in order to graduate.

Bachelor of Arts: Physics

The Bachelor of Arts with a major in physics requires a minimum of 120 s.h., including at least 44 s.h. of work for the major (minimum of 24 s.h. in physics plus 20 s.h. in supporting course work). Students must maintain a g.p.a. of at least 2.00 in all courses for the major and in all UI courses for the major. They also must complete the College of Liberal Arts and Sciences General Education Program (p. 313).

The major in physics for the B.A. is designed for students who wish to build a foundation of knowledge in physics but do not plan a research-oriented career in the discipline. It is appropriate for those planning careers in medicine, law, science-related administration, business, or technical writing. It also is good preparation for students interested in secondary school science teaching; see "B.A. or B.S. with Teacher Licensure" below.

The B.A. program requires fewer physics courses than the B.S. program does, giving students a wider choice of electives. Bachelor of Arts students take calculus in addition to physics courses, which include a laboratory. They also take science courses in a thematic area or the physics course work required for teacher licensure, and the department encourages them to do additional work.

The physics major for the Bachelor of Arts requires the following courses or their equivalents. Many upper-level physics courses have prerequisites; students should consult their advisors when choosing courses numbered 3000 or above.

One of these sequences:

PHYS:1701 & PHYS:1702 & PHYS:2703 Physics I-II - Physics III (strongly preferred)
PHYS:1611-PHYS:1612 Introductory Physics I-II

All of these:

PHYS:2704 Physics IV
PHYS:3756 Intermediate Laboratory
MATH:1850 & MATH:1860 Calculus I-II

Three additional physics courses numbered 3000-4999 approved by the advisor, excluding PHYS:4761, PHYS:4762, PHYS:4905, and PHYS:4990

One of these:

Additional science courses in a thematic area, approved by the advisor

The course work required for teacher licensure

B.A. or B.S. with Teacher Licensure

Physics majors interested in earning licensure to teach in elementary and/or secondary schools must complete the College of Education's Teacher Education Program (TEP) in addition to the requirements for the major and all requirements for graduation. The TEP requires several College of Education courses and student teaching. Contact the Office of Education Services for details.

Students must satisfy all degree requirements and complete Teacher Education Program licensure before degree conferral.

Students with a strong interest in science teaching may complete a major offered by the Science Education Program. Students choose one of five emphases—biology, chemistry, earth science, physics, or all-science—and earn a Bachelor of Science degree. They may apply for admission to the Teacher Education Program. See Science Education (p. 788) in the Catalog.

Joint B.A./M.A.T. with Science Education Subprogram

Bachelor of Arts students in physics who are interested in pursuing a graduate degree in teaching may apply to the joint Bachelor of Arts/Master of Arts in Teaching program offered by the College of Liberal Arts and Sciences and the College of Education. Designed for undergraduates majoring in biology, chemistry, environmental sciences, or physics, the joint program enables students to earn a B.A. and an M.A.T. in five years by beginning to earn graduate credit during their fourth year of undergraduate study and by counting up to 18 s.h. of qualifying credit toward both degrees. For more information, see "Joint B.A./M.A.T. with Science Education Subprogram" in the Teaching and Learning (p. 793) (College of Education) section of the Catalog. Interested students should consult an advisor.
Bachelor of Science: Applied Physics

The Bachelor of Science with a major in applied physics requires a minimum of 120 s.h., including at least 59-83 s.h. of work for the major. Total credit required for the major depends on the student’s choice of concentration. Students must maintain a g.p.a. of at least 2.00 in all courses for the major and in all UI courses for the major. They also must complete the College of Liberal Arts and Sciences General Education Program (p. 313).

The major in applied physics is intended primarily for students interested in a broad program of study in physics combined with a significant concentration of courses in a field that has immediate application to industry. The degree provides a foundation for a wide range of employment opportunities in high-technology industries, including research and development, product design and testing, sales, and quality control. It also is designed to include exposure to physics sufficient to allow students to continue with graduate studies in either physics or astronomy.

The major offers four areas of concentration: optics, solid-state electronics, computer science, and medical physics. Students also may design customized concentration areas in close consultation with their advisors and with departmental approval.

An essential component of each concentration is successful completion of a related one-semester internship or practicum experience in a research laboratory (an applied physics thesis is required for the latter option). Well-prepared students will be able to complete the degree in four years. Students should work closely with their advisors on a graduation plan.

All applied physics students complete a common set of courses that includes calculus, linear algebra, physics, and an experiential learning course. They also complete the courses required for their chosen concentration. The department encourages them to take additional course work; advisors can suggest electives that will enrich programs and help students prepare for graduate work.

The major in applied physics requires the following courses. Many upper-level physics courses have prerequisites; students should consult their advisors when choosing courses numbered 3000 or above.

COMMON REQUIREMENTS

Students in all concentrations must successfully complete the following courses or their equivalents.

Mathematics—all of these:

MATH:1850 & MATH:1860 Calculus I-II 8 s.h.
MATH:2700 Introduction to Linear Algebra 4 s.h.
MATH:2850 Calculus III 4 s.h.

Physics—one of these sequences:

PHYS:1701 & PHYS:1702 & PHYS:2703 Physics I-II - Physics III (strongly preferred) 12 s.h.
PHYS:1611-PHYS:1612 Introductory Physics I-Ill 8 s.h.

Physics—all of these:

PHYS:2704 Physics IV 4 s.h.
PHYS:3710 Intermediate Mechanics 3 s.h.

PHYS:3741 Introduction to Quantum Mechanics I
PHYS:3811 Electricity and Magnetism I 3 s.h.

Experiential learning—one of these:

A one-semester industrial internship
A one-semester practicum in a research laboratory (requires an applied physics thesis)

COMPUTER SCIENCE CONCENTRATION

All of these:

PHYS:3730 Statistical Physics 3 s.h.
PHYS:3756 Intermediate Laboratory 3 s.h.
PHYS:3812 Electricity and Magnetism II 3 s.h.
PHYS:3850 Electronics 4 s.h.
CS:1210 Computer Science I: Fundamentals 4 s.h.
CS:2230 Computer Science II: Data Structures 4 s.h.
Two additional computer science courses numbered 3000 or above 6 s.h.

One of these:

CS:2630 Computer Organization 3 s.h.
CS:2820 Object-Oriented Software Development 4 s.h.
CS:3330 Algorithms 3 s.h.

OPTICS CONCENTRATION

All of these:

PHYS:3730 Statistical Physics 3 s.h.
PHYS:3756 Intermediate Laboratory 3 s.h.
PHYS:3812 Electricity and Magnetism II 3 s.h.
PHYS:3850 Electronics 4 s.h.
PHYS:4720 Introductory Optics 3 s.h.

Two of these:

PHYS:4726 Electro Optics 3 s.h.
PHYS:4728 Introductory Solid State Physics 3 s.h.
PHYS:4820 Optical Signal Processing 3 s.h.

SOLID-STATE ELECTRONICS CONCENTRATION

All of these:

PHYS:3730 Statistical Physics 3 s.h.
PHYS:4728 Introductory Solid State Physics 3 s.h.
ECE:2400 Linear Systems I 3 s.h.
ECE:2410 Principles of Electronic Instrumentation 4 s.h.
ECE:3320 Introduction to Digital Design 3 s.h.
ECE:3410 Electronic Circuits 4 s.h.
ENGR:1300 Engineering Problem Solving II 3 s.h.
ENGR:2120 Engineering Fundamentals II: Electrical Circuits 3 s.h.
ENGR:2730 Computers in Engineering 3 s.h.

One of these:

PHYS:3742 Introduction to Quantum Mechanics II 3 s.h.
PHYS:3812 Electricity and Magnetism II 3 s.h.
MEDICAL PHYSICS CONCENTRATION

All of these:

- PHYS:3756 Intermediate Laboratory 3 s.h.
- PHYS:3850 Electronics 4 s.h.
- BIOL:1411:BIOL:1412 Foundations of Biology - Diversity of Form and Function 8 s.h.
- CHEM:1110 & CHEM:1120 Principles of Chemistry I-II 8 s.h.
- CHEM:2210 & CHEM:2220 Organic Chemistry I-II 6 s.h.
- CHEM:2410 Organic Chemistry Laboratory 3 s.h.
- Two additional biology courses numbered 2000 or above 6-8 s.h.

One of these:

- BIOS:5110 Introduction to Biostatistics 3 s.h.
- STAT:3510 Biostatistics 3 s.h.

One of these:

- PHYS:3730 Statistical Physics 3 s.h.
- PHYS:3742 Introduction to Quantum Mechanics II 3 s.h.
- PHYS:3812 Electricity and Magnetism II 3 s.h.
- PHYS:4750 Advanced Laboratory 3 s.h.
- PHYS:4905 Special Topics in Physics (physics of the body) 3 s.h.

Bachelor of Science: Astronomy

The Bachelor of Science with a major in astronomy requires a minimum of 120 s.h., including at least 63 s.h. of work for the major. The program provides balanced and integrated course work in astronomy, mathematics, and physics that prepares students for advanced study in astronomy or astrophysics. It also serves as an interesting choice of major for a liberal arts education.

Bachelor of Science students take calculus and linear algebra in addition to physics and astronomy courses, which include laboratories. Students also must complete the College of Liberal Arts and Sciences General Education Program (p. 313).

The astronomy major for the Bachelor of Science requires the following courses or their equivalents. Required courses ASTR:3771 Introduction to Astrophysics I and ASTR:4850 Astronomical Laboratory are offered every other year; students are responsible for registering for them when they are offered.

MATHEMATICS

All of these:

- MATH:1850 & MATH:1860 Calculus I-II 8 s.h.
- MATH:2700 Introduction to Linear Algebra 4 s.h.
- MATH:2850 Calculus III 4 s.h.

LABORATORIES

This course:

- ASTR:4850 Astronomical Laboratory (offered every other year) 3 s.h.

And one of these:

- PHYS:3756 Intermediate Laboratory 3 s.h.
- PHYS:3850 Electronics 4 s.h.

OTHER REQUIRED COURSES

One of these sequences:

- PHYS:1701 & PHYS:1702 & PHYS:2703 Physics I-II - Physics III (strongly preferred) 12 s.h.
- PHYS:1611-PHYS:1612 Introductory Physics I-II 8 s.h.

All of these:

- ASTR:1771-ASTR:1772 General Astronomy I-II 8 s.h.
- ASTR:3771-ASTR:3772 Introduction to Astrophysics I-II (offered every other year) 6 s.h.
- PHYS:2704 Physics IV 4 s.h.
- PHYS:3710 Intermediate Mechanics 3 s.h.
- PHYS:3741 Introduction to Quantum Mechanics I 3 s.h.
- PHYS:3811-PHYS:3812 Electricity and Magnetism I-II 6 s.h.

One of these:

- PHYS:3742 Introduction to Quantum Mechanics II 3 s.h.
- PHYS:4720 Introductory Optics 3 s.h.
- PHYS:4731 Plasma Physics I 3 s.h.
- PHYS:4740 Elementary Particles and Nuclear Physics 3 s.h.
- PHYS:4761-PHYS:4762 Mathematical Methods of Physics I-II 6 s.h.
- ASTR:4770 Radio Astronomy 3 s.h.

ADDITIONAL COURSE WORK

Undergraduate majors who plan to pursue graduate study are advised to go as far as they can beyond the minimum requirements listed above, by taking one or more of the courses listed below.

- PHYS:3730 Statistical Physics 3 s.h.
- PHYS:3742 Introduction to Quantum Mechanics II 3 s.h.
- PHYS:4720 Introductory Optics 3 s.h.
- PHYS:4731 Plasma Physics I 3 s.h.
- PHYS:4740 Elementary Particles and Nuclear Physics 3 s.h.
- PHYS:4761-PHYS:4762 Mathematical Methods of Physics I-II 6 s.h.
- ASTR:4770 Radio Astronomy 3 s.h.

In planning this work, they should be guided by the College of Liberal Arts and Sciences maximum hours rule: Students earning a B.A. or B.S. may apply a maximum of 56 s.h. earned in one department to the minimum 120 s.h. required for graduation, whether or not the course work is accepted toward requirements for the major; students who earn more than 56 s.h. from one department may use the additional semester hours to satisfy requirements for the major, and the grades they earn become part of their grade-point average; but they cannot apply the additional semester hours to the minimum 120 s.h. required for graduation.

Students earning a B.S. with a double major in physics and astronomy may count more than 56 s.h. earned in the Department of Physics and Astronomy to the 120 s.h. required for graduation, but they must earn at least 56 s.h. in course work outside the department in order to graduate.

Bachelor of Arts: Astronomy

The Bachelor of Arts with a major in astronomy requires a minimum of 120 s.h., including at least 49 s.h. of work for
the major. The B.A. program requires fewer physics and mathematics courses than the B.S. program does, giving students a wider choice of electives.

The program is designed for students who wish to build considerable knowledge in astronomy but do not plan a research-oriented career in the field. It is appropriate for students planning careers in secondary school science teaching or science-related administration; see Science Education (p. 788) (College of Education) in the Catalog. It also is appropriate for those planning to earn professional degrees.

Bachelor of Arts students take calculus in addition to physics and astronomy courses, which include laboratories. Students also must complete the College of Liberal Arts and Sciences General Education Program (p. 313).

The astronomy major for the Bachelor of Arts requires the following courses or their equivalents.

One of these sequences:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS:1701 &amp; PHYS:1702 &amp; PHYS:2703 Physics I-II - Physics III (strongly preferred)</td>
<td>12 s.h.</td>
</tr>
<tr>
<td>PHYS:1611-PHYS:1612 Introductory Physics I-II</td>
<td>8 s.h.</td>
</tr>
</tbody>
</table>

All of these:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASTR:1771-ASTR:1772 General Astronomy I-II</td>
<td>8 s.h.</td>
</tr>
<tr>
<td>ASTR:3771-ASTR:3772 Introduction to Astrophysics I-II</td>
<td>6 s.h.</td>
</tr>
<tr>
<td>ASTR:4850 Astronomical Laboratory</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>PHYS:2704 Physics IV</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>PHYS:3710 Intermediate Mechanics</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>PHYS:3756 Intermediate Laboratory</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>MATH:1850 &amp; MATH:1860 Calculus I-II</td>
<td>8 s.h.</td>
</tr>
</tbody>
</table>

One of these:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS:3730 Statistical Physics</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>PHYS:4720 Introductory Optics</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

One of these:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS:3811 Electricity and Magnetism I (requires MATH:2850 as prerequisite)</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>PHYS:3850 Electronics</td>
<td>4 s.h.</td>
</tr>
</tbody>
</table>

**B.A.: Astronomy**

**Before the third semester begins:** math through calculus I-II and physics I-II

**Before the fifth semester begins:** physics III-IV and at least one more course in the major

**Before the seventh semester begins:** three more courses in the major and at least 90 s.h. earned toward the degree

**Before the eighth semester begins:** nine courses in the major

**During the eighth semester:** enrollment in all remaining course work in the major, all remaining General Education courses, and a sufficient number of semester hours to graduate

**B.S.: Astronomy**

**Before the third semester begins:** calculus I-II and physics II

**Before the fifth semester begins:** all of the remaining required math courses, physics III-IV, and two other courses in the major

**Before the seventh semester begins:** four more courses in the major and at least 90 s.h. earned toward the degree

**Before the eighth semester begins:** three more courses in the major

**During the eighth semester:** enrollment in all remaining course work in the major, all remaining General Education courses, and a sufficient number of semester hours to graduate

**B.A.: Physics**

**Before the third semester begins:** calculus II and physics II

**Before the fifth semester begins:** physics III-IV and up to four more courses in the major

**Before the seventh semester begins:** two to four more courses in the major and at least 90 s.h. earned toward the degree

**Before the eighth semester begins:** two or three more courses in the major

**During the eighth semester:** enrollment in all remaining course work in the major, all remaining General Education courses, and a sufficient number of semester hours to graduate

**B.S.: Physics**

**Before the third semester begins:** calculus II and physics II

**Before the fifth semester begins:** physics III-IV, introduction to linear algebra, calculus III, and up to two more courses in the major

**Before the seventh semester begins:** two to four more courses in the major and at least 90 s.h. earned toward the degree

**Before the eighth semester begins:** two or three more courses in the major

**During the eighth semester:** enrollment in all remaining course work in the major, all remaining General Education courses, and a sufficient number of semester hours to graduate

**Four-Year Graduation Plan**

The following checkpoints list the minimum requirements students must complete by certain semesters in order to stay on the University’s Four-Year Graduation Plan. (Courses in the major are those required to complete the major; they may be offered by departments other than the major department.)
Education courses, and a sufficient number of semester hours to graduate

**B.S.: Applied Physics**

**Before the third semester begins:** calculus II and physics II

**Before the fifth semester begins:** physics III-IV, introduction to linear algebra, calculus III, one more course in the major, and up to four courses in another science or engineering department

**Before the seventh semester begins:** two to four more courses in the major, up to three other science or engineering courses, and at least 90 s.h. earned toward the degree

**Before the eighth semester begins:** two or three more courses in the major or other science or engineering courses and all or part of an academic year research experience or a summer research experience or internship as approved by the applied physics coordinator

**During the eighth semester:** enrollment in all remaining course work in the major, all remaining General Education courses, and a sufficient number of semester hours to graduate

**Honors in the Major**

Students majoring in physics, applied physics, or astronomy have the opportunity to graduate with honors in their major. Departmental honors students must maintain a University of Iowa g.p.a. of at least 3.33. To graduate with honors in the major, they must earn 6-8 s.h. in PHYS:4999 Undergraduate Research during their junior and senior years and conduct an investigation under the guidance of a faculty member. They must present a written report of their research (honors thesis) and describe their research results at a departmental seminar. Departmental honors students must be members of the University of Iowa Honors Program, which requires students to maintain a cumulative University of Iowa g.p.a. of at least 3.33 and to fulfill other requirements; visit Honors at Iowa to learn about the University’s honors program.

**Minor: Physics**

The minor in physics requires a minimum of 15 s.h. in physics, including 12 s.h. taken at the University of Iowa. Students must maintain a g.p.a. of at least 2.00 in all courses for the minor. Course work in the minor may not be taken pass/nonpass. Remaining work may be chosen from any astronomy or physics courses numbered 3000 or above. Most University of Iowa courses for the minor have prerequisites; students must complete a course’s prerequisites before they may enroll in the course.

**Graduate Programs of Study**

- Master of Science in physics
- Master of Science in astronomy
- Doctor of Philosophy in physics (with optional subprogram in astronomy)

Graduate study in physics and astronomy is highly individualized. The department does not offer a Ph.D. in astronomy, but students may pursue a Ph.D. in physics with a subprogram and dissertation in astronomy.

Each entering graduate student is assigned a faculty advisor, who assists in preparing a plan of study and in guiding the student’s progress. All graduate students who intend to pursue a Ph.D. in physics must pass the qualifying exam (see "Doctor of Philosophy: Physics").

In addition to offering graduate degree programs, the Department of Physics and Astronomy participates in an interdisciplinary doctoral program, the Program in Applied Mathematical and Computational Sciences (p. 925) (Graduate College).

**Master of Science: Physics**

The Master of Science program in physics requires a minimum of 30 s.h. of graduate credit. It is offered with thesis or critical essay. The M.S. with thesis requires a thesis based on an original experimental or theoretical investigation by the student. The M.S. with critical essay requires a critical essay on the literature of a particular area of physics.

The M.S. may be a terminal degree or a step toward a Ph.D. In either case, the final examination is oral, conducted by a committee of three faculty members.

Each student’s plan of study should provide for as much advanced work as his or her aptitude and previous preparation permit. Up to one-third of the program of study may be taken in related scientific fields other than physics (e.g., mathematics, chemistry, astronomy, geology, engineering).

All master’s degree students in physics must earn the required 30 s.h. of graduate credit in courses numbered 4000 or above, with at least 15 s.h. in courses numbered 5000 or above. They must maintain a g.p.a. of at least 3.00.

Students who choose the thesis option must write a thesis based on an original experimental or theoretical investigation that they have conducted. Students may
earn a maximum of 6 s.h. in PHYS:7990 Research: Physics or PHYS:7992 Individual Critical Study.

Students who choose the critical essay option must conduct an independent study of the literature on a chosen topic and write a critical essay on that topic. Students may earn a maximum of 4 s.h. in PHYS:7990 Research: Physics or PHYS:7992 Individual Critical Study.

**Master of Science: Astronomy**

The Master of Science program in astronomy requires a minimum of 30 s.h. of graduate credit. It is offered either with or without thesis. The M.S. may be a terminal degree or a step toward a Ph.D. in physics with specialization in astronomy or astrophysics. In either case, the final examination is oral, conducted by a committee of three faculty members.

Up to one-third of the program of study may be taken in related scientific fields (e.g., meteorology, geology, electrical engineering); selection of such courses is encouraged.

All M.S. students in astronomy must maintain a g.p.a. of at least 3.00. Seminars do not count toward the minimum of 30 s.h. required for the degree.

Students in the thesis program earn the required 30 s.h. in courses numbered 4000 or above, with at least 15 s.h. in courses numbered 5000 or above. Thesis students must earn at least 6 s.h. in the following courses.

- ASTR:6785 The Interstellar Medium 3 s.h.
- ASTR:6790 Stellar Astrophysics 3 s.h.
- ASTR:7775 Special Topics in Astrophysics 1-3 s.h.

Thesis students may earn a maximum of 6 s.h. in PHYS:7992 Individual Critical Study and ASTR:7991 Research: Astronomy.

Students in the nonthesis program must maintain a g.p.a. of at least 3.00 in core graduate courses. They must earn 18 s.h. in the following core graduate courses.

- ASTR:6785 The Interstellar Medium 3 s.h.
- ASTR:6790 Stellar Astrophysics 3 s.h.
- ASTR:7775 Special Topics in Astrophysics 1-3 s.h.
- PHYS:5710 Classical Mechanics 3 s.h.
- PHYS:5781 Classical Electrodynamics I 3 s.h.
- PHYS:5812 Classical Electrodynamics II 3 s.h.

Nonthesis students may earn a maximum of 4 s.h. in PHYS:7992 Individual Critical Study and ASTR:7991 Research: Astronomy.

**Doctor of Philosophy: Physics**

The Doctor of Philosophy program in physics requires a minimum of 72 s.h. of graduate credit. For students interested in doing doctoral work in astronomy, the department offers an optional astronomy subprogram, including dissertation, within the Ph.D. program in physics.

Graduate students who wish to pursue a Ph.D. in physics must pass a qualifying examination in all principal areas of physics at the level of advanced undergraduate work. The examination, which may be repeated only once, is given each year before the beginning of the spring semester.

Students must pass the qualifying examination before the beginning of their fourth semester of graduate work at the University of Iowa. Students with high scores on the Graduate Record Exam (GRE) subject test in physics may be exempt from this requirement.

All Ph.D. students must take comprehensive examinations; participate in advanced seminars; do original research in experimental physics, theoretical physics, or astrophysics; and prepare and defend a written dissertation based on this work.

The program of study for the Ph.D. in physics includes thorough course work in both classical and quantum physics for all students, whether their specialized research is in an experimental or a theoretical area.

All Ph.D. students in physics must earn at least 24 s.h. in departmental courses numbered 5000 or above. They may not count credit earned in PHYS:7990 Research: Physics, PHYS:7992 Individual Critical Study, ASTR:7991 Research: Astronomy, or seminars.

Ph.D. students in physics without the astronomy subtrack must complete the following courses.

<table>
<thead>
<tr>
<th>Course</th>
<th>S.H.</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS:4761-PHYS:4762 Mathematical Methods of Physics I-II (students who pass a written examination are exempt from this requirement)</td>
<td>6 s.h.</td>
</tr>
<tr>
<td>PHYS:5710 Classical Mechanics</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>PHYS:5730 Statistical Mechanics I</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>PHYS:5741-PHYS:5742 Quantum Mechanics I-II</td>
<td>6 s.h.</td>
</tr>
<tr>
<td>PHYS:5811-PHYS:5812 Classical Electrodynamics I-II</td>
<td>6 s.h.</td>
</tr>
</tbody>
</table>

These courses freely use advanced mathematics (e.g., complex variables, tensor analysis). An introduction is provided in PHYS:4761 and PHYS:4762. The selection of less advanced course work depends on the adequacy of a student's preparation for graduate work; students' choice of more advanced and specialized courses depends on the direction in which their interests develop.

Ph.D. students in physics with the optional subprogram in astronomy must complete a total of six courses from the following two lists.

**Four of these:**

- ASTR:6781 Galactic Astronomy 3 s.h.
- ASTR:6782 Extragalactic Astronomy 3 s.h.
- ASTR:6785 The Interstellar Medium 3 s.h.
- ASTR:6790 Stellar Astrophysics 3 s.h.
- ASTR:6870 Radiative Processes in Astrophysics 3 s.h.
- ASTR:6880 High Energy Astrophysics 3 s.h.
- ASTR:7830 Space and Astrophysical Plasma Physics 3 s.h.
- PHYS:7760 General Relativity and Cosmology 3 s.h.

**Two of these (total of 6 s.h.):**

- PHYS:5710 Classical Mechanics 3 s.h.
- PHYS:5730 Statistical Mechanics I 3 s.h.
- PHYS:5741-PHYS:5742 Quantum Mechanics I-II 6 s.h.
- PHYS:5811-PHYS:5812 Classical Electrodynamics I-II 6 s.h.

After a Ph.D. student has chosen a research specialty, he or she must submit a formal thesis proposal and defend the proposal in an oral comprehensive exam. The appropriate thesis advisor then becomes the candidate's general advisor and the chair of the comprehensive and
final examination committee. The comprehensive exam must be taken before the beginning of the fourth year of graduate study.

Ph.D. candidates are not recommended for the degree until they have written the dissertation in proper form for formal publication and have submitted it for publication, with the approval of the research advisor, to a widely distributed, refereed scientific journal.

**Admission**

Applicants must meet the admission requirements of the Graduate College; see the Manual of Rules and Regulations of the Graduate College.

**Financial Support**

Students qualified for graduate study are encouraged to apply for fellowships and assistantships. Contact the Department of Physics and Astronomy chair.

**Research, Facilities**

The department has an excellent library and a number of well-equipped laboratories and observatories, as well as a student computer cluster for which students can obtain accounts. Faculty, students, and staff access national supercomputers via the Internet. The central machine shop is fully equipped and staffed by skilled instrument makers and machinists, and there are electronics and machine shops for use by advanced students and research staff.

Experimental research is conducted in astronomy (optical, radio, and X-ray), atomic and molecular physics, condensed matter physics, elementary particle physics, laser physics, medical physics, plasma physics, and space physics. Extensive facilities are available for construction of specialized research equipment and for data processing and analysis.

State-of-the-art semiconductor materials and devices are grown in two molecular beam epitaxy machines. Ultrafast laser techniques are developed and used to probe electron transport, energy relaxation, recombination, and spin dynamics in the novel nanostructures grown in these machines. Experiments also are conducted on laser-induced coherent phenomena and coherent control of charge carriers in semiconductor nanostructures. The experimental condensed matter program is closely coordinated with the condensed matter theory group.

Plasma physics is an active area of experimental and theoretical research. Laboratory experiments studying plasma processes of importance in various space and astrophysical plasmas are performed in a Q machine, including experiments on waves and instabilities in dusty plasmas. Additional laboratory and microgravity experiments with dusty plasmas include studies of Coulomb crystals, shocks, and complex fluids. Glow discharges for plasma processing applications are studied using laser diagnostics and numerical simulations. Wave propagation and plasma particle dynamics also are studied in collisionless plasmas through laboratory experiments. Laser techniques are developed for measuring plasma flow and following particle orbits. Plasma theory efforts include analytical and numerical investigations of magnetic reconnection and turbulence in space and astrophysical plasmas; collaboration with laboratory and space plasma experimental groups in strongly coupled dusty plasmas, waves, and instabilities; and free electron lasers and hydrodynamic turbulence.

State-of-the-art laser systems are available for high-resolution spectroscopic measurement and ultrafast studies of molecular structure, for collisional relaxation and nonlinear optical effects in atomic and molecular systems, and for plasma diagnostics.

Experimental research in elementary particle physics is carried out at Fermi National Accelerator Laboratory, Stanford Linear Accelerator Center, CERN in Switzerland, and other international laboratories. The present generation of high-energy experiments has been designed to probe both the strong nuclear force and the weak interactions.

The department is well-equipped for research and instruction in observational astronomy. The primary optical instrument is a fully automated 15-inch telescope at a dark-sky site in Arizona. The telescope is equipped with CCD cameras and a variety of filters. There are 3-meter and 4.5-meter radio telescopes on the roof of Van Allen Hall, which are used for instruction and student research projects.

Research programs in galactic and extragalactic radio astronomy are carried out using the facilities of the National Radio Astronomy Observatory, including the Very Large Array and the Very Long Baseline Array, one element of which is 10 miles north of campus. Current long-term research activities include studies of the center of the Milky Way galaxy; investigations of extragalactic radio sources; the formation of powerful winds in young, luminous stars; radio-wave scattering in the interstellar and interplanetary media; and interacting binary stars. A research program in X-ray astronomy has been established, and there is a laboratory for instrument development. Research topics in X-ray astronomy concentrate on observations of X-ray emission from black holes and supernova remnants, using existing spacecraft.

Active theoretical research is carried on in astrophysics; atomic, molecular, and optical physics; condensed matter physics; elementary particle physics; laser physics; mathematical physics; nuclear physics; plasma physics; and space physics. An active mathematical physics seminar fosters the exchange of ideas between mathematics and physics.

The primary emphasis of Iowa's program in experimental and theoretical space physics is on studies of cosmic and heliospheric physics, magnetospheric physics, and magnetosphere-ionosphere interactions. Facilities are available for designing and constructing spaceflight instruments. Investigators in the department have flown instruments for studying plasmas, energetic charged particles, auroral images, plasma waves, and radio emissions on a wide variety of terrestrial and planetary spacecraft, including Pioneer 10 and 11, Dynamics Explorer, Voyager 1 and 2, Galileo, Polar, Cassini, and Mars Express.

**Courses**

The Department of Physics and Astronomy offers a number of courses approved for the Natural Sciences requirement of the College of Liberal Arts and Sciences General Education Program. Look for courses with prefixes ASTR and PHYS under "Natural Sciences" in the General Education Program (p. 313) section of the Catalog.
Physics, Lower-Level Undergraduate

**PHYS:1000 First-Year Seminar** 1 s.h.
Small discussion class taught by a faculty member; topics chosen by instructor; may include outside activities (e.g., films, lectures, performances, readings, visits to research facilities). Requirements: first- or second-semester standing.

**PHYS:1100 From Quarks to Quasars** 3-4 s.h.
Conceptual explanation of the latest discoveries in physics—from the smallest objects, such as quarks and atoms, to the largest, such as galaxies, black holes, and quasars. Requirements: nonscience major. GE: Natural Sciences without Lab; Natural Sciences with Lab.

**PHYS:1200 Physics of Everyday Experience** 3 s.h.
Principles of physics for nonscience majors; basic motion, behavior of fluids, waves, temperature and heat, gravity and planetary motion, electricity and magnetism, optics, nuclear energy, radioactivity, and medical imaging technology; examples from everyday experience. GE: Natural Sciences without Lab.

**PHYS:1300 Nanoscience** 3 s.h.
Properties of very small materials and structures; unique properties emerging at a length scale of one billionth of a meter, or one nanometer. GE: Natural Sciences without Lab.

**PHYS:1400 Basic Physics** 3-4 s.h.
Quantitative treatment of mechanics, electricity, heat, liquids, gases, and atomic, nuclear, and elementary particle physics. Prerequisites: MATH:1010. Requirements: closed to students who have taken PHYS:1511 or PHYS:1512 or PHYS:1611 or PHYS:1612. GE: Natural Sciences without Lab; Natural Sciences with Lab.

**PHYS:1410 Physics of Sound** 3-4 s.h.
Acoustical foundations of music; production of sound by vibrating objects, properties of sound waves, vocal acoustics, hearing, room acoustics, principles of electroacoustics. GE: Natural Sciences without Lab; Natural Sciences with Lab.

**PHYS:1511 College Physics I** 4 s.h.
Mechanics, waves, thermodynamics, special relativity. Prerequisites: MATH:1010. GE: Natural Sciences with Lab.

**PHYS:1512 College Physics II** 4 s.h.
Continuation of PHYS:1511; electricity, magnetism, light, modern physics. Prerequisites: PHYS:1511. GE: Natural Sciences with Lab.

**PHYS:1611 Introductory Physics I** 4 s.h.

**PHYS:1612 Introductory Physics II** 3-4 s.h.
Continuation of PHYS:1611; electricity, magnetism, light. Prerequisites: PHYS:1611. Corequisites: MATH:1560 or MATH:1860. GE: Natural Sciences without Lab; Natural Sciences with Lab.

**PHYS:1619 Introductory Physics II Lab** 1 s.h.
Laboratory for PHYS:1612. Requirements: 3 s.h. in PHYS:1612. GE: Natural Sciences Lab only.

**PHYS:1701 Physics I** 4 s.h.
Newtonian mechanics for point particles and rigid bodies; conservation laws. Offered fall semesters. Corequisites: MATH:1850. Requirements: physics or astronomy major. GE: Natural Sciences with Lab.

**PHYS:1702 Physics II** 4 s.h.

**PHYS:1999 Undergraduate Seminar** arr.
Selected topics in physics and astronomy; discussion, presentations.

**PHYS:2703 Physics III** 4 s.h.
Continuation of PHYS:1702; electromagnetic waves, optics; mechanical and sound waves; thermal physics. Offered fall semesters. Prerequisites: PHYS:1702.

**PHYS:2704 Physics IV** 3-4 s.h.
Introduction to quantum mechanics and other topics in modern physics, including special relativity, atomic and solid state physics. Offered spring semesters. Prerequisites: (PHYS:1612 or PHYS:2703) and MATH:1860. Requirements: for 3 s.h. option — nonmajor.

**PHYS:2990 Reading in Physics** arr.
Selected topics in physics.

Physics, Upper-Level Undergraduate and Graduate

**PHYS:3710 Intermediate Mechanics** 3 s.h.
Newtonian mechanics; noninertial reference systems; central forces, celestial mechanics; rigid body motion; Lagrangian, Hamiltonian equations of motion; small oscillations. Prerequisites: (PHYS:1511 or PHYS:1611 or PHYS:1701) and MATH:1860.

**PHYS:3730 Statistical Physics** 3 s.h.
Integrated introduction to subjects of thermodynamics, statistical mechanics, kinetic theory; emphasis on applications. Prerequisites: PHYS:2704 and PHYS:3710.

**PHYS:3741 Introduction to Quantum Mechanics I** 3 s.h.
Superposition principle, Stern-Gerlach experiment, linear operators, measurement theory, time evolution, angular momentum, wave mechanics in one dimension, one-dimensional harmonic oscillator, two-body problems with central forces, the hydrogen atom. Prerequisites: PHYS:2704 and PHYS:3710 and MATH:2700 and MATH:2850.

**PHYS:3742 Introduction to Quantum Mechanics II** 3 s.h.
Perturbation theory, variational methods, WKB approximation, scattering, Helium atom, periodic table, atomic spectroscopy, transition rates, other selected applications. Prerequisites: PHYS:3741.

**PHYS:3750 Fundamentals of Micro and Nanofabrication** 3 s.h.
Fundamentals of micro- and nano-fabrication processes; physical principles of photo and electron beam lithography, alternative nano-lithography techniques, thin film deposition, molecular beam epitaxy, atomic layer deposition, self-assembly; metrology methods; physical and chemical processes of wet and plasma etching; cleanroom science, operations, safety protocols; sequential micro- and nano-fabrication processes involved in manufacture of semiconductor, photonics, nanoscale devices; imaging and characterization of micro- and nano-structures; scientific and technological applications of emerging micro- and nano-devices and systems. Prerequisites: PHYS:1511 or PHYS:1512 or PHYS:1611 or BIOL:1141 or CHEM:1060 or CHEM:1110 or CH:1120. Requirements: undergraduate lab course in chemistry, biology, physics, or engineering. Same as OSTC:3750.

**PHYS:3756 Intermediate Laboratory** 3 s.h.
Electricity; electronics; magnetism; optics; atomic, nuclear, solid state physics; techniques in data analysis, including error analysis. Prerequisites: PHYS:1512 or PHYS:1702 and PHYS:2703. Corequisites: PHYS:3811.

**PHYS:3811 Electricity and Magnetism I** 3 s.h.
Electrostatics, magnetic fields, introduction to Maxwell's equations. Prerequisites: PHYS:1511 or PHYS:1612 or PHYS:1702 and MATH:2850.

**PHYS:3812 Electricity and Magnetism II** 3 s.h.
Continuation of PHYS:3811; magnetism, electromagnetic waves, A.C. circuits, applications of Maxwell's equations to wave guides, antennas, optics, plasma physics, other topics. Prerequisites: PHYS:3811.

**PHYS:3850 Electronics** 4 s.h.
Design and construction of small circuits; use of measurement instruments—oscilloscope, multimeter, function generator; circuits, including transistors, operational amplifiers, digital, analog-to-digital conversion. Prerequisites: PHYS:1512 or PHYS:1612 or PHYS:1702. Requirements: physics or astronomy major.

**PHYS:4720 Introductory Optics** 3 s.h.
Geometrical and physical optics; interference; diffraction; polarization; microscopic origins of macroscopic optical properties of matter; optical activity; electro-optical, magneto-optical, acousto-optical phenomena; spontaneous Brillouin, Raman, Rayleigh scattering. Prerequisites: PHYS:3812. Same as ECE:4720.

**PHYS:4726 Electro Optics** 3 s.h.
Wave equation solutions; optical birefringence; finite beam propagation in free space, dielectric waveguides and fibers; optical resonators; nonlinear phenomena; electro-optic, acousto-optic modulation; optical detection, noise; application to communication systems. Requirements: for ECE:5790 — ECE:3700; for PHYS:4726 — PHYS:3812. Same as ECE:5790.

**PHYS:4728 Introductory Solid State Physics** 3 s.h.
Phenomena associated with solid state; classification of solids and crystal structures, electronic and vibrational properties in solids; thermal, optical, magnetic, dielectric properties of solids. Prerequisites: MATH:2850 and PHYS:3741. Same as ECE:4728.

**PHYS:4731 Plasma Physics I** 3 s.h.
Physics of ionized gases, including orbit theory, guiding center motion, adiabatic invariants, ionization balance; description of plasmas by fluid variables and distribution functions; linearized wave motions, instabilities; magnetohydrodynamics. Prerequisites: PHYS:3812.

**PHYS:4740 Elementary Particles and Nuclear Physics** 3 s.h.
Accelerators, particle detectors, passage of radiation through matter; nuclear structure, nuclear reactions; quark model of hadrons; strong, electromagnetic, weak interactions of elementary particles; gauge theories, intermediate vector bosons; unification of electromagnetic and weak interactions. Prerequisites: PHYS:3741.

**PHYS:4750 Advanced Laboratory** 3 s.h.
Topics in electricity; electronics; magnetism; atomic, nuclear, plasma, solid state physics; techniques in data analysis, including error analysis. Prerequisites: MATH:2850.

**PHYS:4761 Mathematical Methods of Physics I** 3 s.h.
Functions of complex variables, integration methods, linear vector spaces, tensors, matrix algebra. Prerequisites: MATH:2850.

**PHYS:4762 Mathematical Methods of Physics II** 3 s.h.
Continuation of PHYS:4761; Hilbert space, special functions, Fourier transform and expansions in orthogonal polynomials, differential equations, Green's functions. Prerequisites: PHYS:4761.

**PHYS:4820 Optical Signal Processing** 3 s.h.
Linear systems description of optical propagation; diffraction and angular plane wave spectrum; lenses as Fourier transformers, lens configurations as generalized optical processors; lasers, coherence, spatial frequency analysis; holography; convolvers, correlators, matched filters; synthetic aperture radar; optical computing. Requirements: for ECE:5780 — ECE:3700; for PHYS:4820 — PHYS:3812. Same as ECE:5780.

**PHYS:4860 Computational Physics** 3 s.h.
Introduction to contemporary use of computers by physicists; topics such as numerical solutions of ordinary differential equations in classical mechanics, boundary value problems in electricity and magnetism, eigenvalue problems in quantum mechanics, Monte Carlo simulations in statistical mechanics, methods of data analysis. Prerequisites: PHYS:3710 and PHYS:3741 and PHYS:3811.

**PHYS:4905 Special Topics in Physics** arr.
Selected topics in physics.

**PHYS:4990 Reading in Physics** arr.
PHYS:4999 Undergraduate Research  
Supervised research leading to written report or oral presentation.

Physics, Graduate

PHYS:5000 Workshops and Special Training in Physics  
Workshops and special training opportunities for postbaccalaureate students; may include collaborations with other departments, institutions, or externally funded research organizations.

PHYS:5710 Classical Mechanics  
Dynamics of mass points; Lagrange multipliers, small oscillations, Hamilton's equations; canonical transformations, Hamilton-Jacobi theory; chaos. Prerequisites: PHYS:3710.

PHYS:5729 Fluid Mechanics  
Basic equations of fluid mechanics and solutions of these equations for various cases of special interest; compressible and incompressible flows in two- and three-dimensions, rotational and irrotational flows, self-similar solutions, instabilities, turbulence; relate solutions to application of general interest to physicist and engineers; subsonic and supersonic flows around wings and bodies, gravity waves in oceans and atmospheres, transition to supersonic flow in a rocket nozzle, supersonic outflow of gas from the Sun and other stars, and physics of high energy explosions. Prerequisites: PHYS:3710. Requirements: knowledge of vector calculus at level used in PHYS:3811 and PHYS:3812.

PHYS:5730 Statistical Mechanics I  
Probability concepts; kinetic equations; classical and quantum equilibrium statistical mechanics with applications, including ideal and imperfect gases and phase transitions, irreversible processes, fluctuation-dissipation theorems. Prerequisites: PHYS:3730 and PHYS:3741.

PHYS:5741 Quantum Mechanics I  
Nonrelativistic quantum mechanics, Schrödinger wave mechanics, Hilbert space methods, perturbation theory, scattering, spin and angular momentum, identical particles, selected applications, introduction to relativistic theory. Prerequisites: PHYS:3741 and PHYS:3742.

PHYS:5742 Quantum Mechanics II  
Continuation of PHYS:5741. Prerequisites: PHYS:5741.

PHYS:5811 Classical Electrodynamics I  
Advanced electromagnetostatics, boundary value problems, Green's functions, Maxwell's equations, radiation theory, physical optics, multiple expansion of radiation field. Prerequisites: PHYS:3812.

PHYS:5812 Classical Electrodynamics II  
Special relativity, motion of charges in fields, theories of radiation reaction, special topics. Prerequisites: PHYS:5811.

PHYS:6710 Nonlinear Dynamics  
Deterministic approach of turbulence and chaotic dynamical systems; qualitative theory of ordinary differential equations, perturbation in classical mechanics, ergodicity, bifurcation, universal properties of discrete maps, intermittency, fractals, quantitative characterizations of chaos.

PHYS:6720 Nonlinear Optics  

PHYS:6726 Laser Principles  

PHYS:6822 Topics in Quantum Electronics  
Quantum optics, optical properties of matter, laser science, photonics.

PHYS:7270 Ethics in Physics for Graduate Students  
Responsible conduct and ethics training.

PHYS:7604 Ethics in Physics for Postdocs  
Responsible conduct and ethics training.

PHYS:7720 Semiconductor Physics  
Electronic, optical, and materials properties of semiconductors. Prerequisites: PHYS:4728 and PHYS:5742. Same as ECE:7720.

PHYS:7725 Special Topics in Condensed Matter  
Current topics, such as superconductivity and magnetism. Prerequisites: PHYS:7820.

PHYS:7729 Plasma Physics II  
Continuation of PHYS:4731; cold plasma waves, MHD stability, kinetic theory of plasmas, including Landau damping and velocity space instabilities; nonlinear evolution. Prerequisites: PHYS:4731.

PHYS:7730 Advanced Plasma Physics I  
Microscopic plasma behavior: statistical mechanics of plasmas; Liouville equation; BBGKY hierarchy; Fokker-Planck equation and relaxation processes; Balescu-Lenard equation; Vlasov equation and linearized wave motion; shocks, nonlinear plasma motions, and instabilities; fluctuations and radiation processes; topics from recent literature.

PHYS:7740 Introduction to Quantum Field Theory  
3 s.h.
Quantization of relativistic and nonrelativistic field theories, covariant perturbation theory, theory of renormalization, dimensional regularization, renormalization group theory, introduction to gauge theories and anomalies. Prerequisites: PHYS:5742.

**PHYS:7745 Special Topics in Quantum Mechanics**
arrr.  
Current topics in quantum mechanics, such as string theory, relativistic quantum mechanics, quantum gravity, axiomatic quantum field theory.

**PHYS:7746 Particle Physics**  
3 s.h.  
Elementary particle properties and phenomenology, quark-parton models, quantum chromodynamics, unified theory of weak and electromagnetic interactions.

**PHYS:7760 General Relativity and Cosmology**  
2-3 s.h.  
Einstein's theory of gravitation; applications to astrophysics and cosmology.

**PHYS:7820 Theoretical Solid State Physics I**  
3 s.h.  
Central principles of the quantum theory of solids; lattice dynamics, electronic structure, optical properties, superconductivity, magnetism; emphasis on viewpoint of elementary excitations. Prerequisites: PHYS:4728 and PHYS:5742.

**PHYS:7840 Quantum Gauge Theories**  
3 s.h.  

**ASTR:1000 First-Year Seminar**  
1 s.h.  
Small discussion class taught by a faculty member; topics chosen by instructor; may include outside activities (e.g., films, lectures, performances, readings, visits to research facilities).

**ASTR:1060 Origins of Life in the Universe (Part 1)**  
3 s.h.  
Fundamental questions (How old is the universe? What is the nature of life? How has life evolved on Earth? What are our human origins? Are there other habitable planets in the universe?) that revolve around understanding origins from different perspectives (i.e., astronomy, physics, geoscience, biology, chemistry, anthropology); work with faculty from several departments to investigate these questions; inquiry-based activities to build success in critical thinking, teamwork, effective written and oral communication; origin of the universe, biochemistry of life, and origin of life on Earth; first of a two-part sequence. Recommendations: first-year or sophomore standing. GE: Natural Sciences without Lab. Same as BIOL:1060, EES:1060.

**ASTR:1061 Origins of Life in the Universe (Part 2)**  
4 s.h.  
Fundamental questions (What is the nature of life? What is evolution and how has life evolved on Earth? What are our human origins? Are there other habitable planets in the universe?) that revolve around understanding origins from different perspectives (astronomy, physics, geoscience, biology, chemistry, anthropology); students work with faculty from several departments to investigate these questions; inquiry-based activities build success in critical thinking, teamwork, and effective written and oral communication; second of a two-part sequence. GE: Natural Sciences with Lab. Same as BIOL:1061, ANTH:1061, EES:1061.

**ASTR:1070 Stars, Galaxies, and the Universe**  
3-4 s.h.  
Survey of stars, galaxies, and the universe; life cycles of stars, including black holes and pulsars; diversity of galaxies, including the Milky Way and distant quasars; cosmology—the history, structure, and fate of the universe; current results from recent astronomical observations; night sky observation. Recommendations: closed to physics and astronomy majors. GE: Natural Sciences without Lab; Natural Sciences with Lab.

**ASTR:1079 Introductory Astronomy Laboratory**  
1 s.h.  
Laboratory for ASTR:1070 or ASTR:1080. GE: Natural Sciences Lab only.

**ASTR:1080 Exploration of the Solar System**  
3-4 s.h.  
Survey of the solar system; physical properties of the planets, comets, and asteroids; origin of the solar system; search for extrasolar planetary systems; search for life in the universe; current results of recent planetary space missions; night sky observation. Recommendations: closed to physics and astronomy majors. GE: Natural Sciences without Lab; Natural Sciences with Lab.
ASTR:1090 Life in the Universe 3 s.h.
Are we alone? Scientific foundations of this question, technology behind searches for extraterrestrial life in the solar system and on extrasolar planets; evolution of life on Earth, likelihood that such conditions exist elsewhere in the universe; cultural consequences of discovering extraterrestrial life. GE: Natural Sciences without Lab.

ASTR:1771 General Astronomy I 4 s.h.
Qualitative and quantitative introduction to the development of astronomy, celestial mechanics, time, electromagnetic radiation, telescopes and astronomical instrumentation, planets, smaller solar system objects; laboratory emphasis on observation with telescopes. Requirements: four years of high school math. GE: Natural Sciences with Lab.

ASTR:1772 General Astronomy II 4 s.h.
Continuation of ASTR:1771; qualitative and quantitative introduction to properties and evolution of sun, stars, interstellar matter, galaxies; cosmology; laboratory emphasis on observation with telescopes. Requirements: four years of high school math. GE: Natural Sciences with Lab.

ASTR:2991 Reading in Astronomy arr.
Selected topics in astronomy.

Astronomy, Upper-Level Undergraduate and Graduate

ASTR:3771 Introduction to Astrophysics I 3 s.h.
Fundamentals of astrophysical processes in solar system objects, stars, nebulae, interstellar medium, galaxies, cosmology; topics include stellar spectra, binary stars, interstellar gas and dust, stellar and galactic kinematics, stellar evolution, HII regions, radiation processes in galaxies and quasars, mathematical descriptions of the universe. Prerequisites: ASTR:1771 and ASTR:1772 and PHYS:2704 and MATH:2700 and MATH:2850. Recommendations: computer programming experience.

ASTR:3772 Introduction to Astrophysics II 3 s.h.
Continuation of ASTR:3771. Prerequisites: ASTR:3771.

ASTR:4770 Radio Astronomy 3 s.h.
Survey of radio astronomy, emphasizing technical aspects; radiation, antennas, receivers, radio spectroscopy, interferometer arrays and aperture synthesis; emission mechanisms, pulsars, supernova remnants, radio galaxies.

ASTR:4850 Astronomical Laboratory 3 s.h.
Techniques and instrumentation in optical and radio astronomy. Prerequisites: ASTR:1771 and ASTR:1772 and PHYS:2704.

ASTR:4906 Special Topics in Astronomy arr.

Astronomy, Graduate

ASTR:6781 Galactic Astronomy 3 s.h.
Structure of the Milky Way galaxy; distance indicators, orbits in the galaxy, spiral structure; evidence for dark matter in the Milky Way, the galactic center; comparison of Milky Way with nearby galaxies.

ASTR:6782 Extragalactic Astronomy 3 s.h.
Normal and active galaxies, large scale structure, the early Universe, cosmology.

ASTR:6785 The Interstellar Medium 3 s.h.
The interstellar medium: optical properties of small interstellar grains, radiative processes in interstellar gas, structure of HII regions, interstellar shock waves, supernova remnants, modification of interstellar medium by luminous stars, molecular clouds.

ASTR:6790 Stellar Astrophysics 3 s.h.
Stellar interiors, nuclear astrophysics; advanced topics.

ASTR:6870 Radiative Processes in Astrophysics 3 s.h.
Physical mechanisms for generation of electromagnetic radiation in astrophysics; continuum mechanisms (bremsstrahlung, Compton scattering, synchrotron radiation); spectral line radiation from atoms, molecules, and nuclei, including fine structure effects; fundamental physics of processes; application to astronomical observations.

ASTR:6880 High Energy Astrophysics 3 s.h.
Detection of X-rays and gamma-rays, analysis of X-ray data, black holes and neutron stars, accretion onto compact objects, pulsars, supernova remnants, cosmic rays, gamma-ray bursts.

ASTR:7775 Special Topics in Astrophysics 1-3 s.h.
Advanced lectures.

ASTR:7830 Space and Astrophysical Plasma Physics 3 s.h.
Dynamics and evolution of space and astrophysical plasmas; heliosphere, planetary magnetospheres, accretion disks; plasma waves, shock waves, turbulence.

ASTR:7970 Seminar: Astrophysics arr.
Current research.

ASTR:7991 Research: Astronomy arr.
Original research in observational, theoretical astronomy.
Political Science

Chair
• Sara Mitchell

Undergraduate majors: political science (B.A., B.S.); international relations (B.A., B.S.)

Undergraduate minors: political science; international relations

Graduate degrees: M.A. in political science; Ph.D. in political science

Faculty: http://clas.uiowa.edu/polisci/people/faculty

Web site: http://clas.uiowa.edu/polisci/

The Department of Political Science offers two undergraduate majors and minors as well as graduate degree programs. It collaborates with other departments to offer the Certificate in Social Science Analytics (p. 571). In addition, it offers several courses that undergraduate students in all majors may use to fulfill General Education Program (p. 313) requirements and a First-Year Seminar designed for entering undergraduate students.

Undergraduate Programs of Study

• Major in political science (Bachelor of Arts, Bachelor of Science)
• Major in international relations (Bachelor of Arts, Bachelor of Science)
• Minor in political science
• Minor in international relations

B.A. and B.S.: Political Science

The Bachelor of Arts with a major in political science requires a minimum of 120 s.h., including 33 s.h. of work for the major (all in political science courses). The Bachelor of Science with a major in political science requires a minimum of 120 s.h., including 44 s.h. of work for the major (33 s.h. in political science courses and 11 s.h. of approved mathematics/statistics courses). Students must maintain a g.p.a. of at least 2.00 in all courses for the major and in all UI courses for the major. In addition, they must maintain a g.p.a. of at least 2.00 in all political science courses taken at the University of Iowa, and in all political science courses taken at other institutions and at the University combined. They also must complete the College of Liberal Arts and Sciences General Education Program (p. 313).

Most of the political science course work required for the major is the same for B.A. and B.S. students, but the major for the B.S. includes a political science research component. The major for the B.S. also requires a set of mathematics/statistics courses, while the major for the B.A. does not.

Students must earn at least 18 s.h. of the political science credit required for the major (33 s.h.) at the University of Iowa. Credit earned in POLI:1000 First-Year Seminar, POLI:3124 Political Science Des Moines Internship Program, and POLI:4900 Government Internship does not count toward the major, but grades in these courses become part of a student's grade-point average.

In planning course work, students should be guided by the College of Liberal Arts and Sciences maximum hours rule: students earning a B.A. or B.S. may apply a maximum of 56 s.h. earned in one department to the minimum 120 s.h. required for graduation, whether or not the course work is accepted toward requirements for the major; students who earn more than 56 s.h. from one department may use the additional semester hours to satisfy requirements for the major (if the department accepts them), and the grades they earn become part of their grade-point average; but they cannot apply the additional semester hours to the minimum 120 s.h. required for graduation.

The major in political science requires the following course work.

POLITICAL SCIENCE COURSES (B.A. AND B.S.)

Introductory course:

POLI:1100 Introduction to American Politics 3 s.h.

Additional introductory courses—four of these:

POLI:1001 Introduction to Politics 3 s.h.
POLI:1002 Lawyers in the American Political System 3 s.h.
POLI:1200 Introduction to Political Behavior 3 s.h.
POLI:1300 Introduction to Political Thought and Action 3 s.h.
POLI:1400 Introduction to Comparative Politics 3 s.h.
POLI:1401 Introduction to the Politics of Russia and Eurasia 3 s.h.
POLI:1403 Introduction to Politics in the Muslim World 3 s.h.
POLI:1500 Introduction to International Relations 3 s.h.

Bachelor of Arts students also complete the following political science course work.

At least six additional political science courses numbered 2000 or above 18 s.h.

It is strongly recommended that students not pursuing the major through online education take at least 12 s.h. in regularly scheduled classroom courses, with a maximum of 3 s.h. of online course work taken at the 3000-level or above.

ADDITIONAL POLITICAL SCIENCE COURSES (B.A.)

Bachelor of Arts students also complete the following political science course work.

At least six additional political science courses numbered 2000 or above 18 s.h.

The following courses do not count toward this requirement.

POLI:3124 Political Science Des Moines Internship Program
POLI:4900 Government Internship

ADDITIONAL POLITICAL SCIENCE COURSES (B.S.)

Advanced courses:
Political science courses numbered 2000 or above 12 s.h.
The following courses do not count toward the 12 s.h.
Poli:3124 Political Science Des Moines Internship Program
Poli:4900 Government Internship
Bachelor of Science students also complete the following political science course work.
Poli:3000 Understanding Political Research 3 s.h.
One of these:
Poli:4600 Honors Research Project 3 s.h.
Poli:4701 Undergraduate Research Tutorial 3 s.h.
Recommended but not required:
Poli:4702 Senior Research Project/Paper 3 s.h.
MATHEMATICS/STATISTICS COURSES (B.S.)
Bachelor of Science students complete one of the following approved sets of mathematics/statistics courses (11 s.h.) with a g.p.a. of at least 2.00. Other sets of courses may be used with written approval of the B.S. program advisor.
Set 1:
Math:1380 Calculus and Matrix Algebra for Business (students may substitute Math:1550 or Math:1850) 4 s.h.
Stat:4143/PSQF:4143 Introduction to Statistical Methods 3 s.h.
Stat:6513 Intermediate Statistical Methods 4 s.h.
Set 2:
Econ:2800 Statistics for Strategy Problems 3 s.h.
Math:1380 Calculus and Matrix Algebra for Business 4 s.h.
Stat:1030 Statistics for Business 4 s.h.
Set 3:
Math:1850 Calculus I (students may substitute Math:1550) 4 s.h.
Math:1860 Calculus II (students may substitute Math:1560) 4 s.h.
Stat:4143/PSQF:4143 Introduction to Statistical Methods 3 s.h.
EMPHASES IN POLITICAL SCIENCE (B.A. AND B.S.)
Students may elect to complete one or two emphases while fulfilling the requirements for the major. The emphasis is indicated on the transcript at graduation if the student completes the emphasis and requests recognition from the department.
Each emphasis consists of four courses. Emphases are available in American institutions, American political practice, international relations, law and politics, identity politics, political communication, political economy, political processes, political theory, politics of democratization, politics of developing areas, and politics of industrial democracies. For lists of courses approved in each area, contact the Department of Political Science.
B.A. and B.S.: International Relations
The Bachelor of Arts with a major in international relations requires a minimum of 120 s.h., including at least 33 s.h. of work for the major. The Bachelor of Science with a major in international relations requires a minimum of 120 s.h., including at least 44 s.h. of work for the major. Students must maintain a g.p.a. of at least 2.00 in all courses for the major and in all UI courses for the major. They also must complete the College of Liberal Arts and Sciences General Education Program (p. 313).
Students must complete a minimum of 18 s.h. of work for the major at the University of Iowa. A maximum of 15 s.h. of approved transfer credit may be applied toward the major.
The major in international relations focuses on economic relations between states, a crucial area of study in today’s globalized world. Students in the major are introduced to the politics of foreign countries. They develop an understanding of how countries interact and acquire a deep appreciation for the root causes of problems that transcend national boundaries.
Students choose one of five tracks: conflict and foreign policy, international business and economic relations, regional politics and relationships, transnational issues, or a self-defined track. Requirements for the major are the same for B.A. and B.S. students, except that the major for the B.S. requires a set of mathematics/statistics courses, while the major for the B.A. does not.
The major in international relations requires the following course work.
INTERNATIONAL RELATIONS CORE (B.A. AND B.S.)
All of these:
Poli:1500 Introduction to International Relations 3 s.h.
Poli:3512 International Conflict 3 s.h.
Poli:3516 The Politics of International Economics 3 s.h.
One of these:
Hist:2403 Western Civilization III 3-4 s.h.
Hist:3143 International Politics: The History of the Present 3-4 s.h.
Hist:3155 The World Since 1945 3 s.h.
METHODS COURSE (B.A. AND B.S.)
Poli:3000 Understanding Political Research 3 s.h.
SENIOR SEMINAR (B.A. AND B.S.)
Poli:4800 Senior Seminar in International Relations 3 s.h.
MATHEMATICS/STATISTICS COURSES (B.S.)
Bachelor of Science students must complete one of the following approved sets of mathematics/statistics courses (11 s.h.) with a g.p.a. of at least 2.00. Substitutions must be approved by the director of undergraduate studies.
Set 1:
MATH:1380 Calculus and Matrix Algebra for Business (or equivalent or higher level calculus course) 4 s.h.
STAT:4143/PSQF:4143 Introduction to Statistical Methods 3 s.h.
STAT:6513 Intermediate Statistical Methods 4 s.h.

Set 2:
ECON:2800 Statistics for Strategy Problems 3 s.h.
MATH:1380 Calculus and Matrix Algebra for Business (or equivalent or higher level calculus course) 4 s.h.
STAT:1030 Statistics for Business 4 s.h.

Set 3:
MATH:1850 Calculus I 4 s.h.
MATH:1860 Calculus II 4 s.h.
STAT:4143/PSQF:4143 Introduction to Statistical Methods 3 s.h.

Tracks (B.A. and B.S.)
International relations students complete one of the following five tracks, each of which requires 15 s.h. of course work. Students who would like to declare the major in international relations before deciding on a track may declare the open track for advising purposes. They should talk with an advisor and decide on a track as soon as possible.

CONFLICT AND FOREIGN POLICY TRACK
The conflict and foreign policy track requires the following course work (minimum of 15 s.h.).

This course:
POLI:1501 Introduction to American Foreign Policy 3 s.h.

Four of these, including at least 6 s.h. of course work offered by each of two departments:

POLI:3126 Environmental Policy 3 s.h.
POLI:3410 Russian Foreign Policy 3 s.h.
POLI:3419 War in the Muslim World 3 s.h.
POLL:3420 Southeast Asia: Democracy, Identity, and Development
POLI:3421 Southern Africa: Development and Governance 3 s.h.
POLL:3422 Transnational Issues and the Horn of Africa
POLI:3423 The Middle East: Policy and Diplomacy 3 s.h.
POLL:3500 American Foreign Policies 3 s.h.
POLL:3503 Politics of Terrorism 3 s.h.
POLL:3505 Causes, Consequences, and Management of Civil War 3 s.h.
POLL:3506 Consequences of War 3 s.h.
POLL:3510 State Failure in the Developing World 3 s.h.
POLL:3514 Regional Peace and Security 3 s.h.
POLL:3518 Water Wars: Conflict and Cooperation 3 s.h.
POLL:3520 National Security Policy 3 s.h.
POLL:3550 Problems of International Politics 3 s.h.
POLL:3603 War and Film arr.
POLL:4500 Honors Seminar on International Politics 3 s.h.
HIST:4105 World Events in Historical Context 3 s.h.
HIST:4125 War and Peace in the Twentieth Century 3 s.h.
HIST:4146 The History of Warfare 3 s.h.
HIST:4176 Vietnam War on Film 3-4 s.h.
HIST:4228 Cold War America 3 s.h.
HIST:4230 The Political Culture of U.S. Foreign Policy 3 s.h.
HIST:4232 United States in World Affairs 3-4 s.h.
HIST:4264 U.S.A. in a World at War 1931-1945 3 s.h.
HIST:4435 War and Society in Modern Europe 3 s.h.
HIST:4499 First World War 3-4 s.h.
HIST:4617 History, Memory, and Pacific War 3 s.h.
HIST:4620 Japan-US Relations 3 s.h.

INTERNATIONAL BUSINESS AND ECONOMIC RELATIONS TRACK
The international business and economic relations track requires the following course work (minimum of 15 s.h.).

Two of these:
ECON:1100 Principles of Microeconomics 4 s.h.
ECON:1200 Principles of Macroeconomics 4 s.h.
GEOG:2910 The Global Economy 3 s.h.

Three of these, including courses from at least two different departments:

POLI:3126 Environmental Policy 3 s.h.
POLL:3400 Introduction to Political Economy 3 s.h.
POLL:3502 Politics and the Multinational Enterprise 3 s.h.
POLL:3504 Globalization 3 s.h.
POLL:4500 Honors Seminar on International Politics 3 s.h.
ECON:3345 Global Economics and Business 3 s.h.
ECON:3620 Economic Growth and Development 3 s.h.
ECON:3625 Environmental and Natural Resource Economics 3 s.h.
ECON:3750 Transportation Economics 3 s.h.
ECON:4110 International Economics 3 s.h.
FIN:4240 International Finance (prerequisite required) 3 s.h.
GEOG:2410 Environment and Development 3 s.h.
GEOG:3070 Hungry Planet: Global Geographies of Food 3 s.h.
GEOG:3910 Geographic Perspectives on Development 3 s.h.
HIST:3126 History of Globalization 3 s.h.
MGMT:3450 International Business Environment 3 s.h.
MKTG:4300 International Marketing (prerequisite required) 3 s.h.
REGIONAL POLITICS AND RELATIONSHIPS TRACK

The regional politics and relationships track requires the following course work (minimum of 15 s.h.).

This course:

- POLI:1400 Introduction to Comparative Politics 3 s.h.
- POLI:1401 Introduction to the Politics of Russia and Eurasia 3 s.h.
- POLI:1403 Introduction to Politics in the Muslim World 3 s.h.
- POLI:2415 Latin American Politics 3 s.h.
- POLI:3401 European Union 3 s.h.
- POLI:3403 Parties and Elections Around the World 3 s.h.
- POLI:3404 Public Policy Around the World 3 s.h.
- POLI:3405 Authoritarian Politics 3 s.h.
- POLI:3407 Chinese Politics and Society 3 s.h.
- POLI:3410 Russian Foreign Policy 3 s.h.
- POLI:3412 Government and Politics of Europe 3 s.h.
- POLI:3413 Russian Politics 3 s.h.
- POLI:3416 France in the 21st Century 3 s.h.
- POLI:3419 War in the Muslim World 3 s.h.
- POLI:3420 Southeast Asia: Democracy, Identity, and Development 3 s.h.
- POLI:3421 Southern Africa: Development and Governance 3 s.h.
- POLI:3422 Transnational Issues and the Horn of Africa 3 s.h.
- POLI:3423 The Middle East: Policy and Diplomacy 3 s.h.
- POLI:3450 Problems in Comparative Politics 3 s.h.
- POLI:3510 State Failure in the Developing World 3 s.h.
- POLI:3514 Regional Peace and Security 3 s.h.
- POLI:4400 Honors Seminar on Comparative Politics 3 s.h.
- HIST:1008 Issues in European Politics and Society 3 s.h.
- HIST:2602 Civilizations of Asia: China 3 s.h.
- HIST:2604 Civilizations of Asia: Japan 3-4 s.h.
- HIST:2606 Civilizations of Asia: South Asia 3-4 s.h.
- HIST:2607 Civilizations of Asia: Korea 3-4 s.h.
- HIST:2708 Civilizations of Africa 3 s.h.
- HIST:3145 Europe and the U.S. in the Twentieth Century 3 s.h.
- HIST:4289 The Atlantic World c. 1450-1850 3 s.h.
- HIST:4460 Twentieth-Century Europe: The Nazi Era 3 s.h.
- HIST:4464 Modern France 1789-1871 3 s.h.
- HIST:4465 Modern France 1870-Present 3 s.h.
- HIST:4475 Germany Since 1914: Weimar, Hitler, and After 3-4 s.h.
- HIST:4486 Modern Britain: The Twentieth Century 3 s.h.
- HIST:4493 Soviet Union 1917-1945 3-4 s.h.
- HIST:4501 Society and Revolution in Cuba 3 s.h.
- HIST:4502 History of Mexico 3 s.h.
- HIST:4515 Introduction to Modern Latin America 3 s.h.
- HIST:4525 Latin American Revolution 3 s.h.
- HIST:4615 Modern Japan 3 s.h.
- HIST:4640 Imperialism and Modern India 3 s.h.
- HIST:4655 China Since 1927 3 s.h.
- HIST:4666 Topics in Asian History 3 s.h.
- HIST:4685 Modern Korean History 3 s.h.
- HIST:4715 African History Since 1880 3 s.h.
- HIST:4810 History of the Modern Middle East 3 s.h.
- HIST:4815 Topics in the Modern Middle East 3 s.h.

TRANSNATIONAL ISSUES TRACK

The transnational issues track requires the following course work (minimum of 15 s.h.).

At least five of these, including 3 s.h. of credit in courses from each of three departments:

- POLI:3126 Environmental Policy 3 s.h.
- POLI:3422 Transnational Issues and the Horn of Africa 3 s.h.
- POLI:3501 International Organization and World Order 3 s.h.
- POLI:3507 Women and Politics in Global Perspective 3 s.h.
- POLI:3508 Race in World Politics 3 s.h.
- POLI:3509 International Courts: The Intersection of Law and Politics 3 s.h.
- POLI:3511 International Law 3 s.h.
- POLI:3513 Politics of International Human Rights Law 3 s.h.
- ECON:3625 Environmental and Natural Resource Economics 3 s.h.
- ECON:3750 Transportation Economics 3 s.h.
- ECON:3760 Health Economics 3 s.h.
- GEOG:1020 The Global Environment 3 s.h.
- GEOG:1070 Contemporary Environmental Issues 3 s.h.
- GEOG:1090 Globalization and Geographic Diversity 3 s.h.
- GEOG:2110 Population Geography: Societies in Flux 3 s.h.
- GEOG:2331 Human Dimensions of Climate 3 s.h.
- GEOG:2410 Environment and Development 3 s.h.
- GEOG:3070 Hungry Planet: Global Geographies of Food 3 s.h.
- GEOG:3110 Geography of Health 3 s.h.
- GEOG:4770 Environmental Justice 3 s.h.
- GHS:3030 Global Health Conference 1 s.h.
- GHS:3050 Global Aging 3 s.h.
- GHS:3110 Health of Indigenous Peoples 3 s.h.
- GHS:3141 Design With the Developing World 3 s.h.
- GHS:3720 Global Health Seminar 3 s.h.
- GHS:3850 Promoting Health Globally 3 s.h.
- GHS:4160 History of Public Health 3 s.h.
- GHS:4162 History of Global Health 3 s.h.
- GHS:4210 International Health 3 s.h.
- GHS:4340 Global Health and Global Food 3 s.h.
B.S.: Political Science

In addition to the following checkpoints, B.S. honors students must complete POLI:4000 Honors Seminar on the Study of Politics and one additional honors seminar before the seventh semester begins.

Before the fifth semester begins: two courses in the major

Before the seventh semester begins: six courses in the major and at least 90 s.h. earned toward the degree

Before the eighth semester begins: eight courses in the major

During the eighth semester: enrollment in all remaining course work in the major, all remaining General Education courses, and a sufficient number of semester hours to graduate

B.S.: Political Science

In addition to the following checkpoints, B.S. honors students must complete POLI:4000 Honors Seminar on the Study of Politics and one additional honors seminar before the seventh semester begins.

Before the fifth semester begins: two courses in the major

Before the seventh semester begins: eight courses in the major, including two of the three required mathematics/statistics courses and POLI:3000 Understanding Political Research; and at least 90 s.h. earned toward the degree

Before the eighth semester begins: 11 courses in the major, including POLI:4701 Undergraduate Research Tutorial

During the eighth semester: enrollment in all remaining course work in the major, all remaining General Education courses, and a sufficient number of semester hours to graduate

B.A.: International Relations

Before the third semester begins: POLI:1500 Introduction to International Relations

Before the fifth semester begins: all core courses and the methods course

Before the seventh semester begins: at least 12 s.h. in the track and at least 90 s.h. earned toward the degree

Before the eighth semester begins: all track requirements

During the eighth semester: enrollment in all remaining course work in the major, all remaining General Education courses, and a sufficient number of semester hours to graduate

B.S.: International Relations

Before the third semester begins: POLI:1500 Introduction to International Relations

Before the fifth semester begins: all core courses and the methods course

Before the seventh semester begins: at least two of the mathematics/statistics courses, at least 12 s.h. in the track, and at least 90 s.h. earned toward the degree

Before the eighth semester begins: all core courses, the methods course, the remaining mathematics/statistics course, and all track requirements

During the eighth semester: enrollment in all remaining course work in the major, all remaining General Education courses, and a sufficient number of semester hours to graduate

SELF-DEFINED TRACK

Students may create their own track with permission from the director of undergraduate studies. A self-defined track may not duplicate an existing track or another academic program of study at the University of Iowa. It must consist of at least 15 s.h. of course work, which must include 3 s.h. of credit earned in courses from each of three departments.

B.A. or B.S. with Teacher Licensure

Political science majors interested in earning licensure to teach in elementary and/or secondary schools must complete the College of Education's Teacher Education Program (TEP) in addition to the requirements for the major and all requirements for graduation. The TEP requires several College of Education courses and student teaching. Contact the Office of Education Services for details.

Students must satisfy all degree requirements and complete Teacher Education Program licensure before degree conferral.

The Department of Political Science course POLI:1100 Introduction to American Politics is approved for teacher education requirements.

Four-Year Graduation Plan

The following checkpoints list the minimum requirements students must complete by certain semesters in order to stay on the University's Four-Year Graduation Plan. (Courses in the major are those required to complete the major; they may be offered by departments other than the major department.)

B.A.: Political Science

In addition to the following checkpoints, B.A. honors students must complete POLI:4000 Honors Seminar on the
Education courses, and a sufficient number of semester hours to graduate

**Honors in the Major: Political Science**

Students majoring in political science have the opportunity to graduate with honors in the major. To enter the major's honors program, students must have a g.p.a. of at least 3.33 in the major and must be members of the University’s honors program, which requires students to maintain a cumulative University of Iowa g.p.a. of at least 3.33 and to fulfill other requirements; visit Honors at Iowa to learn about the University of Iowa Honors Program.

Departmental honors students must maintain a g.p.a. of at least 3.50 in the major. They must complete 9 s.h. in honors courses numbered 2000 or above with a grade of B or higher in each course, and they are encouraged to take honors sections of introductory courses whenever available. Their work must include the following courses.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>POLI:4000</td>
<td>Honors Seminar on the Study of Politics</td>
<td>3 s.h.</td>
</tr>
<tr>
<td></td>
<td>(preferably taken during the second year)</td>
<td></td>
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</tbody>
</table>

At least one additional honors seminar, from these:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>POLI:4100</td>
<td>Honors Seminar on American Politics</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>POLI:4300</td>
<td>Honors Seminar on Political Theory</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>POLI:4400</td>
<td>Honors Seminar on Comparative Politics</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>POLI:4500</td>
<td>Honors Seminar on International Politics</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

One course numbered 5000 or above, with the instructor's consent

**Final honors project—one of these:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>POLI:4600</td>
<td>Honors Research Project</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>POLI:4601</td>
<td>Honors Senior Thesis</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

For more information about honors in the political science major, contact the Department of Political Science honors advisor.

**Honors in the Major: International Relations**

Students majoring in international relations have the opportunity to graduate with honors in the major. Departmental honors students must maintain a g.p.a. of at least 3.50 in the major. They must complete POLI:4500 Honors Seminar on International Politics or POLI:4400 Honors Seminar on Comparative Politics. They also must designate POLI:4800 Senior Seminar in International Relations as an honors course and complete an honors thesis, registering in POLI:4601 Honors Senior Thesis.

Honors students in international relations must be members of the University’s honors program, which requires students to maintain a cumulative University of Iowa g.p.a. of at least 3.33 and to fulfill other requirements; visit Honors at Iowa to learn about the University of Iowa Honors Program.

**Minor: Political Science**

The minor in political science requires a minimum of 15 s.h. in political science courses, including 12 s.h. in courses numbered 2000 or above and 12 s.h. taken at the University of Iowa. Students must maintain a cumulative g.p.a. of at least 2.00 in all courses for the minor and in all UI courses for the minor. Course work in the minor may not be taken pass/nonpass. Credit by exam is not accepted. Credit from POLI:1000 First-Year Seminar, POLI:3124 Political Science Des Moines Internship Program, and POLI:4900 Government Internship does not count toward the minor. Credit earned through a University of Iowa Regents program is considered credit earned at the University of Iowa.

Students may complete an emphasis area (see “Emphases in Political Science” above); however, emphasis areas in the minor are not recorded on the transcript. Students may request a letter from the Department of Political Science noting the completion of an emphasis area in the minor.

**Minor: International Relations**

The minor in international relations requires a minimum of 15 s.h. in course work approved for the international relations major, including at least 9 s.h. in courses numbered 3000 or above and at least 12 s.h. taken at the University of Iowa. Students must maintain a cumulative g.p.a. of at least 2.00 in all courses for the minor and in all UI courses for the minor. Course work in the minor may not be taken pass/nonpass. Students may count a maximum of 9 s.h. earned in course work from one department toward the minor.

Courses for the minor must include this:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>POLI:1500</td>
<td>Introduction to International Relations</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

And one of these:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>POLI:3512</td>
<td>International Conflict</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>POLI:3516</td>
<td>The Politics of International Economics</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

**Certificate in Social Science Analytics**

The Department of Political Science collaborates with the Departments of Geographical and Sustainability Sciences (p. 323), Sociology (p. 585), and Statistics and Actuarial Science (p. 613) to offer the undergraduate program in social science analytics; see Social Science Analytics (p. 571) in the Catalog. The Department of Political Science administers the certificate.

**National Honor Society**

The department sponsors a chapter of Pi Sigma Alpha. Students who have a cumulative g.p.a. of at least 3.30, have attained junior standing, and have completed 15 s.h. of course work in political science are considered for membership. Contact the Department of Political Science honors advisor for more information.

**Graduate Programs of Study**

- Master of Arts in political science
- Doctor of Philosophy in political science

Graduate study in political science emphasizes the Doctor of Philosophy program, which is designed for students planning academic careers. The department usually offers
the master's degree only as a preliminary step toward the Ph.D.

Master of Arts
The Master of Arts program in political science requires a minimum of 30 s.h. of graduate credit, with a g.p.a. of at least 3.25. No thesis is required. Each student's record is reviewed by a final examination committee, which may waive the final oral examination.

A first-year evaluation committee convenes at the end of the student's first year of courses; if the committee finds that a student's work provides sufficient evidence of the research and writing skills ordinarily demonstrated in a master's thesis, it may recommend that the student be allowed to proceed with a doctoral program. When the first-year evaluation committee finds the quality of a student's work inadequate for recommending continuation toward the Ph.D., the committee may recommend that the student be permitted to seek the nonthesis M.A. as a terminal degree.

Doctor of Philosophy
The Doctor of Philosophy program in political science requires a minimum of 72 s.h. of graduate credit. The program is designed to prepare students for research, teaching, and scholarly endeavor in academic settings and private or governmental institutions. It produces graduates who are deeply committed to the study of politics, familiar with fundamental knowledge about political processes, well trained in methods and techniques for careful investigation of basic and applied research questions, and determined to make contributions to the discipline of political science and to society.

The department usually admits seven to ten Ph.D. students each year, so students work closely with faculty members, often collaborating on research and publication. Graduate students know one another and enjoy supportive, congenial working conditions.

Doctoral study usually lasts four to five years. The first-year curriculum for all students consists of core courses equally divided between substance and methodology. Emphasis is on basic research methods, including quantitative methods, that political scientists must understand thoroughly. Special attention is given to research design, collection of observations, and data analysis and interpretation.

The second and third years of study are spent in small seminars with focused, substantive topics. Papers written for these seminars might be submitted to journals or read at professional meetings. Students must take their qualifying examinations by the end of the third year. They take their comprehensive examination (oral defense of the dissertation proposal) by the middle of the first semester of their fourth year.

The fourth and fifth years are spent on dissertation research and writing. Students who do basic research and gather data abroad often require an additional year to complete the dissertation.

Six fields of study are available: American politics, comparative politics, international relations, political theory, formal theory, and for those who wish to go beyond the basic methodology training, research methods.

Each student chooses three fields of study for qualifying examinations.

The Guide to Doctoral Study in Political Science, available from the Department of Political Science and on its website, provides a comprehensive statement of departmental requirements.

Admission
Applicants must meet the admission requirements of the Graduate College; see the Manual of Rules and Regulations of the Graduate College.

Courses
Lower-Level Undergraduate
The following courses are numbered below 3000; they are introductory undergraduate courses. Course POLI:1000 First-Year Seminar does not count toward the major or the minor in political science.

POLI:1000 First-Year Seminar 1 s.h.
Small discussion class taught by a faculty member; topics chosen by instructor; may include outside activities (e.g., films, lectures, performances, readings, visits to research facilities). Requirements: first- or second-semester standing.

POLI:1001 Introduction to Politics 3 s.h.
Introduction to selected processes, institutions, or behaviors central to the study of politics.

POLI:1002 Lawyers in the American Political System 3 s.h.
Training and careers of lawyers; various roles they play in the American political system. Requirements: no prior enrollment in POLI:3150 with subtitle Lawyers in the American Political System.

POLI:1100 Introduction to American Politics 3 s.h.
Structure and processes of American national government; how the United States manages political conflict; impact of the U.S. Constitution; effect of public opinion, interest groups, and media on government; role and evolution of Congress, presidency, bureaucracy, and Supreme Court. GE: Social Sciences.

POLI:1200 Introduction to Political Behavior 3 s.h.
Patterns and basis of political behavior of American electorate; trends in voter turnout; vote choice; ideology, partisanship, and public opinion. GE: Social Sciences.

POLI:1300 Introduction to Political Thought and Action 3 s.h.
Common problems, literature, analytic techniques. GE: Social Sciences; Values, Society, and Diversity.

POLI:1400 Introduction to Comparative Politics 3 s.h.
Politics worldwide, including all regions and levels of development; wide-ranging themes, including regime types, political change, political culture, public opinion, government structures, state-society relationships, electoral systems, public policy issues. GE: International and Global Issues; Social Sciences.

**POLI:1401 Introduction to the Politics of Russia and Eurasia** 3 s.h.
Political dynamics in postcommunist countries of east-central Europe and Eurasia; imperial legacies, ideology and practice of communist politics, patterns of democracy and authoritarianism. GE: International and Global Issues; Social Sciences.

**POLI:1403 Introduction to Politics in the Muslim World** 3 s.h.
Processes of politics and government in pivotal countries of the Muslim world; foundations of Islam, legacies of Western imperialism, regime types, regional conflicts, oppositional organizations; domestic and foreign policy; selected countries include Syria, Iran, Iraq, Egypt, Turkey, Saudi Arabia, Palestine, and Israel. GE: International and Global Issues; Social Sciences.

**POLI:1500 Introduction to International Relations** 3 s.h.
Survey of key issues in international relations, including causes of wars, different types of theories of international relations, international organizations, and global environmental problems. GE: International and Global Issues; Social Sciences.

**POLI:1501 Introduction to American Foreign Policy** 3 s.h.
Foreign policies: goals, basic themes and general patterns, problems encountered by policy makers, means employed in dealing with other nations and international organizations, processes by which policies are formulated, factors that influence structure of policies. GE: International and Global Issues; Social Sciences.

**POLI:1600 Introduction to Political Communication** 3 s.h.
Institutions, dynamics, issues of political communities considered as networks of communication; representative topics include political actors, ads, films, media, myths, news, publics, regulations, rhetorics, symbols. GE: Social Sciences.

**POLI:1601 Introduction to Political Media** 3 s.h.
Politics in news, culture, commerce, campaigns, and government with attention to current media (e.g., cinema, internet, print, television).

**POLI:1700 Introduction to Political Analysis** 3 s.h.
Tools necessary to analyze and solve puzzles in politics (i.e., Why do countries go to war rather than negotiate? Why do lifelong enemies become allies? Why do majorities act irrationally?); questions approached from a quantitative perspective (unlike most political analyses), in particular, game theory—a branch of mathematics that investigates how rational players act in situations (like those in politics) of strategic interaction. GE: Quantitative or Formal Reasoning.

**POLI:2107 Black Literature and Politics: Controversies of National Allegiance** 3 s.h.
Black literature born amid political controversy, from slave narratives to award-winning texts of late 20th century; evolving politics of African American writers; changing political landscape of this expansive period and representative literature; how African American writers shape U.S. political debate; surprising politics of many canonical African American writers. English majors may apply this course to the following area and/or period requirement. AREA: American Literature and Culture. PERIOD: 18th/19th-Century Literature, or 20th/21st-Century Literature. Same as AFAM:2781, ENGL:2460.

**POLI:2415 Latin American Politics** 3 s.h.
Governmental institutions, major interest groups; focus on area as a whole. GE: International and Global Issues; Social Sciences.

**POLI:2700 Business, Government, and Society** 3 s.h.
How business, governments, and societies interact and fail to interact; exploration of questions that are empirical (i.e., how does the relationship between business and government impact society?) and normative (i.e., how should the relationship between business and government impact society?); where one sits on business-government-society (BGS) triangle often shapes how normative questions are answered; how such an approach helps to better understand these relationships and how they lead to specific corporate, government, and societal outcomes.

### Upper-Level Undergraduate and Graduate

The following courses are numbered 3000-4999; they are considered advanced for undergraduates. Course POLI:4900 Government Internship does not count toward the major or the minor in political science; it is offered only satisfactory/fail.

**POLI:3000 Understanding Political Research** 3 s.h.
Creating knowledgeable evaluators of current research in political science; interpretation of different quantitative techniques with examples from current political science research.

**POLI:3001 Hawkeye Poll** 3 s.h.
Basics of survey design, sampling, question wording, interpreting responses, and writing press releases; students work together to help design questions as part of the Hawkeye Poll, a collaborative teaching and research enterprise in the Department of Political Science.

**POLI:3050 Problems in Methods: Visualizing Social Science Data** arr.
Problems in political science research methods; data collection, interpretation, analysis.

**POLI:3100 American State Politics** 3 s.h.
Approaches to analysis of political behavior in American state governments; emphasis on cultures, parties, actors, processes, issues.
POLI:3101 American Constitutional Law and Politics 3 s.h.
Role of U.S. Supreme Court in American political system; emphasis on analysis of Supreme Court cases.

POLI:3102 The U.S. Congress 3 s.h.
History of Congress, how congressional elections shape what legislators do, how laws are made in Congress, rules and maneuvers that shape these laws, and the future of Congress as one of the major institutions of American government; gain an understanding of Congress and why Americans continue to be confused and fascinated by this complicated branch and its politics.

POLI:3104 Immigration Politics 3 s.h.
United States immigration policy and political consequences of Latino population growth; contrast of political experiences of Latinos with groups and ideals of democratic political systems; analyses of past immigration policies; studies of public opinion, voter turnout, and campaign tactics.

POLI:3105 Minority Representation in American Politics 3 s.h.
effects of voting rights legislation, election laws, interest groups, and institutional constraints on minority representation in American politics.

POLI:3106 Racism and Politics in the U.S. 3 s.h.
Evolution of white racial attitudes over time; political experiences of African Americans contrasted with other groups and the ideals of democratic political systems; effect of race on political participation, partisan affiliation, vote choice, and policy preferences.

POLI:3107 Writing in Political Science: Writing for "Science" and for "Politics" arr.
Writing for "science" and "politics" of political science; science writing emphasis on clear explanation to produce understanding; political writing emphasis on advocacy, which can highlight, obscure, and "spin" to motivate readers; evaluation of examples of each writing form; principles that help clear or obfuscate, explain or persuade, depending on their purpose; students compose examples of each writing form.

POLI:3108 American Political Development 3 s.h.
Transformations in American political behavior and institutions over time.

POLI:3109 Fixing America's Electoral System 3 s.h.
What's wrong with American politics and what can be done to fix it; overview of major problems facing American democracy from polarized political parties and money in politics, to low voter turnout and trust in government, to growing gap between super rich and middle class; focus on problem solving, including movement towards digital politics and new media, participatory democracy, reform of congressional elections and non-partisan redistricting, presidential elections (Electoral College), presidential nomination process, campaign finance, voter registration and voting, proportional representation. Requirements: no prior enrollment in POLI:3150 with subtitle Election Reform.

POLI:3110 Local Politics 3 s.h.
Models of city government, relation to state and federal governments; rights, liabilities of municipalities; city elections, campaigns, issues; role of pressure groups.

POLI:3111 American Public Policy 3 s.h.
Functions and policies of national government; emphasis on domestic policy making, impact of public policy.

POLI:3112 Direct Legislation 3 s.h.
Direct democracy—lawmaking by the citizenry without legislative action; origins, historical perspectives, usage across politics, regulations; consequences of direct democracy; concerns about equality of access, tyranny of majority; United States, other countries.

POLI:3113 Research in Judicial Politics 3 s.h.
Applied research training in courts and judicial politics. Prerequisites: POLI:3101 or POLI:3120 or POLI:3121.

POLI:3114 Women and Politics in the United States 3 s.h.
Involvement of women in the U.S. political system; topics include political theories about women's involvement in politics and government, women and constitutional law, public policies that affect women, women's participation in politics at the mass and elite levels.

POLI:3116 The Presidency 3 s.h.
Constitutional foundations, subsequent development, current status of the office of the presidency; evolution of presidential selection process; powers, structures, functions of the office; role of president as legislative, executive, and public leader.

POLI:3117 Public Administration and Bureaucratic Politics 3 s.h.
Administrative and organizational theory and behavior; techniques of management; relations between administration and other branches in federal and state governments; administrative politics.

POLI:3118 Interest Groups 3 s.h.
Theory, organization, and structure of interest groups; how they influence Congress, executive branch, courts, elections.

POLI:3119 Policy Matters: Perspective on Contemporary Problems 3 s.h.
Public policy issues in scholarly perspective; UI experts provide background introduction to weekly issues; presentations of new policy initiatives, roundtable on policy options; panels representing local, state, and national options and experience involving policy practitioners, legislators, and advocates. Same as HIST:3115.

POLI:3120 The Criminal Justice System 3 s.h.
Role of actors, institutions that constitute and participate in the American criminal justice system.

POLI:3121 The Judicial Process 3 s.h.
Role of courts, lawyers, judges, interest groups in the American political system.
POLI:3122 Public Choice 3 s.h.
Introduction to some of the most important topics in public choice (i.e., How do we explain what the public "wants"? Can we determine group preferences and group choices even if individual incentives run contrary to society's needs?); study of public choice theory problems in political science—how we determine society's preference among candidates, public policies, or even types of government.

POLI:3123 State Politics in Iowa 3 s.h.
Introduction to Iowa government and politics; emphasis on Iowa Constitution, founding and history, political institutions, voting, political parties, mass movements and interest groups; evangelical movement in Iowa, immigration, and Iowa's role in national politics given the state's first-in-the-nation caucus.

POLI:3124 Political Science Des Moines Internship Program 1-6 s.h.
Supervised professional work experience in government and nongovernment organizations, as well as private industry. Corequisites: POLI:3125. Requirements: sophomore or higher standing.

POLI:3125 Perspectives on Contemporary Iowa 3 s.h.
In-depth examination of the state of Iowa; culture, politics, and contemporary issues facing the state and Midwest region in which it resides; historical and political development of Iowa as a state; policy implications of development on contemporary Iowa; how history, culture, and politics impact citizenship of the state; designed to enrich internship program in Des Moines, IA.

POLI:3126 Environmental Policy 3 s.h.
Analysis of environmental problems through an interdisciplinary approach drawing from economics, environmental economics, political economy, and political science; how environmental resources differ from other goods that economists study (usually there is no market for them); government policies that are needed to maintain and improve environmental quality; how governments are influenced by voters' policy preferences and by policy preferences of special interest groups; three main areas of political economy as it relates to environmental policy.

POLI:3127 Legislative Policy Seminar arr.
Policy research for the Iowa Legislature.

POLI:3150 Problems in American Politics 1-3 s.h.
Problems in studying American system; structures, functions, behavior.

POLI:3201 Political Campaigning 3 s.h.
Current state of political campaigning at all levels of government; history of campaigning, role of money and campaign finance reform, television and negative advertising, Internet campaigning.

POLI:3202 Political Psychology 3 s.h.
Political phenomena from psychological perspective; political behaviors of individuals, including decision making by elites and masses, evaluations of political candidates, mass mobilization, response to mass media; psychological concepts including stereotyping, social cognition, attitude, group identification.

POLI:3203 Campaigns, Elections, and Voting Behavior 3 s.h.
Determinants of voting behavior; correlates of political participation, political apathy; political socialization processes; nature and functions of elections.

POLI:3204 Public Opinion 3 s.h.
Role in making public policy; formation, change of political attitudes and opinions; political ideology; measurement of public opinion; how opinion polls are conducted; experience with interviewing and conducting public opinion research. Same as SOC:3525.

POLI:3300 Postmodern Political Theory 3 s.h.
Major writers and intellectual trends, from 19th century to World War II.

POLI:3302 Current Political Theory 3 s.h.
Thinkers or schools of thought, from World War II to present.

POLI:3303 Political Issues 3 s.h.
Representative topics include democracy, revolution, justice, obligation, technology, authority.

POLI:3305 Modern Political Theory 3 s.h.
Major writers and intellectual trends in political thought from Renaissance and Reformation to 19th century.

POLI:3306 Problems of Democracy 3 s.h.
Theory and practice of democracy; democratic ideals and the institutions and practices necessary for those ideals to work in everyday politics—power, equality, majority rule, participation, trust, representation.

POLI:3400 Introduction to Political Economy 3 s.h.
Economic reasoning applied to political issues, including evolution of institutions, voting, leadership, interest groups, bargaining tactics, federalism, bureaucracy, fairness and compensation for wrongs, legitimacy of democracy, electoral cycles in economic policy, revolutions.

POLI:3401 European Union 3 s.h.
Politics of the European Union; institutional characteristics and major political issues of the European Union, including popular and national responses to European integration.

POLI:3403 Parties and Elections Around the World 3 s.h.
Comparative approach and exploration of political parties and elections around the world; party formation and development, identification and voter behavior, competition and strategies; election outcomes; electoral systems and their consequences. Recommendations: POLI:1400 is strongly recommended.
POLI:3404 Public Policy Around the World 3 s.h.
Does the design of democratic institutions lead to poor or slow government response to crises (e.g., Hurricane Katrina, Gulf Oil Spill)? Does increased citizen participation in policy making help or hurt? How can citizens in democracies hold government accountable, especially when it is under pressure to adopt certain policies (e.g., economic stimulus packages, environmental or financial regulations, health care, taxation)? Implementation of laws in democracies, accountability of policy makers and consequences of controlling them, and so forth.

POLI:3405 Authoritarian Politics 3 s.h.
Political dynamics in countries with authoritarian governing regimes; how those dynamics differ from their counterparts in democracies; how decisions are reached and get enforced; forms political struggles take; how interest groups pursue influence; ways individuals deal with the government; tension between regime control and societal progress.

POLI:3406 Ethnic and Religious Conflict in the Muslim World 3 s.h.
Ethnic and religious conflict in the Muslim world; language rights, cultural preservation, and religious nationalism examined through case studies of ethnic and religious groups in countries such as Afghanistan and Iraq; conditions under which conflict becomes violent, protracted, and regionalized; strategies available to states and minority groups for resolving or managing conflicts.

POLI:3408 Chinese Politics and Society 3 s.h.
Comprehensive introduction to modern Chinese history; current Chinese political system and political culture; public policy issues.

POLI:3410 Russian Foreign Policy 3 s.h.
Russia's behavior as a major economic, military, and diplomatic power in the world and what shapes that behavior; Russians' perceptions of other countries; Russian national interests; capabilities and domestic political dynamics; implications for foreign policy of the United States and other countries.

POLI:3411 Democracy: Global Trends and Struggles 3 s.h.
Diverse contemporary understandings and practices of democracy; worldwide democratization trends; what political, economic, cultural and transnational factors shape those trends; how elites and citizens struggle to promote or retard democracy; the news full of people around the world taking action to demand democracy and what this term, so highly prized, really means; what is known about when democracy will replace authoritarianism; how can democracies more fully live up to their promise.

POLI:3412 Government and Politics of Europe 3 s.h.
Political institutions, processes of selected European countries. GE: International and Global Issues; Social Sciences.

POLI:3413 Russian Politics 3 s.h.
Institutions and processes of governing this large world power; Russian political dynamics, including struggles to unify or diversify power; political responses to major economic, technical, and social challenges. Recommendations: POLI:1401. GE: International and Global Issues; Social Sciences.

POLI:3414 Government and Politics of the Far East 3 s.h.
Functions, institutions of government in countries of Far East; focus on social, economic, historical environments. GE: International and Global Issues; Social Sciences. Same as ASIA:3414.

POLI:3416 France in the 21st Century 3 s.h.
French politics from the end of the 20th century to beginning of the 21st century; history of France's Fifth Republic; institutional development; key events that influenced politics in France over the last 50 years; major issues that shape France today—citizenship, immigration, identity, France's role in the European Union, electoral and institutional reform, rise of the extreme right, role of women in French society, how protest still affects French politics.

POLI:3417 Political Leadership 3 s.h.
Foundations, effects of leadership in different political systems.

POLI:3418 Governance in the Middle East 3 s.h.
Institutions and social systems that are affected by political behavior; ways in which Islam, oil production, and international forces shape political evolution in the region; comparative political inquiry of the operation of government institutions in the context of specific historical legacies, economic structures, and population characteristics in Iran, Iraq, Egypt, Turkey, Saudi Arabia.

POLI:3419 War in the Muslim World 3 s.h.
Foundations, evolutions, and outcomes of recent wars in the Middle East; primary focus on insurgencies in Syria, Afghanistan, Pakistan, and Iraq, together with Arab-Israel conflict; Sunni-Shiite, Jewish-Arab, Arab-Kurd cleavages; military activities of international forces; rise of insurgent forces (i.e., the Taliban); Al Qaeda alliance; shadow governments; institutions of governance; strategies and ideologies of oppositional organizations. Requirements: no prior enrollment in POLI:3450 with subtitle War in the Muslim World.

POLI:3420 Southeast Asia: Democracy, Identity, and Development 3 s.h.
Eleven states of Southeast Asia; governance, development strategies, domestic politics, approach to democracy and national identity; regional politics and important transnational issues; role of ASEAN, terrorism, trans-Pacific trade and investment issues, China's looming presence, impact of ongoing and historic conflicts; briefings, discussions, presentations.

POLI:3421 Southern Africa: Development and Governance 3 s.h.
Comparative approach to politics of ten countries in the Southern Africa region; mineral riches, substantial agricultural resources, millions of hard working and talented people; poverty, underdevelopment, and inequality; varied paths toward development; mosaic of ethnic, religious, and regional groups that impact domestic and regional politics; politics analyzed at regional, state, and sub-state level.

**POLI:3422 Transnational Issues and the Horn of Africa**
Eight states in the Horn of Africa region; important transnational and regional issues; governance, development strategies, domestic politics, social and civic dynamics of countries in the region; wildlife trafficking, piracy, fight against HIV/AIDS, imprint of colonialism, secession, ethnic and national identities, democratization, role of women in society, impact of ongoing and historic conflicts; briefings, discussions, presentations.

**POLI:3423 The Middle East: Policy and Diplomacy**
Nineteen states and entities of North Africa and the Middle East; issues of governance, development strategies, domestic politics, and approach to democracy and national identity; regional politics and important transnational issues; role of political Islam; impacts of the Arab Spring, terrorism, oil; role of women in society, ongoing and historic conflicts; briefings, discussions, presentations.

**POLI:3450 Problems in Comparative Politics**
Structures, functions, behaviors of different political systems.

**POLI:3500 American Foreign Policies**
Ends pursued, problems encountered, means employed by the United States in relations with other states and international organizations.

**POLI:3501 International Organization and World Order**
Different conceptualizations of world order; multiple sources of world order including force, power, norms, international institutions; International order and main sources; question peace being the same as world order.

**POLI:3502 Politics and the Multinational Enterprise**
Operations of multinational business enterprises; relationship between business and politics; focus on corporations interacting with sovereign states, other companies, interest groups, international governmental organizations (IGOs), and non-governmental organizations (NGOs).

**POLI:3503 Politics of Terrorism**
Interplay between technological change and military strategy; changes in warfare brought about by information revolution; cyber weapons and other features of war in computer age: unmanned systems including aerial drones and ground-based robots; moral considerations associated with military robotics; anti-missile systems; predicting future changes in technology and military strategy.

**POLI:3504 Globalization**
Introduction to multidisciplinary literature on political economy and culture of globalization; major topics of debate on globalization.

**POLI:3505 Causes, Consequences, and Management of Civil War**
Causes, duration, management, and consequences of civil war; factors that create more frequent, longer civil wars (e.g., greed, grievance, ethnic conflict, state capacity); conflict management strategies for ending civil wars and minimizing long-term negative consequences.

**POLI:3506 Consequences of War**
War's enduring effects: war's impact on individuals, including combatants and noncombatants; war's impact on states, including states' development, economic, political, and social effects; war's effects on the international system.

**POLI:3507 Women and Politics in Global Perspective**
Women and politics in Europe and the global South; women's participation in political parties and social movements, women in the bureaucracy, women and the politics of intersectionality, feminism and the state, emergence of female gender identities.

**POLI:3508 Race in World Politics**
Fundamental questions about racial and ethnic politics; racial and ethnic identities and their intersection with other major social cleavages such as class, nationality, sexuality, religion, gender; concepts and use of race and ethnicity viewed through varied theoretical perspectives; contemporary events around the globe.

**POLI:3509 International Courts: The Intersection of Law and Politics**
Introduction to important international courts including (Permanent) International Court of Justice, European Court of Justice, International Criminal Tribunal for Yugoslavia, International Criminal Tribunal for Rwanda, and International Criminal Court; the formation, design, and expansion of international courts from political and legal perspectives; states' capabilities, regime type, and war; intersection of domestic and international law, emphasizing the major legal systems in the world (civil law, common law, Islamic law).

**POLI:3510 State Failure in the Developing World**
State failure in the developing world, including notable cases like Somalia and Zimbabwe; causes of state failure; potential policy interventions designed to address consequences of state failure.
POLI:3511 International Law 3 s.h.
Introduction to field of international law from a political and legal perspective; history and contemporary status of international law in several areas: human rights, humanitarian law (of war), environmental law, trade; structure and areas of international law; ask if international law is or can it be an effective tool of international cooperation from a political science perspective; structure of the basic documents of international law and organizations, key cases in the field from a legal perspective. Requirements: no prior enrollment in POLI:3550 with subtitle International Law.

POLI:3512 International Conflict 3 s.h.
International conflict as the primary ingredient of international politics; sources, causes, and effects of conflict, alliance structures, power distribution, geography, arms races, deterrence.

POLI:3513 Politics of International Human Rights Law 3 s.h.
Interaction between politics and international human rights law; international law and organizations, human rights, ratification of human rights treaties; theories of international law and cooperation, exposure to tools of international relations (diplomacy, trade, aid, shaming, sanctions), the role that international and domestic civil society groups play in advocating for states to commit to human rights laws.

POLI:3514 Regional Peace and Security 3 s.h.
Analysis of the causes of peace and conflict between countries in various regions of the world; theories of zones of peace, security communities, regional security complexes.

POLI:3515 Global Communication and Politics 3 s.h.
How distance and language barriers in communication have fallen since 2000; how politics and the world are affected when such barriers to communication disappear.

POLI:3516 The Politics of International Economics 3 s.h.
Politics of international trade and financial systems, including rise of free trade in 19th century and breakdown between the two world wars, postwar trading system framed around the World Trade Organization, different types of international monetary systems, relations between rich countries and poor countries, and global environmental politics.

POLI:3517 Global Justice 3 s.h.
Introduction to normative issues in international politics (i.e., Under what conditions are wars just? When is intervention justified? Do wealthier nations owe anything to those elsewhere who are in need?); theoretical works on global justice by Rawls, Kant, Pogge, Walzer, and others; normative theories analyzed against background of empirical examples, such as recent humanitarian interventions, contemporary wars, current trade regime, global environmental problems; seminar. Requirements: no prior enrollment in POLI:3550 with subtitle Global Justice.

POLI:3518 Water Wars: Conflict and Cooperation 3 s.h.
How climate change may aggravate shortage of freshwater in water-stressed regions, producing warnings of conflict over international river basins or “water wars”; recent U.S. intelligence assessment notes that water may be used as a weapon between or within states, or to further terrorist aims in the future; management of international water resources including conflicts over cross-border rivers and maritime areas; common property resources, piracy, maritime security, peaceful and militarized conflict management of water-based conflicts, climate issues, natural disasters, United Nations Law of the Sea Convention.

POLI:3520 National Security Policy 3 s.h.
Nuclear weapons and deterrence, credible commitments, value of emphasizing sea power or land power, strategic differences between symmetric and asymmetric conflict, information and intelligence, domestic politics and use of force abroad, United Nations Security Council and international law, role of private military contractors, and integration of armed forces by race, gender, and sexual orientation.

POLI:3550 Problems of International Politics 3 s.h.
Problems in studying international system, structures, functions, behavior.

POLI:3600 Multimedia Politics 3 s.h.
How increasingly universal access to communication affects political campaigning and advocacy; the use of blogging, video, and developing communication media by citizens and candidates to talk politics.

POLI:3601 Politics of Film 3 s.h.
Issues in the popular politics of aesthetics, communication, culture, and myth, explored through analysis of films.

POLI:3602 New Media and Politics 3 s.h.
Blogging, microblogging, and video production as tools of new media (anyone can twitter and reach a large audience); how these technologies work, how they are being used in current politics, what they portend for the future, and what tools are next. Requirements: no prior enrollment in POLI:3303 with subtitle New Media and Politics.

POLI:3603 War and Film arr.
Exploration of one of the most significant political phenomena, war, as it is represented and understood through film; various film genres including classic war films, historical and historical fiction, documentary (e.g., Battle of Algiers, Triumph of the Will, Invisible War), comedy-drama (e.g., Life is Beautiful), and dark comedy or satire (e.g., The Mouse that Roared, Tropic Thunder); scholarly writings on international conflict; students discover and investigate themes related to nature of war, its underlying causes, and its consequences.

POLI:3700 Strategy in Politics 3 s.h.
How to isolate the most important elements in strategic political behavior, build models to understand them, recognize common scenarios, devise institutional resolutions to the Prisoners' Dilemma and coordination problems.
POLI:3701 Special Topics in Politics 1-2 s.h.
Presentations by distinguished lecturers on topics in the study of politics not covered in other courses. One or two weeks.

POLI:4000 Honors Seminar on the Study of Politics 3 s.h.
Selected topics in philosophy, theory, and methods for the systematic study of politics; foundations of scientific inquiry, including processes of theory building, concept formation, and hypotheses testing; political research; challenges faced when conducting good political science; questions of research design, measurement accuracy, and sample selection; application of multivariate research process. Requirements: honors standing in political science.

POLI:4050 Two Koreas: Political Economy or Regional Rivalry 3 s.h.
Introduction to the Korean peninsula; focus on nature of North and South Korean regional rivalry and its global impacts; theoretical and historical explanations; various security issues including North Korean nuclear threat, military alliances, and reunification prospects; economic issues including differential growth paths, South Korea's rapid growth, and recent economic woes in both Koreas. Same as ASIA:4050.

POLI:4100 Honors Seminar on American Politics 3 s.h.
Ideas, issues, methods in selected area. Requirements: junior or senior honors standing in political science.

POLI:4300 Honors Seminar on Political Theory 3 s.h.
Intensive study of ideas, issues, methods in an area of political theory. Requirements: junior or senior honors standing in political science.

POLI:4400 Honors Seminar on Comparative Politics 3 s.h.
Exploration of a selected topic in comparative politics, its cross-national patterns, strategies used to study it, and major debates among scholars; study of politics by comparing two or more countries or other political units; new light on how societies are divided on major issues (whether state regulation of economy or role of religion in society), how people behave politically (from voting to demonstrations to revolution), role played by political institutions (e.g., legislatures, courts, political parties). Requirements: junior or senior honors standing in political science.

POLI:4500 Honors Seminar on International Politics 3 s.h.
Ideas, issues, methods in selected area. Requirements: junior or senior honors standing in political science.

POLI:4600 Honors Research Project 3 s.h.
Special research assistance to political science faculty. Requirements: junior or senior honors standing in political science.

POLI:4601 Honors Senior Thesis 3 s.h.
Supervised research and writing. Requirements: honors standing in political science and more than one semester before graduation.

POLI:4700 Independent Study arr.
Supervised special projects.

POLI:4701 Undergraduate Research Tutorial 3 s.h.
Individual training in applied research.

POLI:4702 Senior Research Project/Paper 3 s.h.
Supervised research and writing. Requirements: political science major and more than one semester before graduation.

POLI:4800 Senior Seminar in International Relations 3 s.h.
Completion of final research project as a culmination of student's work in the major; research supervised by a faculty member; required for international relations major. Recommendations: taken during one of student's final two semesters at the University of Iowa.

POLI:4900 Government Internship 1-3 s.h.
Undergraduate internships in state or national legislative office, executive agency, or with election campaign official.

Graduate

Courses numbered 5000-6000 are graduate core courses; those numbered 7000 or above are advanced graduate courses.

POLI:5000 Introduction to Political Analysis 4 s.h.
Conceptual problems of political analysis; empirical research strategies, philosophy of science. Requirements: M.A. or Ph.D. standing in political science.

POLI:5001 Introductory Methodology 3-4 s.h.
Introduction to quantitative techniques in political science; set theory, probability distributions, estimation, testing; emphasis on acquiring mathematical skills for more advanced quantitative work in political science. Requirements: M.A. or Ph.D. standing in political science.

POLI:5003 Intermediate Methodology 4 s.h.
Techniques of data analysis; statistical models and their relationship to hypotheses tested. Requirements: doctoral standing in political science and one semester of intermediate statistics.

POLI:5100 American Politics 4 s.h.
Major literature of American politics, emphasis on comparative, systemic, behavioral studies. Requirements: M.A. or Ph.D. standing in political science.
POLI:5300 Political Theory 4 s.h.
Methods of political theory, epistemological and moral foundations of political inquiry; terms of political discourse (e.g., power, legitimacy, equality, ideological foundations of politics); schools of thought and current controversies in political theory. Requirements: M.A. or Ph.D. standing in political science.

POLI:5400 Comparative Politics 4 s.h.
Conceptual, theoretical, and methodological issues in comparative study of politics; developments in comparative politics subfield. Requirements: M.A. or Ph.D. standing in political science.

POLI:5500 International Politics 4 s.h.
Approaches to study of international politics. Requirements: M.A. or Ph.D. standing in political science.

POLI:5700 Introduction to Formal Models in Political Science 4 s.h.
Use of formal mathematical models; current modeling techniques, applications in American politics, comparative politics, international politics. Requirements: M.A. or Ph.D. standing in political science.

POLI:6632 Crossing Borders Proseminar arr.

POLI:6635 Crossing Borders Seminar 2-3 s.h.

POLI:7000 Writing Political Science 4 s.h.
Practice in planning and completing political inquiries, with emphasis on writing for scholarly publication; experience refining one's prior research projects for submission to disciplinary journals, and drafting dissertation proposals. Requirements: doctoral standing in political science.

POLI:7001 Experimental Methods 4 s.h.
Methods, techniques used in political science experiments.

POLI:7002 Topics Methodology 4 s.h.
Application of advanced statistical techniques in political science; limited dependent variable regression techniques, simulation methods, missing data techniques, history/rare event analysis and maximum likelihood, and topics tailored to students' research; focus on learning how and when to apply these techniques.

POLI:7003 Advanced Methodology 4 s.h.
Introduction to regression techniques for limited dependent and qualitative variables in political science; logit, probit, multinomial logit and probit, ordered logit and probit, event history models, event count models; emphasis on understanding how and when to apply these models.

POLI:7004 Qualitative Methods 4 s.h.
Introduction to qualitative methods in political science research; interviewing, ethnographic research, process tracing, comparative historical analysis, content and discourse analysis, fuzzy set theory.

POLI:7100 Modeling American Politics 4 s.h.
Exploration of how well formal models explain the real world and how the fit between models and world can be improved.

POLI:7102 The Presidency 4 s.h.
American chief executive: history, recruitment, behavior, roles, responsibilities, powers, relationships with other institutions.

POLI:7150 Problems in American Politics 4 s.h.
Problems in study of American political system; structures, functions, behavior.

POLI:7200 Legislative Behavior 4 s.h.
Institutions, processes, behavior in the United States, Europe, or developing countries.

POLI:7201 Political Psychology 4 s.h.
Political phenomena from a psychological perspective; decision making by elites and masses, evaluations of political candidates, mass mobilization, response to mass media; psychological theories used to explain these behaviors, including stereotyping, social cognition, attitude, group identification, attribution.

POLI:7202 Public Opinion and Electoral Behavior 4 s.h.
Political attitudes and beliefs in mass publics; voting behavior; how electoral systems function.

POLI:7350 Problems in Political Theory 4 s.h.
Prescriptive and explanatory political theory.

POLI:7401 European Union 4 s.h.
Politics of the European Union; institutional characteristics and major political issues of the European Union, including popular and national responses to European integration.

POLI:7409 Democratization and Authoritarianism 4 s.h.
Rival understandings and practices of democracy and authoritarianism, including challenges of quantifying them for comparative analyses; major theoretical and empirical approaches to studying democratization and other forms of regime change.

POLI:7423 Comparative Parties and Elections 4 s.h.
Introduction to important questions and puzzles in the study of political parties; party formation and development, the role of parties in society, how parties are organized, party systems, electoral systems, party strategy and behavior, development of new parties, whether parties are still relevant, regeneration of communist parties in post-communist regimes, ethnic parties, failure of party consolidation.

POLI:7450 Problems of Comparative Politics 4 s.h.
Problems in study of comparative political systems; structures, functions, behavior.

POLI:7500 Foreign Policy 4 s.h.
Foreign policy making and international behavior in relation to theories, findings from selected countries.

POLI:7502 International Systems and Global Governance 4 s.h.
Literature of international systems and international organization; major schools of thought in international relations theory, their utility in explaining evolution of the international system and recent developments in international organization and global governance.

POLI:7503 International Conflict and Cooperation 4 s.h.
Recent theoretical and empirical debates in international relations literature; emphasis on formal and quantitative research.

POLI:7504 Theories of International Political Economy 1-4 s.h.
Theories focusing on international system, the state, bureaucracies, interest groups, international organizations, bargaining processes, distributive norms.

POLI:7550 Problems in International Politics 4 s.h.
Issues of international politics, emphasis on problems of theoretical analysis.

POLI:7701 Dynamic Models of International Politics 2-4 s.h.
Overview of several dynamic modeling techniques used to study international relations; modeling assumptions, the kinds of information models can provide, evaluation of models.

POLI:7900 Readings Tutorial arr.
Independent study.

POLI:7901 Research Tutorial arr.
Individual training in applied research.

Psycologlcal and Brain Sciences

Chair
• Jodie M. Plumert

Undergraduate major: psychology (B.A., B.S.)
Undergraduate minor: psychology
Graduate degrees: M.A. in psychology; Ph.D. in psychology
Faculty: http://www.psychology.uiowa.edu/people/faculty
Web site: http://www.psychology.uiowa.edu

The Department of Psychological and Brain Sciences offers an undergraduate major and minor as well as graduate degree programs. It also offers courses that undergraduate students in all majors may use to satisfy the General Education Program (p. 313) Social Sciences requirement and a First-Year Seminar designed for entering undergraduate students.

Undergraduate Programs of Study
• Major in psychology (Bachelor of Arts, Bachelor of Science)
• Minor in psychology

The major in psychology is designed to contribute to students' general liberal arts and sciences education and to provide a foundation for postbaccalaureate training in psychology and closely related disciplines as well as areas such as business, law, communication, medicine, and the allied health sciences. Students who intend to enter the job market immediately after completing an undergraduate degree should complement their psychology major with substantial preparation in another program more closely tied to the world of work (e.g., education, social work, business, journalism, nursing). Almost all vocational opportunities in psychology require advanced degrees.

The psychology major for the Bachelor of Science is intended for students who plan to pursue advanced work in psychology or in a related discipline. It requires a specific grade-point average for admission and certain courses in statistics, experimental psychology, mathematics, and natural science. The psychology major for the Bachelor of Arts has fewer specific requirements and puts less emphasis on methodology. Both programs leave time for students to supplement the psychology major with another program of study.

Students who change to a psychology major after two years of undergraduate work may find they do not have sufficient background for the B.S. program. They may wish to enrich the B.A. program with courses in experimental psychology and other advanced electives if they intend to pursue graduate work in psychology or a related field.

Students in either program begin with a general introductory course, followed by biological psychology, statistics, and methodology courses and introductory courses in several broad areas: developmental science, clinical psychology, cognitive psychology, and social psychology. These courses are followed by upper-level psychology course work selected by each student.

The department maintains excellent facilities to support teaching and research on human and animal behavior. All faculty members are directly engaged in research, and they bring to their undergraduate teaching the excitement that such activity generates. Many opportunities exist for interested and capable students to participate in current research projects in the department.

The department has an active undergraduate organization, the Iowa Students Psychology Association, which is open to all interested students. The group sponsors speakers, films, career days, and student symposia.

ADMISSION TO THE MAJOR

Admission to the psychology major for the Bachelor of Arts is open; any University of Iowa undergraduate student may enter the B.A. program.

Admission to the major for the Bachelor of Science is selective. To be eligible for admission to the B.S. program, students must have completed 30 s.h. of college course work (excluding any credit by exam) and must have a cumulative g.p.a. of 2.67 or higher. There is no limit on the number of qualified students admitted to the B.S. program. Students who do not meet the minimum admission requirements may petition the department in writing, presenting additional evidence of their qualifications.

Entering first-year and transfer students who have completed less than 30 s.h. of course work and are interested in entering the B.S. program are admitted to the B.A. program until they satisfy the admission requirements for the B.S. program. New transfer students who meet the admission requirements for the B.S. program may choose to enter the B.S. or the B.A. program.

Any student in the B.A. program may switch to the B.S. program if he or she meets admission requirements at the time of the request. Students may switch from the B.S. to the B.A. program at any time.

Bachelor of Arts, Bachelor of Science

The Bachelor of Arts with a major in psychology requires a minimum of 120 s.h., including 44-46 s.h. of work for the major, with at least 29 s.h. in psychology courses. The Bachelor of Science with a major in psychology requires a minimum of 120 s.h., including 53-55 s.h. of work for the major, with at least 36 s.h. in psychology courses. Students must maintain a g.p.a. of at least 2.00 in all courses for the major and in all UI courses for the major. They also must complete the College of Liberal Arts and Sciences General Education Program (p. 313). Transfer students must complete at least 15 s.h. of the major at the University of Iowa.

The major for the B.A. is designed for students who wish to gain considerable knowledge in psychology but do not necessarily plan a professional career in the discipline. It is appropriate for students preparing for careers in law, business, counseling, social work, or secondary school teaching (see "B.A. or B.S. with Teacher Licensure" below). It can be combined with a second major more easily than can the Bachelor of Science program.

The major for the B.S. emphasizes research methodology, so the B.S. may be the degree of choice for students.
who plan to do graduate work in psychology and related research fields. However, a Bachelor of Science is not required for graduate study in psychology.

Choice of a degree program should be dictated by a student's personal career goals. B.A. students interested in pursuing graduate study in psychology or other social sciences may enrich their program by taking courses in mathematics, statistics, research methods, and the natural sciences.

B.A. and B.S. students complete the same psychology core and psychology electives. The major for the B.A. also requires an additional statistics or computer science course plus a second concentration area, while the major for the B.S. also requires a pair of natural science courses, one semester of calculus, and an additional mathematics course.

The Department of Psychological and Brain Sciences enforces a strict regression policy. This rule applies to PSY:1001 Elementary Psychology. Students who have not previously taken PSY:1001 Elementary Psychology but have completed a course in psychology with a higher number may not take PSY:1001 Elementary Psychology for credit.

This rule also applies to students who want a second-grade-only option for the course. Students must retake PSY:1001 Elementary Psychology for a new grade before enrolling in or completing any other psychology course with a higher number. Students may not later retake the first introductory psychology course for a second grade after completing a more advanced course.

The psychology major requires the following courses or their equivalents.

**Common Requirements (B.A. and B.S.)**

**PSYCHOLOGY CORE (B.A. AND B.S.)**

All psychology majors (B.A. and B.S.) complete the following course work for the psychology core.

Psychology—all of these:

- PSY:1001 Elementary Psychology 3 s.h.
- PSY:2701 Biological Psychology 4 s.h.
- PSY:2810 Research Methods in Psychology 4 s.h.

Statistics—one of these (3-4 s.h.):

- STAT:1020/PSQF:1020 Elementary Statistics and Inference 3 s.h.
- STAT:1030 Statistics for Business 4 s.h.
- STAT:3510 Biostatistics (recommended for B.S. students) 3 s.h.
- STAT:4143/PSQF:4143 Introduction to Statistical Methods (recommended for B.S. students) 3 s.h.

**LOWER-LEVEL PSYCHOLOGY ELECTIVES (B.A. AND B.S.)**

B.A. and B.S. students take three of these (9 s.h.) after completing PSY:1001 Elementary Psychology.

- PSY:2301 Introduction to Clinical Psychology 3 s.h.
- PSY:2401 Introduction to Developmental Science 3 s.h.
- PSY:2501 Introduction to Social Psychology 3 s.h.
- PSY:2601 Introduction to Cognitive Psychology 3 s.h.

**UPPER-LEVEL PSYCHOLOGY ELECTIVES (B.A. AND B.S.)**

B.A. and B.S. students take three advanced psychology courses (total of 9 s.h.) after satisfactorily completing the psychology core and other specified prerequisites. Psychological and brain sciences courses (prefix PSY) numbered 3000 or above may be used to fulfill this requirement, except those in the following list.

- PSY:3994 Research Practicum in Psychology arr.
- PSY:3995 Advanced Research Practicum 1-3 s.h.
- PSY:3996 External Practicum in Psychology 1-3 s.h.
- PSY:3997 Teaching/Advising Practicum in Psychology 1-3 s.h.
- PSY:3998 Individual Readings and Projects 1-3 s.h.
- PSY:4020 Laboratory in Psychology 4 s.h.
- PSY:4090 Psychology Seminar 3 s.h.
- PSY:4990 Honors Thesis Research 1-3 s.h.

**Additional Bachelor of Arts Requirements**

**COGNATE REQUIREMENT (B.A.)**

Psychology majors earning a B.A. complete one of the following upper-level statistics or computer science courses. Students who fulfill the psychology core statistics requirement (above) with STAT:3510 Biostatistics or STAT:4143 Introduction to Statistical Methods must use a different course to fulfill the cognate requirement.

Statistics:

- ECON:2800 Statistics for Strategy Problems 3 s.h.
- STAT:3120 Probability and Statistics 4 s.h.
- STAT:3510 Biostatistics 3 s.h.
- STAT:4143 Introduction to Statistical Methods 3 s.h.
- STAT:6513 Intermediate Statistical Methods 4 s.h.

Computer science:

- CS:1020 Principles of Computing 3 s.h.
- CS:1110 Introduction to Computer Science 3 s.h.
- CS:1210 Computer Science I: Fundamentals 4 s.h.

**SECOND CONCENTRATION AREA (B.A.)**

B.A. students complete 9 s.h. of course work in a single department other than psychological and brain sciences. Courses used to fulfill this requirement must be taken at the University of Iowa and may not be used to fulfill General Education Program (p. 313) requirements. A second major or a minor may be used to fulfill the requirement.

**Additional Bachelor of Science Requirements**

**PSYCHOLOGY TOPICS COURSES (B.S.)**

Psychology majors earning a B.S. take both of these.

- PSY:4020 Laboratory in Psychology 4 s.h.
- PSY:4090 Psychology Seminar 3 s.h.
NATURAL SCIENCE COURSES (B.S.)
B.S. students are required to complete one of the following pairs of specified natural science courses (at least 7 s.h.).

One semester each of chemistry and biology
One semester each of chemistry and physics
Two semesters of chemistry
Two semesters of physics

All of these combinations can be used to fulfill the General Education Program (p. 313) natural sciences requirement. Students should consult with their advisors concerning specific courses that satisfy these requirements.

CALCULUS AND ADDITIONAL MATHEMATICS (B.S.)
B.S. students must complete at least one semester of calculus; in most cases, students also must have completed at least one precalculus mathematics course.

One of these:
MATH:1380 Calculus and Matrix Algebra for Business 4 s.h.
MATH:1460 Calculus for the Biological Sciences 4 s.h.
MATH:1550 Engineering Mathematics I: Single Variable Calculus 4 s.h.
MATH:1850 Calculus I 4 s.h.

B.S. students also complete at least one additional course in advanced mathematics, statistics, or computer science chosen from the following lists.

Mathematics:
MATH:1560 Engineering Mathematics II: Multivariable Calculus 4 s.h.
MATH:1860 Calculus II 4 s.h.
MATH:2700 Introduction to Linear Algebra 4 s.h.

Statistics:
ECON:2800 Statistics for Strategy Problems 3 s.h.
STAT:3120 Probability and Statistics 4 s.h.
STAT:6513 Intermediate Statistical Methods 4 s.h.

Computer science:
CS:1020 Principles of Computing 3 s.h.
CS:1110 Introduction to Computer Science 3 s.h.
CS:1210 Computer Science I: Fundamentals 4 s.h.

B.A. or B.S. with Teacher Licensure
Psychology majors interested in earning licensure to teach in elementary and/or secondary schools must complete the College of Education's Teacher Education Program (TEP) in addition to the requirements for the major and all requirements for graduation. The TEP requires several College of Education courses and student teaching. Contact the Office of Education Services for details.

Students must satisfy all degree requirements and complete Teacher Education Program licensure before degree conferral.

Joint B.A./M.P.H. with Community and Behavioral Health Subprogram
Bachelor of Arts students majoring in psychology who are interested in earning a Master of Public Health degree with community and behavioral health subprogram may apply to the joint B.A./M.P.H. program offered by the College of Liberal Arts and Sciences and the College of Public Health. The program permits students to count 12 s.h. of credit toward the requirements for both degrees, enabling them to begin the study of public health before they complete the bachelor's degree. For information about the public health program, see "Community and Behavioral Health Subprogram" in the Master of Public Health Program (p. 1173) section of the Catalog.

Four-Year Graduation Plan
The following checkpoints list the minimum requirements students must complete by certain semesters in order to stay on the University's Four-Year Graduation Plan. (Courses in the major are those required to complete the major; they may be offered by departments other than the major department.)

Bachelor of Arts
In addition to courses in psychology, the B.A. requires three courses in a second concentration area.

Before the third semester begins: PSY:1001 Elementary Psychology

Before the fifth semester begins: PSY:2701 Biological Psychology, statistics, and one or more lower-level electives

Before the seventh semester begins: four courses in the major (including PSY:2810 Research Methods in Psychology), one course in the second concentration area, and at least 90 s.h. earned toward the degree

Before the eighth semester begins: two additional courses in the major and an additional course in the second concentration area

During the eighth semester: enrollment in all remaining course work in the major, all remaining General Education courses, and a sufficient number of semester hours to graduate

Bachelor of Science
Note: The psychology major for the B.S. is open only to students who have earned 30 s.h. and have a g.p.a. of at least 2.67. Students must complete a natural science sequence, either as part of the General Education Program or in addition to it. Students also must complete a semester of calculus and an advanced math, statistics, or computer science course, which may require some preliminary work.

Before the third semester begins: PSY:1001 Elementary Psychology and PSY:2701 Biological Psychology

Before the fifth semester begins: calculus, statistics, and three additional courses in the major (including PSY:2810 Research Methods in Psychology)

Before the seventh semester begins: two more courses in the major, one course for the major's natural
science requirement, and at least 90 s.h. earned toward the degree.

**Before the eighth semester begins**: the advanced mathematics/statistics/computer science course and two more courses in the major.

**During the eighth semester**: enrollment in all remaining course work in the major, all remaining General Education courses, and a sufficient number of semester hours to graduate.

### Honors in the Major

Students majoring in psychology have the opportunity to graduate with honors in the major. Departmental honors students must complete PSY:4090 Psychology Seminar and write an honors thesis, which is based on an approved original honors research project that the student has conducted under the guidance of a faculty member. Interested students should contact the department’s honors advisor.

Departmental honors students must be members of the University’s honors program, which requires students to maintain a cumulative University of Iowa g.p.a. of at least 3.33; visit Honors at Iowa to learn about the University of Iowa Honors Program.

### Minor

The minor in psychology requires a minimum of 15 s.h., including 12 s.h. in psychological and brain sciences courses taken at the University of Iowa. Students must maintain a cumulative g.p.a. of at least 2.00 in all courses for the minor and all UI courses for the minor. Course work in the minor may not be taken pass/nonpass or satisfactory/fail. Before registering for a psychological and brain science course, students must complete the course’s prerequisites.

A minor in psychology complements majors in a variety of disciplines. Department advisors can help students identify courses for the minor that are especially appropriate for their major.

### National Honor Society

The department sponsors a chapter of Psi Chi, the national honor society in psychology and affiliate of the American Psychological Association. Students who have a g.p.a. of at least 3.00 overall and 3.10 in psychology course work and who have completed 9 s.h. of psychology courses may request a membership application form. Consult the department’s academic coordinator for more information.

### Graduate Programs of Study

- **Master of Arts in psychology**
- **Doctor of Philosophy in psychology**

Graduate study in psychology is designed for students seeking the Ph.D.; students enrolled in the doctoral program may elect to receive a Master of Arts when they have completed the M.A. requirements.

### Master of Arts

The Master of Arts program in psychology requires 30 s.h. of graduate credit with thesis, and 37 s.h. of graduate credit without thesis. The department ordinarily offers the M.A. only to students enrolled in the Ph.D. program.

Thesis students must earn 24 of the required 30 s.h. at the University of Iowa. Course work for the thesis program must include a statistics course, courses outside the primary specialization area, and at least an additional 8 s.h. earned in Department of Psychological and Brain Sciences courses and seminars. Thesis students also must complete an acceptable scholarly thesis and perform successfully in an oral defense of their thesis.

Nonthesis students must earn 30 of the required 37 s.h. at the University of Iowa. Course work for the nonthesis program must include a statistics course, courses outside the primary specialization area, and at least an additional 15 s.h. earned in Department of Psychological and Brain Sciences courses and seminars. Nonthesis students also must perform successfully on an examination covering their area of specialization.

### Doctor of Philosophy

The Doctor of Philosophy program in psychology requires a minimum of 72 s.h. of graduate credit. Students entering without previous graduate work usually require at least four years to complete the program; those entering with previous graduate training usually require three to five additional years in the department, depending on the nature of the earlier preparation.

The Ph.D. program places strong emphasis on preparation for research, teaching, and scholarly endeavor, whether in academic settings or in industrial, governmental, or medical institutions. The intent is to produce graduates who are deeply committed to the study of psychology, familiar with fundamental knowledge about psychological processes, well-trained in the methods and techniques for careful investigation of basic and applied problems, and determined to make contributions to the discipline of psychology and to society.

Graduate training is organized in six broad areas: behavioral and cognitive neuroscience, clinical psychology, cognition and perception, developmental science, health psychology, and social psychology (see “Graduate Training Areas” below). Each entering student is expected to identify one of these as his or her primary area and to follow a program that develops thorough understanding of the substantive material and methods of investigation central to that subdiscipline. While pursuing specialty training, all students must meet course requirements in statistics and research methods and in content areas other than their primary one.

The training area programs are sufficiently flexible to permit students to develop substantial competence in a second training area. Individually tailored programs are possible.

The 72 s.h. required for the Ph.D. includes at least 33 s.h. in Department of Psychological and Brain Sciences courses. All students must satisfy, through one of several options, requirements in statistics and research methods. They also must take course work outside the primary training area to develop a background in the discipline of psychology as a whole.

During each of the first two semesters, graduate students ordinarily take three courses—such as a statistics course, a course or two in the primary training area, and/or an outside area elective. Students also begin their research under the supervision of their advisor and with the guidance of their research advisory committee.
Near the end of the fall semester of the second year, students submit a report describing their research to date. At the beginning of the following semester, they present their research at the annual graduate research symposium.

During subsequent years, students continue selected course work in their training and interest areas and continue to develop their research programs. In addition, they develop a prospectus for the dissertation research and take the comprehensive examination, which covers material in the specialty area. The final year is devoted primarily to conducting the Ph.D. study and preparing the dissertation. In the Ph.D. final examination, students present an oral defense of their dissertation and are expected to relate the dissertation work to broader issues in the discipline of psychology.

**Graduate Training Areas**

**Behavioral and Cognitive Neuroscience**

The program in behavioral and cognitive neuroscience focuses on the analysis of learning, memory, attention, motivation, aging, sensory processing, and sleep, in both human and nonhuman subjects, through the application of behavioral and biological principles. Special faculty strengths are in classical and operant conditioning, motivation and emotion, developmental psychobiology, neurobiology of learning, comparative psychology, cognitive neuroscience, neuropharmacology, neuroendocrinology, and neuroanatomy. Students in this program have the opportunity to learn state-of-the-art techniques in computer-controlled experimentation and electronic instrumentation as well as advanced analytic and laboratory methods in neurophysiology, nonhuman neurosurgery, histology, imaging, and assays of biochemical activity.

Faculty members in the behavioral and cognitive neuroscience area interact extensively with colleagues from other divisions in the psychology department and from several basic science and clinical departments in the Carver College of Medicine, including anatomy, anesthesia, pharmacology, internal medicine, pediatrics, and neurology. These collaborative activities provide excellent research and training opportunities for students interested in emerging interdisciplinary fields such as behavioral medicine.

**Clinical Psychology**

The clinical training program emphasizes a scientific approach to the understanding of psychological disorders and the influence of psychological factors on human relationships and health. The program is accredited by the Psychological Clinical Science Accreditation System (PCSAS), has been continuously accredited by the Commission on Accreditation of the American Psychological Association since 1948, and is a charter member of the Academy for Psychological Clinical Science.

The program is designed for students who are interested primarily in helping to advance scientific understanding of clinical phenomena and in acquiring the research skills necessary to do so. Faculty members and students have active research collaborations with colleagues from many departments in the University's Carver College of Medicine and College of Public Health and at the Iowa City Veterans Affairs Medical Center. Many of the program's faculty members conduct externally funded research programs that use cutting-edge behavioral science to develop improved understanding of mechanisms, processes, and interventions for mental disorders. Faculty members have strong training records, and the program's graduates have gone on to top-tier research, teaching, and clinical service positions.

The clinical psychology program provides the first-hand clinical experience and opportunities to develop clinical competence that are integral to clinical research. It closely integrates practicum experience in the Seashore Clinic with course work and supervised research experience. Advanced students have opportunities to gain additional clinical experience through placement in the Benton Neuropsychology Clinic, Women's Wellness and Counseling Service, adult and child psychiatry clinics, the Iowa City Veterans Affairs Medical Center, and other venues. After five to six years of on-campus work, including completion of all course work and most of the dissertation, students serve a one-year internship at an approved site.

**Cognition and Perception**

The cognition and perception training area is guided by the philosophy that understanding a specific cognitive process requires an understanding of how it interacts with other cognitive processes. The area pursues empirical rigor and theoretical development, so its research is theory driven and data tested.

Research programs of the area's laboratories overlap with each other, and most content areas are studied by multiple laboratories and with multiple methodological areas of strength include categorization, computational modeling, cognitive control, language and language learning, learning and memory, visual cognition, attention, and working memory.

Students in perception and cognition take basic courses and seminars in specialty areas, but they devote most of their time to research activities. Students work closely with a faculty mentor at first and then become progressively independent as they gain knowledge and skills. The program encourages students to work with more than one faculty member, both in the program and across the department and the University. Students often combine basic research with work in areas such as neuroscience, neuropsychology, psychiatry, developmental psychology, and human factors engineering.

**Developmental Science**

The developmental science program focuses on understanding the processes that underlie change as each individual follows a unique developmental pathway. Students examine influences on development ranging from the level neurons to neighborhoods, and they work to understand the step-by-step accumulation of effects across these levels and over time. Students are taught a broad range of developmental theory and acquire expertise in multiple research paradigms, such as observational research, experimentation, computational methods, and neuroimaging. They also have the opportunity to study and collaborate with faculty members whose research cuts across domains such as perception, cognition, action, social processes, and basic biological mechanisms. Faculty members collaborate with their colleagues across the University, including those...
in the Carver College of Medicine. These collaborations provide students with a unique breadth of training.

Students take courses in many areas of developmental science as well as in other areas of psychological and brain sciences. They also have research opportunities in early communication and social development, cognitive development in infancy and childhood, neuroimaging in toddlers and adults, and developmental psychobiology. The developmental research group meets regularly in conjunction with other members of the University of Iowa's DELTA Center, providing students and faculty members the opportunity to present and discuss their own research as well as to gain exposure to other developmental work being conducted in the department and at the University.

Health Psychology
The health psychology program is concerned with application of psychological theory, methods, and treatment to understanding of physical health and illness as well as understanding biobehavioral factors that contribute to disease onset and progression. The program's perspective is based on the biopsychosocial model, which posits that biological, psychological, and social processes are integrally and interactively involved in physical health and illness.

Graduate training in health psychology emphasizes the integration of knowledge about biological, psychological, and social factors. Students are involved in research whose content and methods reflect the biopsychosocial perspective. Training in health psychology is facilitated by the faculty's longstanding collaborations with medical practitioners and researchers at the University's Carver College of Medicine and University of Iowa Hospitals and Clinics. Availability of medical populations and state-of-the-art medical technologies afford a unique opportunity for doctoral students in health psychology.

Research areas of the health psychology program include stress and illness, psychoneuroimmunology, patient adherence, animal models of hypertension and heart failure, postpartum depression, women's health issues, and psycho-oncology.

Students who are interested in clinical training with a focus on health psychology should apply directly to the clinical program and indicate an interest in clinical health psychology.

Social Psychology
The social psychology program offers a variety of perspectives on interpersonal and intrapersonal processes. Examples of research foci of faculty and students are social-cognitive processes, attitudes, stereotyping and prejudice, social comparison, judgment and decision making, compassion and altruism, moral judgment, emotion, social motivation, parent-child relationships, temperament and individual differences in childhood, and social and emotional development.

Graduate training in the social psychology program is designed primarily to prepare students for careers in psychology research and teaching. In addition to their experiences and coursework in the program and in the Department of Psychological and Brain Sciences, students can benefit from opportunities in related academic units at the University, such as the Departments of Sociology, Communication Studies, and Statistics and Actuarial Science and the Tippie College of Business. Such experience can broaden a student's training, research opportunities, and employment prospects.

Admission
Since the graduate program in psychology is designed primarily for students seeking the Ph.D., all applicants are considered on that basis. Occasionally, a qualified applicant who is in good standing in another UI graduate program and is interested in advanced work in psychology only through the M.A. level may be admitted to pursue a joint graduate program. Students interested in such a program should contact the department chair before filing an application.

The application deadline is December 1. For all materials to be on file by that date, applicants should take the Graduate Record Examination (GRE) General Test in October, and no later than November. The subject test in psychology is not required. Applications may be submitted any time but are considered only once each year—between December 1 and February 1—for admission the following fall. Admission decisions are based on a composite consideration of prior academic and research performance; letters of reference; scores on the verbal, quantitative, and analytic writing sections of the GRE General Test; and the applicant's statement about background and purpose. Admission materials are reviewed initially by faculty members in the applicant's primary training area.

An undergraduate major in psychology—including a laboratory course in experimental psychology, a course in statistics, and additional work in the natural sciences and in mathematics—is desirable but not required. Students who have not had such a background but are strongly qualified on other grounds may be admitted. They are expected to remedy deficiencies through special course work or independent study before embarking on the regular graduate program.

Applicants must meet the admission requirements of the Graduate College; see the Manual of Rules and Regulations of the Graduate College.

Financial Support
All students admitted to the Ph.D. program in psychology are guaranteed five years of financial support, as long as they make satisfactory progress and remain in good academic standing. Financial support is provided through fellowships, teaching assistantships, research assistantships, and traineeships, depending on merit and availability. No separate application for financial aid is required.

Faculty
Faculty members of the Department of Psychological and Brain Sciences are nationally and internationally renowned leaders in a variety of subdisciplines. Their research is funded by numerous federal and private research grants, their findings are documented in many publications, and their accomplishments have won many awards.

Facilities
The department's facilities for graduate training and research are among the finest in the country. The Kenneth W. Spence Laboratories of Psychology, adjoining space in Seashore Hall, and the newly renovated Stuit
Hall provide a variety of laboratories for human and animal studies. Facilities include animal housing areas; a histology laboratory; observation suites with remote audiovisual control and recording equipment; soundproof chambers; electrophysiological recording rooms; conditioning laboratories; the Seashore Clinic; and well-equipped electronic, mechanical, and woodworking shops. Computers are widely available. Office space for graduate students and faculty members is provided in Seashore Hall.

The research and teaching activities of the department benefit greatly from the facilities and staff of other University and local agencies, including University of Iowa Hospitals and Clinics, the Iowa City Veterans Affairs Medical Center, the University Counseling Service, the Center for Disabilities and Development, the Wendell Johnson Speech and Hearing Clinic, the Center for Health Policy and Research, and the School of Social Work.

Courses

Lower-Level Undergraduate

The following courses are open to first-year students who have satisfactorily completed an introductory psychology course (PSY:1001 Elementary Psychology or equivalent).

PSY:2301 Introduction to Clinical Psychology
PSY:2401 Introduction to Developmental Science
PSY:2501 Introduction to Social Psychology
PSY:2601 Introduction to Cognitive Psychology
PSY:2701 Biological Psychology
PSY:2910 Industrial/Organizational Psychology

PSY:1000 First-Year Seminar 1 s.h.
Small discussion class taught by a faculty member; topics chosen by instructor; may include outside activities (e.g., films, lectures, performances, readings, visits to research facilities, field trips). Requirements: first- or second-semester standing.

PSY:1001 Elementary Psychology 3 s.h.
Psychology as a behavioral science. GE: Social Sciences.

PSY:2130 Advanced Psychology for Pre-Medical Track 3 s.h.
Psychology as a behavioral science; elementary psychology in more depth, advanced topics. Prerequisites: PSY:1001. Requirements: non-psychology major.

PSY:2301 Introduction to Clinical Psychology 3 s.h.
Introduction to abnormal psychology; scientist-practitioner model, training, ethics, research methods in clinical psychology; current approaches to intellectual, personality, behavioral assessment; theories, research on treatment of psychological disorders. Prerequisites: PSY:1001. GE: Social Sciences.

PSY:2401 Introduction to Developmental Science 3 s.h.

Current research in developmental science; prenatal development, brain development, motor and physical development, perceptual development, language development, cognitive development, aspects of socio-emotional development; emphasis on modern theoretical approaches. Prerequisites: PSY:1001. GE: Social Sciences.

PSY:2501 Introduction to Social Psychology 3 s.h.
Research and theories on people's thoughts, feelings, and behaviors in social situations; attitudes, attributions, person perception, aggression, stereotypes and prejudice, attraction, relationships, social influence, group processes, altruism. Prerequisites: PSY:1001.

PSY:2601 Introduction to Cognitive Psychology 3 s.h.
Individual human cognition; perception, attention, memory, language, learning, problem solving, decision making, thought considered from viewpoint of information processing. Prerequisites: PSY:1001.

PSY:2701 Biological Psychology 4 s.h.
Biological mechanisms of behavior; comparative study of behavior, behavioral organization, animal intelligence, social behavior, communication; behavioral neuroscience, how brain systems control sensation, movement, homeostasis, emotion, learning. Prerequisites: PSY:1001.

PSY:2810 Research Methods in Psychology 4 s.h.
Logic of experimental and nonexperimental methods, application of methods to analysis of behavioral phenomena; skills for critical evaluation of professional and public literature dealing with scientific study of behavior: philosophy of scientific psychology, principles of research design and control, psychological testing, applications in several research areas. Prerequisites: PSY:1001 and (PSQF:1020 or PSQF:4143 or SOC:2160 or STAT:1020 or STAT:1030 or STAT:3510 or STAT:4143).

PSY:2910 Industrial/Organizational Psychology 3 s.h.
Applications of psychology to problems in world of work; emphasis on personnel selection, training, attitudes, motivation, measurement of job performance. Prerequisites: PSY:1001.

PSY:2930 Abnormal Psychology: Health Professions 3 s.h.
Introduction to psychological disorders; description of psychopathology; general issues in etiology and treatment; for non-psychology students in allied health professions. Prerequisites: PSY:1001. Requirements: non-psychology major.

Upper-Level Undergraduate and Graduate

Before enrolling in any upper-level undergraduate courses, students must complete all specified lower-level prerequisites or obtain consent of instructor.
PSY:3010 Health Psychology 3 s.h.
Psychological contributions to understanding etiology, prevention, treatment of physical illness; basic and clinical research that addresses reciprocal effects of behavior and physical health. Prerequisites: PSY:2701. Requirements: grade of C- or higher in PSY:2301 or PSY:2501 or PSY:2701, and grade of C- or higher in PSY:2810.

PSY:3015 Psychology of Interpersonal Relations 3 s.h.
Theories, empirical findings, speculation from social psychology and related disciplines regarding how people form, maintain, and alter close, interpersonal relationships. Prerequisites: PSY:2701. Requirements: grade of C- or higher in PSY:2301 or PSY:2501 and grade of C- or higher in PSY:2810.

PSY:3020 Mind and Behavior 3 s.h.
Theories of what it is to act and know, of what intelligence might be in animals, humans, machines; perspectives from philosophy, psychology. Prerequisites: PSY:2701. Requirements: grade of C- or higher in PSY:2601 or PSY:2701, grade of C- or higher in PSY:2810, and junior or senior standing.

PSY:3030 Social and Personality Development 3 s.h.
Emotional, social, and personality development from infancy to adolescence; major theories and empirical research; child temperament, parent-child relationship, and social context as contributors to individual differences. Prerequisites: PSY:2701. Requirements: grade of C- or higher in PSY:2401 or PSY:2501 and grade of C- or higher in PSY:2810.

PSY:3040 Psychology of Learning 3 s.h.
Psychological science of acquired behavior; interests in experimental study of Pavlovian conditioning, operant conditioning, cognition in humans and nonhuman animals, relevance to behavioral adaptation. Prerequisites: PSY:2701. Requirements: grade of C- or higher in PSY:2601 or PSY:2701 and grade of C- or higher in PSY:2810.

PSY:3060 Visual Perception and Cognition 3 s.h.
Psychological and neurophysiological examination of vision. Prerequisites: PSY:2701. Requirements: grade of C- or higher in PSY:2601 or PSY:2701 and grade of C- or higher in PSY:2810.

PSY:3065 The Aging Mind and Brain 3 s.h.
Current theories and research on biological, cognitive, and emotional changes that occur during aging; methodologies for studying cognitive and brain aging. Prerequisites: PSY:2701. Requirements: grade of C- or higher in PSY:2601 or PSY:2701 and grade of C- or higher in PSY:2810.

PSY:3071 Cognition and the Brain 3 s.h.
Analysis of brain systems and neuroanatomy that underlie cognitive tasks such as vision, hearing, emotion, attention, language, decision making, learning, and memory. Prerequisites: PSY:2701. Requirements: grade of C- or higher in PSY:2601 or PSY:2701, and grade of C- or higher in PSY:2810.

PSY:3085 Language Development 3 s.h.
Introduction to first language acquisition, with focus on infancy through five years; sound discrimination abilities, word learning, babbling and speech production, acquisition of grammar; perspectives from psychology, audiology, linguistics, speech pathology. Prerequisites: PSY:2701. Requirements: grade of C- or higher in PSY:2401 or PSY:2601 and grade of C- or higher in PSY:2810. Same as SLA:3401.

PSY:3090 Psychology of Workplace Behaviors 3 s.h.
Introduction to theory and research of workplace and work-related behaviors; focus on industrial and organizational psychology. Prerequisites: PSY:2701. Requirements: grade of C- or higher in PSY:2501 or PSY:2601, and grade of C- or higher in PSY:2810.

PSY:3095 Psychology of Relationship Violence 3 s.h.
Introduction to psychological theory and research on violence in relationships; topics will include intimate partner violence, sexual assault and rape, sexual harassment, and stalking; includes a service learning component. Prerequisites: PSY:2701. Requirements: grade of C- or higher in PSY:2301 or PSY:2501 and grade of C- or higher in PSY:2810, or graduate standing.

PSY:3210 Animal Cognition 3 s.h.
Mental functions of animals, comparison to humans; intelligence, memory, communication, language, social learning, consciousness, human-animal interaction. Requirements: grade of C- or higher in PSY:2701 and grade of C- or higher in PSY:2810.

PSY:3220 Behavioral Neuroscience 3 s.h.
Basic concepts and techniques in neurosciences, their application to analysis of sensory processes, arousal mechanisms, motivation, learning. Requirements: grade of C- or higher in PSY:2701 and grade of C- or higher in PSY:2810.

PSY:3230 Psychopharmacology 3 s.h.
How drugs act to influence behavior; general principles of drug action on the nervous system; licit and illicit drugs, use/abuse, historical perspective on drug use. Requirements: grade of C- or higher in PSY:2701 and grade of C- or higher in PSY:2810.

PSY:3240 Motivation, Addiction, and the Brain 3 s.h.
Analysis of motivated behaviors (e.g., behaviors to obtain specific goals, such as food) and the brain processes that guide such behavior; exploration of brain processes underlying addiction. Prerequisites: PSY:2701. Requirements: grade of C- or higher in PSY:2701 and grade of C- or higher in PSY:2810.

PSY:3250 Neuroscience of Learning and Memory 3 s.h.
Major topics in the neuroscience of learning and memory; focus on anatomical, cellular, molecular bases of various learning and memory processes. Requirements: grade of C- or higher in PSY:2701 and grade of C- or higher in PSY:2810.
PSY:3270 Neurobiology of Stress 3 s.h.
Introduction to concept of stress and physiological systems involved; factors modulating stress vulnerability versus resilience; stress interactions with other systems with health relevance; emphasis on current research on brain mechanisms. Requirements: grade of C- or higher in PSY:2701 and grade of C- or higher in PSY:2810.

PSY:3280 Introduction to Health Biopsychology 3 s.h.
Physiological basis of behavior and cognition; interaction between brain and body in normal and pathological states. Requirements: grade of C- or higher in PSY:2701 and grade of C- or higher in PSY:2810.

PSY:3320 Abnormal Psychology 3 s.h.
Etiology, phenomenology, and treatment of child and adult DSM-IV psychological disorders (e.g., mood disorders, psychotic disorders, anxiety disorders, personality disorders). Prerequisites: PSY:2701. Requirements: grade of C- or higher in PSY:2301 and grade of C- or higher in PSY:2810.

PSY:3330 Childhood Psychopathology 3 s.h.
Major forms of childhood psychopathology; current theoretical approaches and methodological issues in diagnosis, conceptualization, treatment of developmental psychopathology. Prerequisites: PSY:2701. Requirements: grade of C- or higher in PSY:2301 and grade of C- or higher in PSY:2810.

PSY:3340 Behavior Modification 3 s.h.
Basic approaches to modification of clinically distressing behavior; learning theory principles underlying techniques, translation into procedures, experimental evaluation of effectiveness. Prerequisites: PSY:2701. Requirements: grade of C- or higher in PSY:2301 and grade of C- or higher in PSY:2810.

PSY:3350 Psychotherapies 3 s.h.
Current theories and research on frequently used psychotherapeutic approaches; focus on methodology in psychotherapy research, specific types of therapy, and empirically supported therapies. Prerequisites: PSY:2701. Requirements: grade of C- or higher in PSY:2301 and grade of C- or higher in PSY:2810.

PSY:3420 Cognitive Development of Children 3 s.h.
Developmental research, theory concerning children's concepts, thinking, problem solving, memory, communication. Prerequisites: PSY:2701. Requirements: grade of C- or higher in PSY:2401 and grade of C- or higher in PSY:2810.

PSY:3451 Infant Development 3 s.h.
Physical, motor, perceptual, cognitive, and social development during first two years of life; focus on early mechanisms of change; locomotion, perceptual abilities, precursors of cognition, early language acquisition, social interaction. Prerequisites: PSY:2701. Requirements: grade of C- or higher in PSY:2810 and grade of C- or higher in PSY:2401.

PSY:3530 Personality 3 s.h.
Classic theoretical models and contemporary empirical research in personality, including influence of heredity and environment, consistency and stability of behavior. Prerequisites: PSY:2701. Requirements: grade of C- or higher in PSY:2301 or PSY:2501 and grade of C- or higher in PSY:2810.

PSY:3540 Attitude Change 3 s.h.
Current theoretical approaches; laboratory and field methods of research; basic processes of change considered within broader framework of psychology. Prerequisites: PSY:2701. Requirements: grade of C- or higher in PSY:2301 and grade of C- or higher in PSY:2810.

PSY:3560 Psychology of Gender 3 s.h.
Origins of gender roles, gender socialization in childhood, gender differences across lifespan; research on gender differences in cognition, emotions, behavior, physical and mental disorders, communication. Prerequisites: PSY:2701. Requirements: grade of C- or higher in PSY:2301 and grade of C- or higher in PSY:2810.

PSY:3570 Social Cognition 3 s.h.
Research and theory on cognitive structures and processes that underlie judgment, decision, belief, and behavior in social situations; attribution, heuristics, schemas, person perception, stereotypes, attitudes. Prerequisites: PSY:2701. Requirements: grade of C- or higher in PSY:2501 and grade of C- or higher in PSY:2810.

PSY:3580 Judgment and Decision Making 3 s.h.
Processes and biases that shape judgments and decisions of various types (e.g., about other people, the future, competitions, products, medical treatments, health risks, crime suspects). Prerequisites: PSY:2701. Requirements: Grade of C- or higher in PSY:2501 and grade of C- or higher in PSY:2810.

PSY:3590 Stigma and Prejudice 3 s.h.
Research and theory on prejudice, stigmatization, stereotyping and discrimination, focusing on nature, origins, and impact of prejudice and stigma. Prerequisites: PSY:2701. Requirements: grade of C- or higher in PSY:2501 and grade of C- or higher in PSY:2810.

PSY:3620 Human Memory 3 s.h.
Contemporary psychological theory and research on short-term and long-term memory, acquisition processes, related topics in cognition. Prerequisites: PSY:2701. Requirements: grade of C- or higher in PSY:2601 and grade of C- or higher in PSY:2810.

PSY:3660 Human Information Processing 3 s.h.
Early through contemporary theory and research on human information processing; focus on human-machine interaction and ergonomics. Prerequisites: PSY:2701. Requirements: grade of C- or higher in PSY:2501 or PSY:2601, and grade of C- or higher in PSY:2810; or graduate standing.
PSY:3670 Language Processes 3 s.h.
Psychological processes involved in using languages, including speech perception and production, the meaning of words, understanding and producing sentences, and basics of discourse and pragmatics; developmental and neural bases of language processes. Prerequisites: PSY:2701. Requirements: grade of C- or higher in PSY:2810, and psychology major; or nonmajor and CSD:1015 or LING:3001. Same as LING:3670.

PSY:3994 Research Practicum in Psychology 3 s.h.
Small-group participation in faculty research projects; literature review, study planning, data collection, analysis, interpretation, write-up.

PSY:3995 Advanced Research Practicum 1-3 s.h.
Individual participation in faculty research projects; significant reading and writing. Requirements: two semesters of PSY:3994 or HONR:3994.

PSY:3996 External Practicum in Psychology 1-3 s.h.
Student participation in career-related professional activities in community and University of Iowa agencies.

PSY:3997 Teaching/Advising Practicum in Psychology 1-3 s.h.
Participation in faculty teaching as undergraduate teaching assistant or the Psychology Peer Advisor Program.

PSY:3998 Individual Readings and Projects 1-3 s.h.
Requirements: psychology major and undergraduate standing.

PSY:4020 Laboratory in Psychology 4 s.h.
Laboratory study of an aspect of behavior; topics in a particular area (e.g., learning and memory, perception, social behavior, operant behavior, physiological processes). Prerequisites: PSY:2701. Requirements: grade of C- or higher in PSY:2810.

PSY:4090 Psychology Seminar 3 s.h.
Readings from original sources, presentations, papers, student participation. Requirements: PSY:2701. Requirements: grade of C- or higher in PSY:2810, psychology B.S. enrollment, and senior standing.

PSY:4990 Honors Thesis Research 1-3 s.h.
Supervised original project; leads to written thesis, oral defense. Requirements: honors standing.

Graduate

PSY:5050 Quantitative Methods in Psychology 4 s.h.
Overview of statistical methods based on the general linear model, including ANOVA, ANCOVA, and multiple regression; how to conduct these analyses using SPSS. Requirements: first-year graduate standing in psychology.

PSY:5055 Mixed-Effects Modeling in Psychology 4 s.h.
Introduction to mixed-effects analysis of hierarchically structured and cross-classified psychological data using R. Prerequisites: PSY:5050.

PSY:5203 Fundamental Neurobiology 4 s.h.
Neurobiology from molecular/cellular to systems levels, including cell biology of neuron; membrane electrophysiology, synaptic transmission and plasticity, functional neuroanatomy, sensory systems from periphery to CNS, peripheral and central motor systems, autonomic systems emotion, memory, sleep, language, attention and cognition, development of nervous system; discussion of classic and recent journal articles. Same as BIOL:5653, NSCI:5653.

PSY:5210 Fundamentals of Behavioral Neuroscience 4 s.h.
Concepts, methods, and findings in behavioral and cognitive neurosciences; emphasis on principles of neuroscience, sensation, motivation, emotion. Same as NSCI:5210.

PSY:5212 Foundations in Behavioral and Cognitive Neuroscience 4 s.h.
Concepts, methods, and findings in behavioral and cognitive neurosciences. Prerequisites: BIOL:3253 or PSY:5210 or NSCI:5210. Same as NSCI:5212.

PSY:5320 Descriptive Psychopathology 3 s.h.
Psychiatric syndromes, including description, etiology, experimental and clinical research; development, function of classification systems.

PSY:5330 Principles of Psychological Assessment 4 s.h.
Assessment theory and basic psychometric principles in test construction, evaluation, application; ethical, social, psychological, psychometric issues and controversies in assessment.

PSY:5365 Seminar: Neuropsychology and Neuroscience 3 s.h.
Clinical neuropsychology and cognitive neuroscience: cutting-edge research from scientific journals, case presentations in clinical neuropsychology, and current research. Same as NEUR:5365, NSCI:5365.

PSY:5410 Proseminar in Developmental Science 3 s.h.
Introduction to developmental process and developmental science; topics organized around mechanisms of development, with cross-disciplinary focus.

PSY:5610 Proseminar in Cognition and Perception 3 s.h.
Broad overview of study of cognition, including cognitive psychology, computer science and artificial intelligence, linguistics, neuroscience, philosophy of mind.

PSY:5710 Introduction to Health and Behavioral Science 3 s.h.
Evolution of health psychology; survey of major physiological systems in which pathology is affected by behavioral processes; review of theoretical approaches, experimental paradigms from behavioral science as they may apply to assessment of health problems; prevention, intervention, psychological adaptation to physical disease.

**PSY:6050 Clinical Behavioral Medicine**  
3 s.h.  
Biopsychosocial framework applied to study, treatment of chronic and acute physical conditions; clinical concepts, procedures.

**PSY:6101 Cognitive Science of Language Proseminar I**  
3 s.h.  
Survey of five major disciplines within language sciences: formal linguistic, communication disorders, psychological, neuroscience, and computational approaches. Requirements: graduate standing in communication sciences and disorders, linguistics, psychology, or neuroscience. Same as CSD:6101, LING:6101.

**PSY:6102 Cognitive Science of Language Proseminar II**  
3 s.h.  
Survey of five major disciplines within language sciences: formal linguistic, communication disorders, psychological, neuroscience, and computational approaches. Requirements: graduate standing in communication sciences and disorders, linguistics, psychology, or neuroscience. Same as CSD:6102, LING:6102.

**PSY:6210 Behavioral Pharmacology**  
3 s.h.  
Behavioral analysis of drug action; emphasis on physiological and biological mechanisms underlying behavioral processes in experimental animals, humans.

**PSY:6230 Foundations of Learning, Memory, and Cognition**  
3 s.h.  
Determinants of adaptive behavior in humans and animals; emphasis on behavioral analysis of learning, memory, and cognition; relevance of laboratory research to real life activities.

**PSY:6265 Neuroscience Seminar**  
0-1 s.h.  
Research presentations. Offered fall and spring semesters. Same as ACB:6265, MPB:6265, NSCI:6265, BIOL:6265.

**PSY:6270 Fundamentals of Health Biopsychology**  
3 s.h.  
Biological basis of behavior and cognition in relation to disordered regulation of body-brain systems in pathological states.

**PSY:6280 Structural and Functional MRI Methods and Application**  
3 s.h.  
Introduction to basic principles of magnetic resonance imaging and its application to psychology; imaging of brain structure; focus on functional MRI. Requirements: graduate-level introductory statistics.

**PSY:6340 Psychological Therapies**  
3 s.h.  
Historical development and current status of empirically based therapies for psychological disorders, including anxiety, depression, schizophrenia, childhood disorders; emphasis on critical evaluation of therapy techniques.

**PSY:6350 Ethics and Professional Concerns**  
arr.  
Major ethical and legal issues relevant to clinical psychologists' varied roles; understanding of legal and ethical issues encountered by psychologists in varied settings, development of personal working model for resolving ethical and professional concerns.

**PSY:6370 Principles of Neuropsychology**  
3 s.h.  
Principles of human neuropsychology, including foundations (history, methods, approaches), major functional systems (vision, memory, language, spatial processing), executive functions (emotional processing and personality), and applications (experimental, clinical). Recommendations: prior course work in psychological assessment, psychopathology, and neuroanatomy.

**PSY:6440 Developmental Cognitive Neuroscience**  
3 s.h.  
Overview of current developmental cognitive neuroscience theory, research, and methods (PET, fMRI, optical imaging, EEG, ERPs); neural development, computational neuroscience, and methods.

**PSY:6450 Processes of Language Acquisition**  
3 s.h.  
Theoretical and computational approaches to the study of first language acquisition from infancy to five years, including prelinguistic sound discrimination, babbling, semantic development, categorization abilities, syntactic and grammatical development.

**PSY:6460 Translating Developmental Science to Applied Problems**  
3 s.h.  
Relationship between basic and applied research in development; individual differences work and how applied work informs theory.

**PSY:6480 Computational Approaches to Development**  
3 s.h.  
Use of computational models to understand development; model development, specific approaches, model evaluation, and hands-on model work.

**PSY:6490 Dynamic Systems and Development**  
3 s.h.  
Dynamical systems theory, its application to basic problems in developmental psychology; development of motor control, cognition, language; comparisons with other theoretical approaches in developmental psychology.

**PSY:6510 Advanced Social-Personality Psychology**  
3 s.h.  
Classic and contemporary theory, research, methodological issues in social-personality psychology.

**PSY:6520 Attitudes and Persuasion**  
3 s.h.  
Classic and current theories and findings on persuasion, the formation and measurement of attitudes.

**PSY:6530 Advanced Social Cognition**  
3 s.h.  
Research and theory on cognitive processes that underlie judgment, decision, belief, and behavior in social situations; attribution, heuristics, counterfactual thinking, schemas, person perception, stereotypes, attitudes.
PSY:6550 Advanced Social and Personality Development 3 s.h.
Theory and research on social and personality development; overview of development and individual differences in emotions, temperament, attachment, self, social cognition, conscience; influence of biological factors, social relationships, and broader ecology on adaptive and maladaptive developmental pathways.

PSY:6560 Stereotyping, Prejudice, and Discrimination 3 s.h.
Theory and research on origins and mechanisms of stereotyping, prejudice, and discrimination; implications for perceivers, targets, and interpersonal interactions.

PSY:6620 Computational Modeling of Cognition 3 s.h.
Introduction to computational modeling as a methodology for studying cognition; computational models' role and use as a framework for thinking about cognition; emphasis on hands-on simulation exercises.

PSY:6640 Visual Perception 3 s.h.
Theoretical and empirical analyses of low- and high-level visual functions, including edge detection, surface representation, object identification.

PSY:6650 Attention 3 s.h.
Theory and research on attention, from viewpoints of cognitive psychology and cognitive neuroscience, including historical perspectives, recent approaches.

PSY:6740 Drug Addiction 3 s.h.
Analysis of factors involved in drug addiction; social, clinical, and biological processes.

PSY:7000 Seminar: Cognitive Neuroscience 0-2 s.h.
Neurological and behavioral investigations of attention, perception, learning, memory, decision making, planning; contemporary models, theories.

PSY:7010 Seminar: Health Psychology 0-3 s.h.
Theoretical and methodological issues; focus on specific topics (i.e., chronic disease, psychoneuroimmunology).

PSY:7020 Seminar: Behavioral Biomedical Interface 1 s.h.
Ongoing seminar; discussion of research at behavioral-biomedical interface. Requirements: acceptance to Behavioral Biomedical Interface Training Program.

PSY:7030 Seminar: Behavioral Biomedical Interface 1 s.h.
Ongoing seminar; discussion of research at behavioral-biomedical interface. Requirements: acceptance to Behavioral Biomedical Interface Training Program.

PSY:7090 Principles of Scholarly Integrity: Psychology 1 s.h.
Training in responsible conduct of research; focus on psychological research and scholarly activities; student/mentor responsibilities; authorship; plagiarism/falsification/fabrication of data; intellectual property; conflict of interest; fiscal, institutional, societal; treatment of human and animal subjects. Requirements: enrollment in graduate psychology program.

PSY:7095 Principles of Scholarly Integrity: Psychology 0 s.h.

Training in responsible conduct of research and scholarly activities; student/mentor responsibilities; authorship; plagiarism/falsification/fabrication of data; intellectual property; conflict of interest; fiscal, institutional, societal; treatment of human and animal subjects. Requirements: postdoctoral standing in psychology.

PSY:7110 Research Projects arr.

PSY:7120 M.A. Thesis Research arr.

PSY:7130 Ph.D. Dissertation Research 3 s.h.

PSY:7150 Current Topics in Psychology 3 s.h.

PSY:7160 Problems in Psychology arr.
Individual study.

PSY:7170 Teaching Practicum arr.
Supervised practice in teaching.

PSY:7210 Seminar: Advanced Topics in Behavioral and Cognitive Neuroscience 3 s.h.
Prerequisites: PSY:5210.

PSY:7310 Seminar: Orientation to Clinical Research 0-1 s.h.
Issues in clinical research, including use of databases, advisor/advisee relationships, preparation of IRB proposals, paper presentation and publication, common early career problems, funding resources.

PSY:7350 Introductory Practicum arr.
Orientation to Department of Psychology clinic, including instruction in interviewing, observation of clinic procedures, attendance at clinic rounds under supervision of clinical psychology faculty members.

PSY:7355 Assessment Practicum arr.
Supervised practice in psychological assessment techniques.

PSY:7360 Therapy Practicum arr.
Supervised practice and clinical experience in application and evaluation of psychological therapies.

PSY:7365 External Practicum arr.
Supervised practice and clinical experience in field setting; psychological assessment techniques and/or application, evaluation of psychological therapies.

PSY:7370 Supervision and Consultation Practicum arr.
Supervision and training of less advanced students; consultation to other programs and agencies.

PSY:7430 Seminar: Cognitive Development 0-3 s.h.
Theoretical, methodological issues focused on cognitive and perceptual development.

PSY:7510 Seminar: Social Psychology 1 s.h.
Professional issues, current topics relevant to social psychologists.

PSY:7610 Seminar: Cognitive Psychology 2 s.h.
Religious Studies

Chair
• Diana Fritz Cates

Undergraduate major: religious studies (B.A.)
Undergraduate minor: religious studies
Graduate degrees: M.A. in religious studies; Ph.D. in religious studies
Faculty: http://clas.uiowa.edu/religion/people/faculty
Web site: http://clas.uiowa.edu/religion/

The Department of Religious Studies encourages multidisciplinary inquiry into religious ideas, experiences, philosophies, cultural expressions, and social movements. It studies a rich array of traditions and paths, including South Asian religions, ancient Judaism and early Christianity, African diaspora and Native American traditions, Chinese Buddhism, modern European Christianity, various Islamic sects, popular religions in Japan, American Christianities, and new forms of religion that many people may not yet recognize as religions.

Religion has taken countless forms over the millennia, and it continues to wind its way through history. The Department of Religious Studies helps students to think clearly and creatively about the many forms that religion takes and the subtle ways in which it operates.

Students gain many benefits through the critical study of religion. They learn how people from around the world have responded to age-old questions about life, love, suffering, and death. In the process, they deepen their own engagement with life. They learn about religion's impact on global events, especially its influences on the construction of personal and communal identities, and its roles in shaping processes of social change, historically and in the contemporary, digital era.

Undergraduate Programs of Study

• Major in religious studies (Bachelor of Arts)
• Minor in religious studies

The major in religious studies helps students gain strengths they will need in an increasingly globalized world: curiosity, open-mindedness, critical thinking and effective communication skills, global cultural competency, knowledge of diverse religions and their influences, and the ability to use intelligence and creativity in addressing humanitarian concerns.

Because religious ideas inform every aspect of life, many students who major in religious studies choose to earn a second major in another discipline, such as anthropology, biology, classics, English, history, journalism and mass communication, philosophy, political science, or psychology. Religious studies students often go on to graduate school, professional study in law, medicine, or dentistry; and careers in nursing, social work, human rights, nongovernmental organizations, counseling, or business, especially in areas that involve human resource management.

Bachelor of Arts

The Bachelor of Arts with a major in religious studies requires a minimum of 120 s.h., including 30 s.h. of work for the major. Students must maintain a g.p.a. of at least 2.00 in all courses for the major and in all UI courses for the major. They also must complete the College of Liberal Arts and Sciences General Education Program (p. 313). A maximum of 15 s.h. of transfer credit may be counted toward the major; transfer credit is evaluated individually.

Course work for the major includes core courses and electives. Courses for the major may not be taken pass/nonpass. Students may count a maximum of three religious studies courses toward General Education Program requirements.

The major in religious studies requires the following course work.

**CORE COURSES**

Both of these (6 s.h.):

RELS:1015 Religions in a Global Context: The Critical Role of Religion in International Affairs 3 s.h.
RELS:4950 Senior Majors Seminar 3 s.h.

The course RELS:1015 Religions in a Global Context: The Critical Role of Religion in International Affairs provides an introduction to the study of the world's religions; students should take it as early as possible.

The capstone course RELS:4950 Senior Majors Seminar is offered each spring semester. Ideally, students take it during their senior year, but they may take it during their junior year.

**ELECTIVES**

Students complete 24 s.h. of elective course work (at least eight courses) chosen from either or both of two categories: religious traditions and critical issues (listed below). Students choose courses as follows.

At least two foundation courses numbered 1000-1999 6 s.h.
At least three advanced courses numbered 2000-4999 9 s.h.
At least three courses at any level 9 s.h.

The department advises students to choose electives that will enable them to examine a variety of traditions and issues.

**Religious Traditions**

Courses in this category generally focus on religious traditions or movements in historical perspective, within particular geographical areas, or across regions. They may address foundational stories of creation and cosmic order, archaeological findings, the compilation and interpretation of revered texts, religious doctrines, social norms, rituals and practices, or conflicts and schisms.

RELS:1000 First-Year Seminar 1 s.h.
RELS:1001 The Judeo-Christian Tradition 3 s.h.
RELS:1070 Introduction to the Hebrew Bible/Old Testament 3 s.h.
RELS:1080 Introduction to the New Testament 3 s.h.
RELS:1113 Gateway to the Bible 3 s.h.
RELS:1130 Introduction to Islamic Civilization 3 s.h.
RELS:1225 Medieval Religion and Culture 3 s.h.
RELS:1250 Modern Religion and Culture 3 s.h.
RELS:1323 Life in the Biblical World 3 s.h.
RELS:1410 Introduction to Indian Religions 3 s.h.
### Critical Issues Courses

Critical issues courses generally focus on ideas, arguments, or problems, often with reference to influential texts or oral traditions. They may explore religious perspectives on the nature of reality or the meaning of human existence, and they may focus on issues of gender, sexuality, race, ethnicity, class, globalization, human rights, or law and politics.

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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>RELS:1000</td>
<td>First-Year Seminar</td>
<td>1 s.h.</td>
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<tr>
<td>RELS:1350</td>
<td>Introduction to African American Religions</td>
<td>3 s.h.</td>
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<tr>
<td>RELS:1404</td>
<td>Living Religions of the East</td>
<td>3 s.h.</td>
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<tr>
<td>RELS:1702</td>
<td>Religion in America Today</td>
<td>3 s.h.</td>
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<td>RELS:1810</td>
<td>Longing for Freedom</td>
<td>3 s.h.</td>
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<tr>
<td>RELS:1903</td>
<td>Quest for Human Destiny</td>
<td>3 s.h.</td>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tr>
<td>RELS:1506</td>
<td>Introduction to Buddhism</td>
<td>3 s.h.</td>
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<tr>
<td>RELS:1510</td>
<td>Gods, Buddhas, and Ghostly Officials: The Past and Present of Chinese Religions</td>
<td>3 s.h.</td>
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<tr>
<td>RELS:1610</td>
<td>Japanese Religions</td>
<td>3 s.h.</td>
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<td>RELS:2090</td>
<td>Issues in American Catholicism</td>
<td>3 s.h.</td>
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<tr>
<td>RELS:2182</td>
<td>Ancient Mediterranean Religions</td>
<td>3 s.h.</td>
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<tr>
<td>RELS:2225</td>
<td>Messianic and Apocalyptic Prophecy in the Bible</td>
<td>3 s.h.</td>
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<tr>
<td>RELS:2272</td>
<td>Religion and Film</td>
<td>3 s.h.</td>
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<td>RELS:2320</td>
<td>Jesus and the Gospels</td>
<td>3 s.h.</td>
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<tr>
<td>RELS:2361</td>
<td>Middle East and Mediterranean: Alexander to Suleiman</td>
<td>3 s.h.</td>
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<tr>
<td>RELS:2700</td>
<td>Sacred World of Native Americans</td>
<td>3 s.h.</td>
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<tr>
<td>RELS:3003</td>
<td>Classical and Hellenistic Periods I</td>
<td>3 s.h.</td>
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<tr>
<td>RELS:3103</td>
<td>Biblical Archaeology</td>
<td>1-3 s.h.</td>
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<td>RELS:3105</td>
<td>The World of the Old Testament</td>
<td>3 s.h.</td>
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<td>RELS:3190</td>
<td>Traditions of Religious Reform</td>
<td>3 s.h.</td>
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<td>RELS:3243</td>
<td>Pagans and Christians: The Church from Jesus to Muhammad</td>
<td>3 s.h.</td>
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<td>RELS:3245</td>
<td>Mythology of Other worldly Journeys</td>
<td>3 s.h.</td>
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<td>RELS:3247</td>
<td>Banned from the Bible: Pseudepigrapha and Apocrypha</td>
<td>3 s.h.</td>
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<td>RELS:3385</td>
<td>Early Modern Catholicism</td>
<td>3 s.h.</td>
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<td>RELS:3560</td>
<td>Topics in Asian Religions</td>
<td>3 s.h.</td>
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<td>RELS:3655</td>
<td>Zen Buddhism</td>
<td>3 s.h.</td>
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<td>RELS:3660</td>
<td>Japanese Religion and Thought</td>
<td>3 s.h.</td>
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<td>RELS:3666</td>
<td>The History of a Religious and Spiritual Practice: Yoga in Asia and Beyond</td>
<td>3 s.h.</td>
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<tr>
<td>RELS:3704</td>
<td>Egyptian Art</td>
<td>3 s.h.</td>
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<tr>
<td>RELS:3716</td>
<td>Greek Religion and Society</td>
<td>3 s.h.</td>
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<tr>
<td>RELS:4001</td>
<td>Biblical Hebrew I</td>
<td>4 s.h.</td>
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<tr>
<td>RELS:4002</td>
<td>Biblical Hebrew II</td>
<td>4 s.h.</td>
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<tr>
<td>RELS:4155</td>
<td>Religious Conflict: Early-Modern Period</td>
<td>3 s.h.</td>
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<tr>
<td>RELS:4181</td>
<td>Special Topics in Western Religion</td>
<td>3 s.h.</td>
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<tr>
<td>RELS:4352</td>
<td>The Dead Sea Scrolls</td>
<td>3 s.h.</td>
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<tr>
<td>RELS:4404</td>
<td>The Literature of Daoism</td>
<td>3 s.h.</td>
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<tr>
<td>RELS:4870</td>
<td>Islamic Cultural Presence in Spain</td>
<td>3 s.h.</td>
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<tr>
<td>RELS:4970</td>
<td>Honors Tutorial</td>
<td>2-3 s.h.</td>
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<tr>
<td>RELS:4975</td>
<td>Honors Essay</td>
<td>2-4 s.h.</td>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tr>
<td>RELS:1997</td>
<td>Harry Potter: The Mystery and Magic of Life</td>
<td>3 s.h.</td>
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<tr>
<td>RELS:2090</td>
<td>Issues in American Catholicism</td>
<td>3 s.h.</td>
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<tr>
<td>RELS:2121</td>
<td>The Bible and the Sacrifice of Animals</td>
<td>3 s.h.</td>
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<tr>
<td>RELS:2289</td>
<td>Jerusalem: The Holy City</td>
<td>3 s.h.</td>
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<tr>
<td>RELS:2351</td>
<td>Religious Thinkers of the West</td>
<td>3 s.h.</td>
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<tr>
<td>RELS:2353</td>
<td>Love: Journey of an Idea Through Time</td>
<td>3 s.h.</td>
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<tr>
<td>RELS:2356</td>
<td>Christianity and the Enduring Human Experience</td>
<td>3 s.h.</td>
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<tr>
<td>RELS:2720</td>
<td>Religious and Ethnic Conflict in the Middle East</td>
<td>3 s.h.</td>
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<td>RELS:2730</td>
<td>African American Islam</td>
<td>3 s.h.</td>
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<td>RELS:2771</td>
<td>Sexual Ethics</td>
<td>3 s.h.</td>
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<td>RELS:2775</td>
<td>The Bible and the Holocaust</td>
<td>3 s.h.</td>
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<td>RELS:2778</td>
<td>American Indian Women: Myth, Ritual, and Sacred Power</td>
<td>3 s.h.</td>
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<td>RELS:2834</td>
<td>Philosophy of Religion</td>
<td>3 s.h.</td>
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<td>RELS:2852</td>
<td>Women in Islam and the Middle East</td>
<td>3 s.h.</td>
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<td>RELS:2912</td>
<td>The Bible in Film: Hollywood and Moses</td>
<td>3 s.h.</td>
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<tr>
<td>RELS:2947</td>
<td>Quest II: Sex, Love, and Death</td>
<td>3 s.h.</td>
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<tr>
<td>RELS:2962</td>
<td>Islam in the Public Sphere: Arts, Literature, Culture, and Politics</td>
<td>3 s.h.</td>
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<tr>
<td>RELS:2969</td>
<td>Quest III: Heroes, Lovers, and Knaves</td>
<td>3 s.h.</td>
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<tr>
<td>RELS:2980</td>
<td>Religion and Contemporary Popular Culture</td>
<td>3 s.h.</td>
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<tr>
<td>RELS:2986</td>
<td>Religion and Women</td>
<td>3 s.h.</td>
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<td>RELS:3020</td>
<td>Religion and Politics</td>
<td>3 s.h.</td>
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<td>RELS:3320</td>
<td>In Search of the Good Life</td>
<td>3 s.h.</td>
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<td>RELS:3340</td>
<td>Recovering Eden: The Afterlife in Early Judaism and Christianity</td>
<td>3 s.h.</td>
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<tr>
<td>RELS:3431</td>
<td>Gender and Sexuality in Asia</td>
<td>3 s.h.</td>
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<tr>
<td>RELS:3448</td>
<td>The Allure of Krishna: Sacred Sexuality in Indian Culture</td>
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<tr>
<td>RELS:3572</td>
<td>Comparative Ritual</td>
<td>3 s.h.</td>
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<tr>
<td>RELS:3575</td>
<td>East Meets West: The Western Reception of Eastern Religion</td>
<td>3 s.h.</td>
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<tr>
<td>RELS:3580</td>
<td>Religion and Healing</td>
<td>3 s.h.</td>
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<tr>
<td>RELS:3582</td>
<td>Enlightenment: Cross-Cultural Experiments in Religious Realization</td>
<td>3 s.h.</td>
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<tr>
<td>RELS:3645</td>
<td>Buddhist Philosophy</td>
<td>3 s.h.</td>
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<tr>
<td>RELS:3700</td>
<td>Nonprofit Organizational Effectiveness I</td>
<td>3 s.h.</td>
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<tr>
<td>RELS:3701</td>
<td>Nonprofit Organizational Effectiveness II</td>
<td>3 s.h.</td>
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<tr>
<td>RELS:3714</td>
<td>Anthropology of Religion</td>
<td>3 s.h.</td>
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<tr>
<td>RELS:3745</td>
<td>Twentieth-Century African American Religion: Civil Rights to Hip-Hop</td>
<td>3 s.h.</td>
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<tr>
<td>RELS:3808</td>
<td>Malcolm X, King, and Human Rights</td>
<td>3 s.h.</td>
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<tr>
<td>RELS:3855</td>
<td>Human Rights and Islam</td>
<td>3 s.h.</td>
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<tr>
<td>RELS:3976</td>
<td>American Indian Environmentalism</td>
<td>3 s.h.</td>
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<tr>
<td>RELS:4133</td>
<td>Special Topics: Islamic and Middle Eastern Societies</td>
<td>3 s.h.</td>
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<tr>
<td>RELS:4660</td>
<td>Buddhist Poetry</td>
<td>3 s.h.</td>
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<tr>
<td>RELS:4730</td>
<td>Religion and Environmental Ethics</td>
<td>3 s.h.</td>
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Four-Year Graduation Plan

The following checkpoints list the minimum requirements students must complete by certain semesters in order to stay on the University’s Four-Year Graduation Plan.

Before the fifth semester begins: one or two courses in the major

Before the seventh semester begins: three to six courses in the major and at least 90 s.h. earned toward the degree

Before the eighth semester begins: five to seven courses in the major

During the eighth semester: enrollment in all remaining course work in the major, all remaining General Education courses, and a sufficient number of semester hours to graduate

Honors in the Major

Students majoring in religious studies have the opportunity to graduate with honors in the major. Departmental honors students must complete all requirements for the major plus an additional 3 s.h. of advanced course work, earning at least 33 s.h. for the major. They may apply 3 s.h. of RELS:4960 Individual Study: Undergraduates or RELS:4970 Honors Tutorial toward the 33 s.h. of credit required for the honors major. Honors students must take RELS:4975 Honors Essay under the supervision of a faculty advisor; copies of the completed and approved essay are submitted to the Department of Religious Studies and to the University of Iowa Honors Program.

Departmental honors students must be members of the University of Iowa Honors Program, which requires students to maintain a cumulative University of Iowa g.p.a. of at least 3.33 and to fulfill other requirements; visit Honors at Iowa to learn about the University's honors program.

Minor

The minor in religious studies requires a minimum of 15 s.h. in religious studies courses, including 12 s.h. completed at the University of Iowa. Students must maintain a cumulative g.p.a. of at least 2.00 in all courses for the minor and in all UI courses for the minor. Course work for the minor may not be taken pass/nonpass. With the recommendation of the department’s undergraduate committee and approval of the faculty, students may count a maximum of 3 s.h. of transfer credit toward the minor.

The minor in religious studies requires the following course work.

- RELS:4741 Varieties of American Religion 3 s.h.
- RELS:4748 Religious Rhetoric: God and U.S. Politics 3 s.h.
- RELS:4920 Native American Women and Religious Change 3 s.h.
- RELS:4939 Controversial Religions in U.S. History 3 s.h.
- RELS:4970 Honors Tutorial 2-3 s.h.
- RELS:4975 Honors Essay 2-4 s.h.

Graduate Programs of Study

- Master of Arts in religious studies
- Doctor of Philosophy in religious studies

Graduate study in the department addresses the idea of religion and the ways in which religious traditions originate, develop, and interact over time. Students learn to identify and use multiple methods for the study of religion, including historical, philosophical, ethical, literary, linguistic, psychological, ethnographic, and digital approaches.

Graduate study is flexible. Students create individualized programs of study in consultation with their advisors and core committee members, in light of faculty expertise within the department and around the University. Programs often are developed in relation to one of the following four areas of concentration.

- Religions in the Middle East, Ancient Near East, and Mediterranean
- Religions in Asia
- Religions in the Americas and Europe
- Religion, ethics, and society

Programs also are developed across these areas or thematically in relation to the department’s central focus which is religion and public life, most notably religion’s impact on the construction of individual and group identities and the dynamics of social change. Included in this focus is religion’s relationship to gender, race, ethnicity, and other markers of identity, and the practice and study of religion in a digital age.

Graduate study in religion can prepare a student to become a professor of religious studies. It also can provide the ability to integrate a deep and theoretically-sophisticated understanding of religion and its influences into other professions, such as medicine, nursing, law, political leadership, policy making, journalism, or counseling.

For more information about graduate study and the faculty, see Graduate Program and People on the department’s web site.

Master of Arts

The Master of Arts program in religious studies requires a minimum of 30 s.h. of graduate credit and is offered with or without thesis. The program is designed for students who wish to advance their understanding of a particular area of religious studies or explore a variety of traditions and topics. It also is intended to prepare students to educate the public about religion and its influences, within a variety of life and career contexts.
Students must complete 24 s.h. of the credit required for the degree at the University of Iowa and must maintain a cumulative g.p.a. of at least 3.20. Requirements for languages and other research tools vary according to the student’s study focus. M.A. students are supervised by a three-person committee consisting of an advisor and two additional faculty members.

All M.A. students complete the following five courses.

- RELS:5100 Teaching and Public Engagement 3 s.h.
- RELS:5200 Varieties of Religion in the Contemporary World 3 s.h.
- RELS:5300 Genealogies of Religion 3 s.h.
- RELS:5400 Methods and Theories in the Study of Religion 3 s.h.

One graduate seminar

Students select remaining course work depending on their interest area and in consultation with their core committee.

In the M.A. thesis, students demonstrate and refine their research and writing skills. They may count a maximum of 6 s.h. of thesis credit toward the degree. Students must defend their M.A. thesis. Students who do not write a thesis must pass an M.A. examination that tests their competence in completed course work.

**Doctor of Philosophy**

The Doctor of Philosophy program in religious studies requires a minimum of 72 s.h. of graduate credit. Students may transfer up to 24 s.h. of credit from another accredited graduate school.

Course requirements for the Ph.D. vary according to concentration area. However, all students must complete the following eight required courses.

- RELS:5100 Teaching and Public Engagement 3 s.h.
- RELS:5200 Varieties of Religion in the Contemporary World 3 s.h.
- RELS:5300 Genealogies of Religion 3 s.h.
- RELS:5400 Methods and Theories in the Study of Religion 3 s.h.

Four graduate seminars, including at least two in religious studies

During their fourth semester in residence, students must submit a departmental program of study, which must be approved by the religious studies faculty. To gain approval to continue in the Ph.D. program, students must complete three of the required Ph.D. courses listed above and two of the graduate seminars; show satisfactory progress toward the language and course requirements of their individual programs; demonstrate the ability to write scholarly papers at a level satisfactory for the Ph.D., as assessed by the advisor and core committee members (at least two papers must be submitted to the committee); and have a cumulative University of Iowa g.p.a. of at least 3.40 (language courses that do not count toward the Ph.D. are excluded).

Students must pass a comprehensive examination based on a bibliography that covers their main focus area within religious studies (the history, influential figures, perennial debates, and/or theoretical approaches); a secondary chosen area of focus, distinct from the dissertation topic; and an area of specialization or dissertation topic. The comprehensive exam includes an oral defense. Students also must write a dissertation prospectus and a dissertation based on original research, both of which are defended orally. They may count a maximum of 12 s.h. of dissertation credit toward the degree.

Students working toward a Ph.D. may receive an M.A. upon completing at least 30 s.h. of course work and successfully passing the comprehensive examination.

For more detailed information on graduate programs in religious studies, contact the Department of Religious Studies or visit Graduate Program on the department's web site.

**Admission**

Applicants must meet the admission requirements of the Graduate College; see the Manual of Rules and Regulations of the Graduate College.

Applicants to the M.A. program ordinarily must have a verbal reasoning score of at least 153 and a quantitative reasoning score of at least 147 on the revised Graduate Record Examination (GRE) General Test (verbal reasoning score of at least 500 and quantitative reasoning score of at least 580 on the old GRE General Test) and a g.p.a. of at least 3.00.

Applicants to the Ph.D. program ordinarily must have a verbal reasoning score of at least 158 and a quantitative reasoning score of at least 147 on the revised GRE General Test (verbal reasoning score of at least 580 and quantitative reasoning score of at least 580 on the old GRE General Test) and a g.p.a. of at least 3.40.

Application materials must include an application form; a transcript of all undergraduate and graduate work (one copy must be sent to the University's Office of Admissions and a second copy must be sent to the Department of Religious Studies); an application or waiver of consideration form for graduate assistantships; three confidential letters of recommendation; and a writing sample that demonstrates the applicant's ability to engage in critical analysis. Applicants also must submit a brief personal essay that explains their objectives for graduate study and states which area of graduate study in religion will suit their objectives best. Students may indicate one of the four areas of concentration listed under “Graduate Programs of Study” above or an area that crosses the concentrations and is well supported by faculty expertise. For details, see Graduate Admission and Financial Aid on the department's web site.

All application materials must be received by January 15 to receive full consideration for fall admission.

**Financial Support**

All Ph.D. students in religious studies receive funding. Ordinarily, no departmental funding is available for M.A. students. The department offers financial support for graduate students in the form of teaching assistantships.

The Gilmore Scholarship, for doctoral students interested in the relationship among religion, the visual arts, and humanistic values, pays up to full tuition for one year. It is awarded every few years.
Language Study at the University

The University offers a variety of modern European languages (see French and Italian (p. 291), German (p. 336), and Spanish and Portuguese (p. 596) in the Catalog) as well as Greek and Latin (see Classics (p. 149) in the Catalog); Arabic and Swahili (see French and Italian (p. 291) in the Catalog); and Chinese, Czech, Hindi-Urbu, Japanese, Korean, Russian, and Sanskrit (see Asian and Slavic Languages and Literatures (p. 100) in the Catalog).

Courses

Lower-Level Undergraduate

RELS:1000 First-Year Seminar 1 s.h.
Small discussion class taught by a faculty member; topics chosen by instructor; may include outside activities (e.g., films, lectures, performances, readings, visits to research facilities). Requirements: first- or second-semester standing.

RELS:1001 The Judeo-Christian Tradition 3 s.h.
Introduction to Judaism and Christianity; focus on scriptural foundation and historical development of these related traditions; texts and other forms of religious expression, especially in art, music, literature, and philosophy; readings from the Hebrew Bible and New Testament; other materials from selected Jewish and Christian thinkers. GE: Historical Perspectives.

RELS:1010 CLAS Master Class 1-3 s.h.
Exploration of a single topic in a series of lectures by faculty presenting divergent perspectives; illuminates intellectual adventure inherent in liberal arts and sciences; encourages discovery of majors and other areas of study within the College of Liberal Arts and Sciences. Same as CLAS:1001, THTR:1001, CS:1001, CSD:1001, ENGL:1001, BIOC:1001, ARTS:1001.

RELS:1015 Religions in a Global Context: The Critical Role of Religion in International Affairs 3 s.h.
Essentials of world's religions; focus on religion's role in national and international events, fundamentalism, millenarianism, protest movements, religion and youth culture, religion and popular culture, contact between religious communities past and present.

RELS:1021 Judaism: The Sacred and the Secular 3 s.h.
Ways in which the sacred face of Judaism (Hebrew Bible and rabbinic additions) have transformed and been transformed by historical frameworks in which Jews and Judaism have existed; special attention given to the Holocaust, modern nation-state of Israel, and experiences of Jews in modern secular nation-states. GE: Values, Society, and Diversity.

RELS:1070 Introduction to the Hebrew Bible/Old Testament 3 s.h.
History, religion, and thought of ancient Jews as recorded in their scripture. GE: Values, Society, and Diversity.

RELS:1080 Introduction to the New Testament 3 s.h.

RELS:1113 Gateway to the Bible 3 s.h.
Disagreement of Jews, Catholics, Protestants, and Eastern Orthodox Christians about the Bible, one of the most influential works in Western culture, on how it should be interpreted, what books should be included, and what versions of those books should be authoritative; introduction to issues involved in creating and interpreting the Bible; how academic study of religion seeks to provide answers.

RELS:1130 Introduction to Islamic Civilization 3 s.h.
Major areas of Islamic religious tradition: Qur'an, traditions of the Prophet, development and character of Islamic law, theology. GE: International and Global Issues; Values, Society, and Diversity. Same as HIST:1130.

RELS:1225 Medieval Religion and Culture 3 s.h.
Religion in Europe from classical antiquity to dawn of the Reformation; the religious element in traditions such as art, architecture, literature. GE: Historical Perspectives. Same as HIST:1425.

RELS:1250 Modern Religion and Culture 3 s.h.
European and American religious life from Renaissance to 21st century; focus on specific themes, such as secularism, regionalism, pluralism. GE: Historical Perspectives. Same as HIST:1450.

RELS:1323 Life in the Biblical World 3 s.h.
Examination of world depicted in Old and New Testaments of the Bible; archaeological evidence, ancient art, historical accounts, geography, and Bible text used to examine background of biblical text, shedding light on different aspects of daily life in antiquity from different points of view from Late Bronze Age through Roman period. Same as CLSA:1323.

RELS:1350 Introduction to African American Religions 3 s.h.
GE: Values, Society, and Diversity. Same as AFAM:1250.

RELS:1404 Living Religions of the East 3 s.h.
Religious beliefs, practices in India, China, Japan. GE: Values, Society, and Diversity. Same as ASIA:1040.

RELS:1410 Introduction to Indian Religions 3 s.h.
Religions with origins in the South Asian geographic region (e.g., Vedas in mid-second millennium BCE, Jainism and Buddhism from sixth to fourth centuries BCE, Sikhism in 15th century, Indian Christianity, Islam); focus on Hinduism and Buddhism; rise of varied literary forms, ritual, rise of devotional religion, Tantra, how religious practices affect indigenous medical traditions, how these traditions developed in different South Asian regions; broad changes in South Asian religion in 20th and early 21st centuries, current politicization of religion.
RELS:1502 Asian Humanities: India 3 s.h.
Introduction to four thousand years of South Asian civilization, through popular stories. GE: Values, Society, and Diversity. Same as SOAS:1502.

RELS:1506 Introduction to Buddhism 3 s.h.
Basic tenets, religious paradigms, historical phases important in the development of Buddhism; from the Buddha's life to evolution of Mahāyāna Buddhism; readings from India, Tibet, China, Japan, Korea, Southeast Asia. GE: Values, Society, and Diversity. Same as ASIA:1060.

RELS:1510 Gods, Buddhists, and Ghostly Officials: The Past and Present of Chinese Religions 3 s.h.
History of religious beliefs and practices in China; role in modern-day Chinese society; specific case studies that illuminate current situation of religion in China and impact on Chinese society; focus on the still widespread worship of gods and ancestors, the Confucian, Buddhist and Daoist traditions, recent upsurge of Christianity in China, and emergence of new religions (e.g., the Falun gong). Same as ASIA:1110.

RELS:1610 Japanese Religions 3 s.h.
Religions of Japan from ancient times to the present day; elite and popular Japanese interpretations of Chinese Buddhist and Daoist traditions; the parallel development of an indigenous kami tradition; contemporary new religious movements; focus on the codification of a variety of religious (and sometimes quasi-religious) paths, including the way of tea, the way of the brush, and the way of the samurai. Same as JPNS:1115.

RELS:1702 Religion in America Today 3 s.h.
How American men, women, and children practice their beliefs in today's society. GE: Values, Society, and Diversity.

RELS:1765 U.S. Latino Religions 3 s.h.
Beliefs and practices of U.S. Latinos and Latinas, ways that their beliefs and practices are unique and where they overlap with mainstream U.S. society; beliefs, symbols, and practices among U.S. Latinos and Latinas on national and local level; field visits to local churches and religious sites; class visitors share insights.

RELS:1810 Longing for Freedom 3 s.h.
Religious backgrounds and unique spiritualities of Maya Angelou (an African-American Christian), Black Elk (a Lakota Sioux medicine man), and the Dalai Lama (a Tibetan Buddhist monk); forms of oppression that humans can experience as obstacles to happiness, and forms of liberation that are possible (social, political, economic, mental, emotional, spiritual). GE: Values, Society, and Diversity.

RELS:1903 Quest for Human Destiny 3 s.h.
Quests for destiny in terms of perceived options/goals and ability to recognize, pursue, achieve them. GE: Values, Society, and Diversity.

RELS:1997 Harry Potter: The Mystery and Magic of Life 3 s.h.
Exploration of Harry Potter novels and films that offer millions of people an entrée into a world of wizards, witches, and muggles; this engrossing world created by J.K. Rowling invites readers and viewers to explore the power of human imagination, creates a space for asking questions of personal significance (What defines me as a person? What sort of person am I in the process of becoming? What are the most significant factors that are shaping my identity and destiny?); students read selections and view film segments while exploring these essential questions.

RELS:2064 Tricksters, Fools, and Creators: Mythical Agents of Change 3 s.h.
Trickster figures found all around the world in many forms, including coyote, br'er rabbit, spider, raven, and gods; how they are often depicted as bungling fools or dupes, but also as creators, transformers, or culture heroes; how they get into trouble and solve human problems; how storytellers have long entertained and educated their listeners with tales of trickster exploits; trickster figures that have been recast in comic books and on movie screens (e.g., Loki); examination of historical and contemporary trickster figures to understand how they are experienced by different cultures and how they shape and inform human behavior.

RELS:2068 Jews in Popular Culture 3 s.h.
Exploration of a wide variety of ways in which Jewish people represent themselves through production of cultural media.

RELS:2080 Public Life in the U.S.: Religion and Media 3 s.h.
Examination of how the U.S. came into being through specific communication practices, how religion has helped and hindered that process; religious roots of the idea of the U.S., intertwined histories of print media and religion, role of religion and secularism in public discourse; U.S. pride as a nation in which diversity thrives in public discourse; communicative acts that created and sustained this country and also mark sites of discord, conflict, and confusion from the very beginnings of the U.S. to today; how religion has been a source of national identity and national division. Prerequisites: (COMM:1112 or COMM:1170) and (COMM:1117 or COMM:1130) and (COMM:1168 or COMM:1174) and COMM:1301 and COMM:1305. Requirements: g.p.a. of at least 2.30, and completion of four of five Foundations of Communication courses. Same as COMM:2080.

RELS:2087 Narnia and Beyond: The Writings of C.S. Lewis 3 s.h.
Exploration of C.S. Lewis's use of fantasy to describe the indescribable, his efforts to empathize with human suffering while hoping in possibility of miracles, and his jargon-free narration of Christian beliefs for a war-weary country; Lewis's works that continue to attract attention, ranging from children's literature to science fiction to autobiography and nonfiction; as a professor of medieval and renaissance Literature, Lewis's unique perspective on Christianity that led him to make use of imagery, metaphors, and narratives previously neglected by Christian thinkers.
<table>
<thead>
<tr>
<th>Course Number</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>RELS:2090</td>
<td>Issues in American Catholicism</td>
<td>3 s.h.</td>
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<td>Major issues that have faced Catholics in America; special attention</td>
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<td>to issues of gender, racial, and ethnic identities.</td>
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<td>RELS:2121</td>
<td>The Bible and the Sacrifice of Animals</td>
<td>3 s.h.</td>
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<td>Why the biblical God permits humans to eat other animals' flesh;</td>
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<td>fundamental dietary differences between humans and the beasts.</td>
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<td>RELS:2182</td>
<td>Ancient Mediterranean Religions</td>
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<td>Introduction to major religious traditions of ancient Mediterranean</td>
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<td>world; Mesopotamia, the Levant (Hebrew Bible), Egypt, Greece, and</td>
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<td>Rome; central aspects of mythology, ritual, and archaeology,</td>
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<td>individually and in comparative perspective; ancient Judaism and</td>
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<td>Christianity considered in their various cultural contexts; basic</td>
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<td>concepts for understanding cultural exchange; fundamental theories</td>
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<td>in the study of religion. GE: Values, Society, and Diversity. Same</td>
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<td></td>
<td>as CLSA:2482.</td>
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<td>RELS:2225</td>
<td>Messianic and Apocalyptic Prophecy in the Bible</td>
<td>3 s.h.</td>
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<td>Literary, historical, and theological analysis of biblical prophecies</td>
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<td>and their impact. Same as CLSA:2425.</td>
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<td>RELS:2260</td>
<td>Hard Cases in Healthcare: Issues of Life and Death</td>
<td>3 s.h.</td>
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<td>Exploration of ethical issues that arise in real-life clinical</td>
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<td>settings; designed for students considering a career in healthcare</td>
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<td>and others intrigued by the way advanced technologies are changing</td>
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<td>what it means to be human, to live well, and to die with dignity;</td>
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<td>most cases studied involve people for whom questions of life and</td>
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<td>death are framed by religious beliefs or carry spiritual weight;</td>
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<td>caring for others in a context of science with sensitivity to</td>
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<td>matters of the human spirit.</td>
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<td>RELS:2272</td>
<td>Religion and Film</td>
<td>3 s.h.</td>
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<td></td>
<td>Religious ideas that are often explored and debated in movies;</td>
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<td>movies that retell a particular story (Noah or Kundun) or rework</td>
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<td>ancient themes (Little Buddha or The Matrix); movies that go beyond</td>
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<td>mere entertainment to try to persuade audiences to change their view</td>
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<td>of the world and how movie watchers do not realize that this process</td>
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<td>is taking place; analysis of movies that use ancient or religious</td>
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<td>material to try to shape people's minds and imaginations today.</td>
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<td>Recommendations: some background in religious studies helpful.</td>
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<td>RELS:2289</td>
<td>Jerusalem: The Holy City</td>
<td>3 s.h.</td>
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<td>Religious, political, and cultural history of Jerusalem over three</td>
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<td>millennia as a symbolic focus of three faiths—Judaism, Christianity,</td>
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<td>and Islam; integration of several digital learning technologies,</td>
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<td>including digital reconstructions and Google Earth tours of</td>
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<td>Jerusalem. Same as CLSA:2489.</td>
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<td>RELS:2320</td>
<td>Jesus and the Gospels</td>
<td>3 s.h.</td>
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<td></td>
<td>How Jesus was depicted in the writings of the early church; reasons</td>
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<td>for the different portrayals. Same as CLSA:2420.</td>
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<tr>
<td>RELS:2351</td>
<td>Religious Thinkers of the West</td>
<td>3 s.h.</td>
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<td>Augustine, Bonaventure, Fichte, Kierkegaard, Heidegger. GE: Values,</td>
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<td></td>
<td>Society, and Diversity.</td>
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<td>RELS:2353</td>
<td>Love: Journey of an Idea Through Time</td>
<td>3 s.h.</td>
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<td>Idea of love from influential texts of the past to various aspects</td>
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<td>of contemporary culture and experience (e.g., romantic love,</td>
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<td></td>
<td>mystical experience, digitally-mediated friendships, family</td>
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<td>relationships); idea of universal human rights; cybersex.</td>
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<td>RELS:2356</td>
<td>Christianity and the Enduring Human Experience</td>
<td>3 s.h.</td>
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<td>Topics in Christian history and thought; emphasis on the</td>
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<td>relationship between communities of belief and Christian traditions.</td>
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<td>RELS:2361</td>
<td>Middle East and Mediterranean: Alexander to Suleiman</td>
<td>3 s.h.</td>
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<td>GE: Historical Perspectives. Same as HIST:2461, CLSA:2461.</td>
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<td>RELS:2486</td>
<td>Religious Coexistence and Conflict in the Middle East</td>
<td>3 s.h.</td>
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<td>Examination of coexistence and conflict in the region that includes</td>
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<td>Iraq, Israel/Palestine, Lebanon, Syria and Yemen;</td>
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<td>relationship between religion and politics in the Middle East;</td>
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<td>how the region's diverse ethnic and religious communities coexisted</td>
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<td>in the past and what now seems like a remarkably tolerant</td>
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<td>environment; investigation of questions (Did Muslims, Christians,</td>
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<td></td>
<td>and Jews really live together in peace? If so, how and why has</td>
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<td>that changed?); history of communal relations in the Middle East;</td>
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<td>use of this background to analyze how religion and ethnicity</td>
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<td>function in contemporary politics.</td>
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<td>RELS:2674</td>
<td>You Are What You Eat: Food, Belief, and Identity</td>
<td>3 s.h.</td>
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<td>Introduction to study of food and identity in a global context.</td>
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<td>RELS:2700</td>
<td>Sacred World of Native Americans</td>
<td>3 s.h.</td>
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<td>GE: Values, Society, and Diversity. Same as AINS:2700.</td>
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<td>RELS:2720</td>
<td>Religious and Ethnic Conflict in the Middle East</td>
<td>3 s.h.</td>
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<td>Relationship between religion and politics in the Middle East;</td>
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<td>examination of areas of conflict, including Lebanon, Iraq, and</td>
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<td>Israel/Palestine.</td>
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<td>RELS:2730</td>
<td>African American Islam</td>
<td>3 s.h.</td>
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<td>Same as AFAM:2730.</td>
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<td>RELS:2771</td>
<td>Sexual Ethics</td>
<td>3 s.h.</td>
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<td>Introduction to religion and ethics; diverse secular, Jewish, and</td>
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<td>Christian perspectives on human sexuality and sexual activity;</td>
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<td>religious views underlying divergent attitudes toward same-gender</td>
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<td>sexuality and abortion. Same as GWSS:2771.</td>
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<td>RELS:2775</td>
<td>The Bible and the Holocaust</td>
<td>3 s.h.</td>
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<td>Religious and philosophic implications of the Holocaust viewed</td>
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<td>through survivors' writings.</td>
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RELS:2778 American Indian Women: Myth, Ritual, and Sacred Power 3 s.h.
Participation of women and girls in native religious traditions; obstacles to knowing and understanding native women's religious roles and experiences. Same as AINS:2078, GWSS:2778.

RELS:2791 Religion and Social Life 3 s.h.
Religion as a dimension of experience that can find diverse forms of expression, especially in social life and production of culture, not simply a social institution that is defined by a set of beliefs and practices.

RELS:2834 Philosophy of Religion 3 s.h.
Historical to contemporary treatments of central issues; nature of faith, existence and nature of God, science and religion, ethics and religion, miracles, religious experience, interpretation of religious texts. Requirements: sophomore or higher standing. Same as PHIL:2534.

RELS:2852 Women in Islam and the Middle East 3 s.h.
Women in the Islamic community and in non-Muslim Middle Eastern cultures; early rise of Islam to modern times; references to women in the Qur'an and Sunnah, stories from Islamic history; women and gender issues. GE: International and Global Issues; Values, Society, and Diversity. Same as GWSS:2052.

RELS:2877 Sport and Religion in America 3 s.h.
Sport as a religion; religiosity in sports; examination of religion and sport as connected in important ways in American society. Same as SPST:2077.

RELS:2883 Science and Christianity: Conflicts and Conversations 3 s.h.
Science, technology, and religion as some of the most powerful forces in the world and their dramatic interactions; various conflicts and conversations between science and Christianity in modern Western culture beginning with Galileo; evolution, intelligent design, Big Bang, "God Particle," Human Genome Project, and spiritual implications of neuroscience. Recommendations: nontechnical knowledge of physics, biology, and psychology.

RELS:2912 The Bible in Film: Hollywood and Moses 3 s.h.
How Hollywood has interpreted the Biblical stories of Adam and Eve, Moses, and David the King.

RELS:2930 Digital Media and Religion 3 s.h.
Influences of digital media on religion and spirituality today. Requirements: for COMM:2079 — communication studies major, g.p.a. of at least 2.30, and completion of four Foundation of Communication courses chosen from COMM:1301, COMM:1305, COMM:1112 or COMM:1170, COMM:1117 or COMM:1130), and COMM:1168 or COMM:1174. Same as COMM:2079.

RELS:2947 Quest II: Sex, Love, and Death 3 s.h.
Readings from the Hebrew Bible, Sophocles' Antigone, Melville's Billy Budd, Hemingway's The Sun Also Rises, Salinger's A Perfect Day for Banana Fish, the film From Here to Eternity.

RELS:2962 Islam in the Public Sphere: Arts, Literature, Culture, and Politics 3 s.h.
Religion as exerting undeniable influence in public sphere in communities around the world; examination of ways in which religion manifests itself in public sphere; religion in the arts, politics, science, literature, sports, communication, business, education, and many other domains of public sphere.

RELS:2969 Quest III: Heroes, Lovers, and Knaves 3 s.h.
Tension between Paganism and the Bible regarding heroism and eroticism; the Song of Songs, stories of Rachel, Samson, Saul, Bathsheba; Plato's Symposium, Hemingway's The Snows of Kilimanjaro, Salinger's For Esme with Love and Squalor; The Highlander, The Matrix, Bridget Jones' Diary; unmasking knaves to truly appreciate heroes and lovers.

RELS:2980 Religion and Contemporary Popular Culture 3 s.h.
Representation and appropriation of world religions in contemporary popular culture (film, television, music, new media); new religious movements arising within popular culture; religion in the digital age; commodification and globalization; focusing on cultural production in North America and Asia.

RELS:2986 Religion and Women 3 s.h.
Sexism and its disavowal in biblical narrative, law, wisdom texts, Gospels, epistles; contemporary impact. GE: Values, Society, and Diversity.

Upper-Level Undergraduate and Graduate

RELS:3003 Classical and Hellenistic Periods I 3 s.h.
Readings in Greek literature of the Classical and Hellenistic periods. Prerequisites: CLSG:2002. Same as CLSG:3003.

RELS:3020 Religion and Politics 3 s.h.
Major trends in Islamic religious thought since the colonial period, focusing on encounters between Islamic and the modern world; Ibn Khaldun; renewal movements; varieties of religious reform and accommodation; nationalism, socialism, and so forth. Recommendations: prior course work in content topic.

RELS:3013 Biblical Archaeology 1,3 s.h.
Contributions of Syro-Palestinian archaeological research to understanding historical, cultural backgrounds of biblical period.

RELS:3015 The World of the Old Testament 3 s.h.
Historical, intellectual background; focus on patterns of thought, religion in Near East, relation to Israelite religion.

RELS:3129 Native American Prophets and Prophecy 3 s.h.
Religious movements, effects of prophecies on followers of religious movements, and resulting tensions with Americans; powerful visions described as messages from a spirit being experienced by several 19th-century Native Americans after waking from coma-like states—wonderful prophecies of the restoration of Native American world to what it once was before American colonization, prophecies leading to religious movements that called for return to traditional practices, rejection of many elements of white American culture, and warnings of an impending destruction of the world.

**RELS:3190 Traditions of Religious Reform** 3 s.h.
Same as HIST:3190.

**RELS:3243 Pagans and Christians: The Church from Jesus to Muhammad** 3 s.h.
Introduction to history of early Christianity, from time of Jesus to rise of Islam; focus on major movements, intellectuals, institutions in this period; growth of Christianity in different geographical areas including the Middle East, Greece, Western Europe, Africa; Christian relations with Jews, pagans, Muslims; conversion, orthodoxy, heresy, making of biblical canon; martyrdom; women and gender roles; asceticism, monasticism, sexuality; church and state; theological controversy and schisms; cult of saints; the Holy Land and pilgrimage. Same as CLSA:3443.

**RELS:3245 Mythology of Otherworldly Journeys** 3 s.h.
Examination of mythology of otherworldly journeys from earliest religions to Hellenistic period; historical context; comparison for common themes in their evolution over time; directed readings of mythological texts dealing with otherworldly journeys; ways in which past cultures confronted larger mysteries of life and death. Same as CLSA:3445.

**RELS:3247 Banned from the Bible: Pseudepigrapha and Apocrypha** 3 s.h.
Introduction to biblical Pseudepigrapha and Apocrypha; writings dating from third century B.C.E. to third century C.E. fictionally attributed to characters in the Hebrew Bible and New Testament, or written as though they originated in the First or Second Temple periods, not included in Jewish or major Christian canons of scripture; English translations of documents from this period; key themes and interpretative techniques common throughout biblical texts that provide tremendous insight into the worlds that produced the Hebrew Bible and New Testament. Same as CLSA:3247.

**RELS:3320 In Search of the Good Life** 3 s.h.
Works from Greco-Roman, Jewish, and Christian cultures to analyze various beliefs on how humans can live the good life and examine how these solutions are intimately connected to the specific conceptions of the divine world. Same as CLSA:3420.

**RELS:3340 Recovering Eden: The Afterlife in Early Judaism and Christianity** 3 s.h.
Development of afterlife ideology in Jewish and Christian traditions; ideas that influenced this development, particularly as related to problem of suffering. Same as CLSA:3440.

**RELS:3375 Birth of the Holy Land: Art and Architecture in the Ancient Middle East** 3 s.h.
Major developments in architecture, sculpture, ceramics, and mosaics in Israel, Palestine, Syria, and Arabia from death of Alexander the Great to rise of Islam (4 B.C.E. to 8 C.E.); Greek and Roman influences versus local traditions; Roman Empire; growth of churches, synagogues, and mosques; identity and religion. Same as ARTH:3375.

**RELS:3385 Early Modern Catholicism** 3 s.h.
Same as HIST:3485.

**RELS:3431 Gender and Sexuality in Asia** 3 s.h.
Conceptions of sex, gender, and sexuality in the religions of China, Korea, and Japan; asceticism and celibacy; sexual alchemy; the difference between male and female bodies and souls; intersexed persons; female saints and immortals; transgressive sexuality; gender and sexuality in colonial Asia; East Asian religions and postcolonial feminism. Same as GWSS:3151.

**RELS:3448 The Allure of Krishna: Sacred Sexuality in Indian Culture** 3 s.h.
For thousands of years, Krishna, the dark-skinned flute-player, has been central to the religious experience of many Hindus; his diverse roles as mischievous divine child, sensual teenage cowherd, and adult statesman, warrior, and philosopher celebrated in poetry and prose, painting and sculpture, music, dance, drama, film, and television; exploration of multiple facets of Krishna's character through literary and visual sources, performances; focus on Indian interpretations of erotic content prominent in his story and to the figure of Radha, Krishna's mistress and beloved. Same as SOAS:3448.

**RELS:3520 Dying for the Promised Land: Martyrdom and Warfare in the Western World** 3 s.h.
How martyrdom evokes images of innocents who are killed for their faith and terrorists who commit suicide bombings; how these groups may appear distinct, but share a heritage that relates absolute obedience to God and (often human) sacrifice to conquest and possession of a Promised Land; development of martyrdom ideology and its uses in religious and political conflict in Western history: examination of the Crusades, Reformation, and modern religious and political conflicts beginning with works from the Bible, Greco-Roman culture, and early Jewish and Christian literature. Same as SOAS:3520.

**RELS:3524 The Devil in Judaism and Christianity** 3 s.h.
While known by many names, the Devil as a central figure in Western religious tradition; surprisingly, how he is not found in earliest texts in the Old Testament; the Devil as embodiment of evil that has his genesis in early Jewish and Christian sectarian conflicts; how he is used as a terrifying dragon or seductive stranger to demonize those perceived as threats to a group's existence; how the Devil is used to explain righteous suffering and create cultural boundaries throughout Western culture, from ancient texts and medieval witch trials to modern cinema and politics. Recommendations: some background in Judeo-Christian tradition. Same as CLSA:3524.
RELS:3575 East Meets West: The Western Reception of Eastern Religion
Introduction of religious ideas and forms from India, China, and Japan into Europe and America to late 20th century, from Greeks to New Age. Same as ASIA:3775.

RELS:3580 Religion and Healing

RELS:3582 Enlightenment: Cross-Cultural Experiments in Religious Realization
Enlightenment as one of the most important ideas that feeds contemporary religious and spiritual imagination; exploration of this concept in contemporary religious and spiritual discourse. Same as SOAS:3920.

RELS:3645 Buddhist Philosophy
Theories and arguments concerning the Buddhist path to enlightenment. Same as PHIL:3845.

RELS:3655 Zen Buddhism
Prerequisites: RELS:1404 or RELS:1506 or RELS:1510. Same as ASIA:3560.

RELS:3660 Japanese Religion and Thought
Same as JPNS:3660.

RELS:3666 The History of a Religious and Spiritual Practice: Yoga in Asia and Beyond
Historical, textual, and anthropological readings; visual material, yoga demonstrations, discussions of yoga practices; theory underlies readings, including ritual theory and practice theory; psychology and inquiries into the nature of religious adaptation and syncretism.

RELS:3700 Nonprofit Organizational Effectiveness I
Operational and financial aspects of nonprofit management; mission and governance of organization; strategic planning for effective management, including finance, budget, income generation, fund-raising. Same as ENTR:3595, MUSM:3500, SSW:3500, NURS:3595, MGMT:3500.

RELS:3701 Nonprofit Organizational Effectiveness II
Qualities for leadership of nonprofit organizations, including relationships with staff and volunteers; relationship of nonprofit and outside world; marketing, public relations, advocacy strategies for nonprofits. Same as MGMT:3600, NURS:3600, SSW:3600.

RELS:3704 Egyptian Art
Sculpture, painting, architecture, and luxury arts from Pyramid Age to Death of Cleopatra. Same as ARTH:3320.

RELS:3714 Anthropology of Religion
Approaches; religious roles; shamanism, witchcraft, curing; mythology; place of religion in social and cultural change. Same as ANTH:3114.

RELS:3716 Greek Religion and Society
From Bronze Age to the Hellenistic period, in context of Mediterranean culture; evidence such as choral hymn, inscribed prayers, magical curses inscribed on lead, architecture, sculpted offerings to the gods. GE: Values, Society, and Diversity. Same as CLSA:3416.

RELS:3745 Twentieth-Century African American Religion: Civil Rights to Hip-Hop
Twentieth-century African American religious history; major political and cultural movements, such as civil rights, black power, black feminism/womanism, hip-hop. Same as AFAM:3245.

RELS:3808 Malcolm X, King, and Human Rights
Religion and politics of Malcolm X and Martin Luther King, Jr. in the context of U.S. civil rights and international human rights in West Africa and the Muslim world; emphasis on civil rights connections to Gandhi, the Nobel Peace prize, and other international experiences that have impacted Pan Africanists, such as Stokely Carmichael, who worked on human rights. Recommendations: international studies major or undergraduate standing. Same as AFAM:3500.

RELS:3834 Arab Spring in Context: Media, Religion, and Geopolitics
Protest movements that started in Tunisia in 2011 and swept across North Africa and the Middle East transforming Arab and Islamic societies in radically different ways; function of social media, satellite television, communication technology; influence of religious leaders and groups on some protest outcomes; impact of wealth and geopolitics on social fabric of Islamic societies within and outside Arab countries. Requirements: for COMM:3834 — g.p.a. of at least 2.50, completion of Foundations of Communication requirement, and 6 s.h. of intermediate-level course work. Same as IS:3834, WLLC:3834, JMC:3146, COMM:3834.

RELS:3845 Islam in Africa
African Islamic history beginning with earliest Muslim migrants from Arabia to Ethiopia in early 7th century C.E. to dawn of 21st century; focus on historical development of Islam on African continent, specific regions, and particular themes; part of Islamic Studies Virtual Curriculum and Committee on Institutional Cooperation (CIC) CourseShare Program. Same as HIST:3745, IS:3745.

RELS:3855 Human Rights and Islam
Human rights in religious and secular discourse, seventh century to present; Islamic law, human rights law, religion, politics. GE: International and Global Issues. Same as IS:3855.

RELS:3976 American Indian Environmentalism
Same as AINS:3276.

RELS:4001 Biblical Hebrew I
4 s.h.
RELS:4002 Biblical Hebrew II 4 s.h.

RELS:4124 Digital Archaeological Modeling 1-3 s.h.
Introduction to foundational theory, methodology, programming skills, and conceptual understanding necessary to model remains and reconstructions of archaeological sites in various three-dimensional digital modeling environments. Recommendations: background in archaeology. Same as CLSA:4131.

RELS:4133 Special Topics: Islamic and Middle Eastern Societies 3 s.h.
Recent events in Islamic world and Middle East; varied topics.

RELS:4155 Religious Conflict: Early-Modern Period 3 s.h.
Reformation of 16th century—Lutheran, Calvinist, Radical, English; readings from major representatives of each. Same as HIST:4455.

RELS:4181 Special Topics in Western Religion 3 s.h.
Examination of a specific topic of interest related to Western religious traditions. Recommendations: some background in Judaism, Christianity, or classics.

RELS:4352 The Dead Sea Scrolls 3 s.h.
Introduction to the Dead Sea Scrolls; reading of the scrolls in English translation; examination of Qumran site archaeology; survey of broader sociopolitical context of Second Temple Judaism (586 B.C.E. to 135 C.E.) out of which the scrolls emerged. Same as CLSA:4452.

RELS:4404 The Literature of Daoism 3 s.h.
Texts of philosophical, religious Daoism; Daoism in traditional Chinese political theory, literature, the arts, alchemy and medicine, sexual custom, combat. Taught in English. Same as CHIN:4204.

RELS:4660 Buddhist Poetry 3 s.h.
Poetry across the Buddhist world as a favorite form of expression for talking about things that cannot be captured in words; content and style of some major works of Buddhist poetry; theories about relationships between words and meaning that inform poems; scandalous lives of poets; opportunity to explore Buddhist poetry analytically and creatively; no prior knowledge of Asian languages required. Same as ASIA:4660.

RELS:4768 Islamic Sects 3 s.h.
Nexus between key texts (i.e., the Qur’an, Hadith, Tafsir, usul, kalam, and other literatures) and the rise and development of Islamic sects and groupings, including Kharajites, Shiites, Ibadis, Salafis, and Sufis.

RELS:4870 Islamic Cultural Presence in Spain 3 s.h.
Islamic history and culture in the Iberian Peninsula from Middle Ages to present. Taught in Spanish. Requirements: one literature or culture course taught in Spanish numbered SPAN:3200 or above. Same as SPAN:4870.

RELS:4893 Classical Arabic: Vocabulary, Syntax, and Grammar 1-3 s.h.

RELS:4920 Native American Women and Religious Change 3 s.h.
Native women’s diverse experiences and their roles in native societies, examined through contact experiences between native and nonnative peoples; changes in women’s roles in context of interactions between native people, missionaries, European colonists, and Americans; approaches to re-imaging women’s early contact roles presented in cultural narratives, archaeology, history, ethnography, and missionary records. Same as AINS:4560, GWSS:4560.

RELS:4939 Controversial Religions in U.S. History 3 s.h.
Movements in North American history marked by violence (i.e., Peoples Temple, Lakota Ghost Dance, Branch Davidians, Shawnee Movement); the role of violence in expressing and shaping some religious movements.

RELS:4950 Senior Majors Seminar 3 s.h.
Issues central to academic study of religion.


RELS:4970 Honors Tutorial 2-3 s.h.

RELS:4975 Honors Essay 2-4 s.h.

RELS:5067 Readings in Islamic Studies arr.
Current scholarship in the field of Islamic studies; major works in areas such as modern Islamic thought, Islamic legal and philosophical traditions, religion and politics.

RELS:5100 Teaching and Public Engagement 2-3 s.h.

Graduate
Critical importance of educating people about religion within increasingly globalized and digitized contexts; preparation to excel as classroom teachers and facilitators of cross-religious dialogue in public sphere.

RELS:5200 Varieties of Religion in the Contemporary World
3 s.h.
Limited content of multiple religious traditions from different parts of contemporary world; conversing knowledgably about global religious diversity; preparation to design and teach a world religions course.

RELS:5300 Genealogies of Religion
3 s.h.
Genealogies of the idea of religion, academic study of religion, and comparative study of religions; intellectual and ideological foundations of discipline; preparation to work skillfully across traditions.

RELS:5400 Methods and Theories in the Study of Religion
3 s.h.
Principal methods, theories in academic study of religion.

RELS:6040 Tiberius to Trajan
arr.
Authors and topics from the first and second centuries C.E. Same as CLSL:6013.

RELS:6050 The Art of Reading Sacred Literature in Judaism and Islam
arr.
Ways in which Jews and Muslims in the Middle Ages interpreted sacred writ; works by al-Farabi, Averroes, Halevi, and Maimonides; tension between reason (the great attraction of these thinkers to Plato and Aristotle and their interpreters) and revelation (their faith commitment to revelation, i.e., sacred writ).
Requirements: reading knowledge of Biblical Hebrew or Arabic.

RELS:6070 Nonprofit Organizational Effectiveness I
3 s.h.

RELS:6075 Nonprofit Organizational Effectiveness II
3 s.h.
Qualities for leadership of nonprofit organizations, including relationships with staff and volunteers; relationship of nonprofit and outside world; marketing, public relations, advocacy strategies for nonprofits.

RELS:6150 Seminar: Religion in America
3 s.h.
Religious experience in America; topics.

RELS:6200 Seminar: Religious Ethics
3 s.h.

RELS:6350 Gender and Religion
3 s.h.
What contemporary religious and spiritual groups and their members believe about sex, sexuality, and gender; how they define and redefine what it means to be a "man" and a "woman"; exploration of contemporary "conservative" and "progressive" cosmologies and theologies; underlying beliefs that construct these perspectives and the impact on individual and group practices; broader implications of individual and group beliefs and practices on national and global policies. Same as GWSS:6350.

RELS:6475 Seminar: Reformation Culture and Theology
arr.
Culture and theology of 16th-century Europe. Same as HIST:6475.

RELS:6520 Seminar: South Asian Religion
3 s.h.
Topics in South Asian religions. Same as ASIA:6520.

RELS:6580 Seminar: Religion and Society
3 s.h.

RELS:6723 Seminar on Islamic Law and Government
3 s.h.
Islamic legal and political legacy from formative period until modern time; critical analysis of logic and context of development; development of jurisprudential, legal, and political literature; overview of theories and practices of governance in Islam beginning with Caliphate system and ending with modern nation-state models. Same as LAW:9723.

RELS:7100 Readings in American Religions
arr.

RELS:7200 Readings in Religious Ethics
arr.

RELS:7260 French Paleography
1.3 s.h.
Independent study of original French writings.

RELS:7400 Readings in Theology and Religious Thought
arr.

RELS:7450 Readings in History of Christianity
arr.

RELS:7500 Readings in Asian Religions
arr.

RELS:7600 Readings in Islamic and Middle Eastern Studies
1-3 s.h.
Advanced works and/or texts in primary languages (Arabic, Persian, etc.) in the broad field of Islamic and Middle Eastern studies. Requirements: proficiency in Modern Standard Arabic.

RELS:7650 Readings in Ancient Near Eastern Religions
arr.
Ancient Near Eastern religious texts; focus on their place in ancient Near Eastern history and religious thought.

RELS:7900 Individual Study: Graduates
arr.

RELS:7950 Thesis
arr.
Rhetoric

Chair
• Steve Duck

Undergraduate minor: rhetoric and persuasion
Faculty: http://clas.uiowa.edu/rhetoric/people
Web site: http://clas.uiowa.edu/rhetoric/

The Department of Rhetoric offers undergraduate courses that fulfill the Rhetoric requirement of the different colleges at the University; see General Education Program (p. 313) in the Catalog. It also provides individual instruction in its Writing Center and Speaking Center and offers other undergraduate courses, course seminars, and an undergraduate minor.

Rhetoric for General Education

Rhetoric courses help students to develop skills in speaking, writing, listening, and critical reading. They also build competence in research and inquiry as well as in analysis and persuasion, starting with public controversies in their social contexts and generalizing to all forms of idea presentation, whether academic readings, everyday debates, media messages, or student papers. Writing and speaking skills are emphasized and developed.

All rhetoric classes follow specific department goals, but each instructor uses a unique set of texts and contexts to teach rhetorical concepts. Rhetoric courses are sometimes organized around a special topic, such as the STEM fields (science, technology, engineering, and mathematics), nursing, or law, but the primary emphasis is always on responsible inquiry and analysis. Some course sections involve special activities, such as service-learning components, but the workload across all sections is comparable, with a fixed number of major assignments and a department-approved library of readings.

During their first year at the University, students enroll in the rhetoric course indicated on their degree audit unless they are required to complete one or more prerequisite courses in English as a Second Language (ESL) as a result of their English proficiency evaluation. Students required to enroll in English as a Second Language (ESL) courses must complete all of their required ESL courses before they may register for any rhetoric course or use the services of the Department of Rhetoric Writing Center or Speaking Center.

Students planning to transfer to the University of Iowa should discuss rhetoric course equivalencies as soon as possible with the University of Iowa Office of Admissions. To learn more about General Education’s Rhetoric requirement, see General Education Program (p. 313) in the Catalog.

Students who undergo formal evaluation by Student Disability Services and are found to be learning disabled in reading, writing, or speaking should request reasonable accommodations in order to complete rhetoric. Accommodations may be arranged by Student Disability Services in consultation with the Department of Rhetoric and individual instructors.

Undergraduate Program of Study

• Minor in rhetoric and persuasion

The minor in rhetoric and persuasion educates students in responsible, credible, and effective methods to take active leadership roles in engaging social issues in personal, professional, and communal settings. The program empowers students to look at the world as a place open to change and receptive to influence and to view themselves as agents capable of improving the world and their place in it.

The minor aims to professionalize students—whether in their capacity as individual citizens, members of the community, or leaders in the workplace—by guiding them to understand audiences and situations, to use language responsibly and strategically, and to develop the integrity and authority of their own voice.

Minor

The minor in rhetoric and persuasion requires a minimum of 15 s.h., including 12 s.h. earned in courses taken at the University of Iowa and at least 9 s.h. earned in Department of Rhetoric courses. Students must maintain a g.p.a. of at least 2.00 in all courses for the minor and in all UI courses for the minor. Course work in the minor may not be taken pass/nonpass. The minor requires the following course work.

At least 6 s.h. from these:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>RHET:2031/GWSS:2000</td>
<td>Desire, Consent, and Sex in U.S. Culture(s): Replacing Coercion and Violence with Respect</td>
<td>3 s.h.</td>
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<tr>
<td>RHET:2055</td>
<td>Persuasion and Advocacy: Performing Women's Voices</td>
<td>3 s.h.</td>
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<tr>
<td>RHET:2065</td>
<td>Persuading Different Audiences</td>
<td>3 s.h.</td>
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<tr>
<td>RHET:2075</td>
<td>Digital Selves: Online Identities</td>
<td>3 s.h.</td>
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<tr>
<td>RHET:2085</td>
<td>Speaking Skills</td>
<td>3 s.h.</td>
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<tr>
<td>RHET:2095</td>
<td>Fundamental Strategies of Persuasion</td>
<td>3 s.h.</td>
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<tr>
<td>RHET:2620</td>
<td>Body Language: Study of Movement and Gesture in Speaking</td>
<td>3 s.h.</td>
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<td>RHET:2990</td>
<td>The Art of Marketing Ideas Online</td>
<td>3 s.h.</td>
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<tr>
<td>CLSA:3742</td>
<td>Word Power: Building English Vocabulary</td>
<td>3 s.h.</td>
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<tr>
<td>THTR:1140</td>
<td>Basic Acting</td>
<td>3 s.h.</td>
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At least 9 s.h. from these:

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<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tr>
<td>RHET:2610/THTR:2610</td>
<td>Acting for Success</td>
<td>3 s.h.</td>
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<tr>
<td>RHET:2993</td>
<td>Online Portfolio</td>
<td>2-3 s.h.</td>
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<tr>
<td>RHET:3085</td>
<td>Advanced Speaking Skills</td>
<td>3 s.h.</td>
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<tr>
<td>RHET:3140</td>
<td>Nature and Society: Controversies and Images</td>
<td>3 s.h.</td>
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<tr>
<td>RHET:3600/COMM:3600</td>
<td>Issues in Rhetoric and Culture: Crafting Electronic Identities</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>RHET:3610/ASP:3610/GWSS:3610</td>
<td>Writing in the Presence of Death: Rhetoric, Narrative, and Hospice</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>RHET:3700</td>
<td>Advocacy and Sustainability: Crafting Stories of People, Place, and Resilience</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>COMM:1816</td>
<td>Business and Professional Communication</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>GWSS:3138</td>
<td>Writing to Change the World</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>THTR:3421/GWSS:3421</td>
<td>Performing Autobiography</td>
<td>3 s.h.</td>
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Courses
Lower-Level Undergraduate

General Education

RHET:1030 Rhetoric  4-5 s.h.
Analysis and critique to discover, question, explain, and justify positions and claims made in writing and speaking; reading and listening to comprehend and assess arguments; employment of rhetorical concepts (e.g., purpose, audience); understanding research as responsible inquiry for speaking and writing; special topics, activities. Requirements: completion of any required ESL courses. GE: Rhetoric.

RHET:1040 Writing and Reading  3 s.h.
Introductory course in writing required of students who have completed a college-level public speaking course, but have not otherwise satisfied the rhetoric requirement. Requirements: completion of GE speaking requirement and any required ESL courses. GE: Rhetoric - Writing.

RHET:1060 Speaking and Reading  3 s.h.
Introductory course in speaking required of students who have completed 6 s.h. of college writing instruction, but have not otherwise satisfied the rhetoric requirement. Requirements: completion of GE writing requirement and any required ESL courses. GE: Rhetoric.

Other Lower-Level Courses

RHET:1000 First-Year Seminar  1-2 s.h.
Small discussion class taught by a faculty member; topics chosen by instructor; may include outside activities (e.g., films, lectures, performances, readings, visits to research facilities). Requirements: first- or second-semester standing.

RHET:1010 Writing for Academic Success  0 s.h.
Individualized instruction in the Writing Center; in conjunction with General Education rhetoric courses.

RHET:2000 Creativity for a Lifetime  3 s.h.
Exploration of what senior artists can teach about creativity and aging; interdisciplinary project-based collaborative learning opportunities that consider role of arts and creativity across a lifespan; essential skills necessary to be professionals in numerous careers including health, social work, education, humanities, and the arts; integration of teamwork and opportunities for individual growth that allow for personal development; identification of ways for students to be more creative in their own lives and work. Same as ARTS:2000, ASP:2000, EDTL:2000.

RHET:2031 Desire, Consent, and Sex in U.S. Culture(s): Replacing Coercion and Violence with Respect  3 s.h.
Exploration of desire, sex, consent, and sexual violence in practical and theoretical dimensions; recent demands by students to change the way sexual violence is addressed; theory and sources from popular media; lectures by scholars, activists, and professionals; sexual violence, rape culture, and sexuality-based oppression confronted with academic/therapeutic/political knowledge; real world strategies to help better understand and combat sexual violence, theories. Prerequisites: RHET:1030. Same as GWSS:2000.

RHET:2055 Persuasion and Advocacy: Developing Women's Voices  3 s.h.
History of women's rhetoric in the West and ways in which these approaches can be adapted to modern contexts; best means to impel a specific audience in a particular moment, recognizing that audiences and contexts are multiplied by technology; students critique current presentational techniques with special attention to how each succeeds or fails in its approach to relevant audiences; creation of multimodal projects for real world purposes (e.g., personal web sites, persuasive video or audio essays, promotional project for local advocacy group, public performance); formal presentations on results of inquiry-guided research. Requirements: completion of General Education rhetoric requirement.

RHET:2065 Persuading Different Audiences  3 s.h.
Examination of ways people sway one another in different contexts; best means to impel a specific audience in a particular moment, recognizing that audiences and contexts are multiplied by technology; students critique current presentational techniques with special attention to how each succeeds or fails in its approach to relevant audiences; creation of multimodal projects for real world purposes (e.g., personal web sites, persuasive video or audio essays, promotional project for local advocacy group, public performance); formal presentations on results of inquiry-guided research. Requirements: completion of General Education rhetoric requirement.

RHET:2075 Digital Selves: Online Identities  3 s.h.
Production of a persuasive self in social media; issues of identity and performance in electronic forms. Prerequisites: RHET:1030. Requirements: completion of General Education rhetoric requirement.

RHET:2085 Speaking Skills  3 s.h.
Five basic skills of speaking (the five canons) recognized by Rhetoricians—invention, arrangement, style, memory, and delivery; development of these skills by working from their classical roots to modern times and situations; builds on previous learning in basic rhetoric; various presentations using these five skills, all relevant to persuasion and active use of rhetoric in everyday life. Requirements: completion of General Education rhetoric requirement.

RHET:2095 Fundamental Strategies of Persuasion  3 s.h.
Strategies of approaching persuasion in a variety of personal, professional, and communal contexts; fundamentals of persuasion including audience adaptation, creating reasoned and passionate appeals, conveying character, and enabling identification taught from perspective of production. Prerequisites: RHET:1030. Requirements: completion of General Education rhetoric requirement.

**RHET:2410 Rhetoric and Past Public Controversy: The Sixties**  
3 s.h.
Role of rhetoric in public controversy in particular historical time periods; focus on various perspectives, diverse voices, and multiple arguments informing particular movements/issues. Requirements: for COMM:2079 — communication studies major, g.p.a. of at least 2.30, and completion of four Foundation of Communication courses chosen from COMM:1112 or COMM:1170, COMM:1117 or COMM:1130, COMM:1168 or COMM:1174, COMM:1301, and COMM:1305. Same as COMM:2058.

**RHET:2610 Acting for Success**  
3 s.h.
How skills learned by actors in the theatre world can be applied to presentations and interactions in business, education, and beyond; business world reliance on technology for communication; ability to connect and communicate on a personal level with others as the x-factor to stand out as a team player and a leader; acting techniques traditionally used in theatre to open up communication in office and interviews; presentations and elevator pitches (armed with techniques to avoid stage fright); how to connect and bring authentic self to everything you do. Same as THTR:2610.

**RHET:2620 Body Language: Study of Movement and Gesture in Speaking**  
3 s.h.
How to effectively analyze and perform movement and gesture in public and interpersonal speaking situations; development of skills; use of movement and gesture in many types of public speeches including academic and professional presentations, political debates, ceremonial addresses, protest demonstrations; readings from classical treatises on oratory to recent social science research on nonverbal communication. Prerequisites: RHET:1030 and RHET:1040 and RHET:1060.

**RHET:2990 The Art of Marketing Ideas Online**  
3 s.h.
Principles of persuasion, marketing, and new media; forms of self-presentation, current methods of targeting audiences, dynamics of social interaction; strategies and tactics for attracting and maintaining interest for audiences; emphasis on popular forms of new media technology today (Twitter, Facebook, LinkedIn, blogs); analysis of tools and techniques for presenting and interacting; formulate ideas about a product, event, fashion, social cause, or a way of life; express ideas persuasively; strategic marketing through social media sites.

**RHET:2993 Online Portfolio**  
2-3 s.h.
Practical training to create an online portfolio; creation of web page through WIX that gives a comprehensive view of student's experience and aspirations to enter job market; personal and professional identity profiles ("about me"), WordPress blogs to reinforce personal/professional identity profiles, section or video with pertinent experience, résumé or a link to LinkedIn. Requirements: satisfaction of General Education rhetoric requirement prior to enrollment.

**Upper-Level Undergraduate and Graduate**

**RHET:3085 Advanced Speaking Skills**  
3 s.h.
Preparation for speaking as a leader; variety of speaking and public address situations relevant to academic and professional aspirations; practice speaking in settings such as video-recorded speeches (e.g., TED talks), impromptu formal and informal presentations, panel presentations, press conferences, elevator pitches, lectures, podcasts and radio broadcasts, interviews including video interviews (e.g., Skype), job talks; multimodal projects to engage with real audiences beyond the classroom.

**RHET:3140 Nature and Society: Controversies and Images**  
3 s.h.
Theoretical perspectives that explain and/or interpret environmental change and human environmental interactions; conceptual tools to understand complex relationship between nature and society at multiple scales; ways in which individuals and communities have overcome economic and environmental limitations in economically developed countries and economically developing countries; critical thinking through exposure to contentious viewpoints and assessment of their strengths and weaknesses. Prerequisites: RHET:1030. Requirements: completion of General Education rhetoric requirement.

**RHET:3153 Networks, Strategies, and Tactics**  
3 s.h.
Reconsidering views on the city; how infrastructural, social, and digital networks influence daily lives; array of social and spatial theories that view the city as a constantly evolving landscape of needs and desires; how space is used, how spaces variably influence people; modes of social control and resistance; opportunities and problems that tend to be missed when daily life and its design is looked at as a foregone conclusion.

**RHET:3360 Classical Techniques in Modern Speaking**  
3 s.h.
Examination of public speaking in context of ancient Greece, when the shift from aristocracy to democracy made public speaking the only way to rise to a position of power; excerpts from ancient texts that demonstrate link between public speaking and democracy; strategies ancients used in public, celebratory, political, and judicial settings to make the best case for themselves; application of these strategies in modern settings for public speaking.

**RHET:3600 Issues in Rhetoric and Culture: Crafting Electronic Identities**  
3 s.h.
Graduate

RHET:5330 Directing a Writing Center arr.
Supervised tutoring in Writing Center involving graduate and undergraduate tutors and fellows across disciplines; providing instruction on recruitment and development of writing support teams; helping a variety of persons on campus (undergraduate, graduate, faculty) to improve their writing skills in many different areas, ranging from class or conference papers to publicity materials. Requirements: professional development program and rhetoric teaching.

RHET:5335 Directing a Speaking Center arr.
Supervised tutoring in Speaking Center involving graduate and undergraduate tutors and fellows across disciplines; providing instruction on recruitment and development of writing support teams; helping a variety of persons on campus (undergraduate, graduate, faculty) to improve their speaking skills in many different areas, ranging from class or conference papers to publicity materials. Requirements: professional development program and rhetoric teaching.

RHET:5350 Colloquium: Teaching Rhetoric 3 s.h.
Professional development program for new rhetoric teachers; includes three-day workshop.

RHET:5352 Seminar: Topics in Teaching and Professional Development 3 s.h.
Professional development and advanced study of pedagogical theories and practices; focus on teaching as a rhetorical act; readings on pedagogy, composition theories, and learning process; academic and alt-ac career options; teaching philosophy statement, teaching portfolio, peer classroom observations, and research project; for experienced rhetoric instructors and others teaching writing-intensive, process-oriented courses. Recommendations: previous or current teaching experience in composition-intensive courses.

RHET:5375 Teaching in a Writing Center 3 s.h.
Seminar/practicum to prepare graduate students to teach in the University of Iowa Writing Center or similar settings; seminar component on writing and reading processes; tutoring strategies, English-as-a-second-language issues; practicum experience tutoring in the Writing Center. Same as CNW:5375.

RHET:5385 Teaching in a Speaking Center 3 s.h.
Preparation to teach in University of Iowa Speaking Center or similar settings; seminar component on speaking and reading processes, tutoring strategies, English-as-a-second-language issues; practicum experience tutoring in speaking center.

RHET:6071 Studies in Sentimentalism and Affect Theory 3 s.h.
Readings in sentimentalism as literary genre, rhetorical practice, cultural mode, and psychosocial phenomenon; focus on attendant theories of affect; integration of literature and culture with work on politics of affect in postcolonial and transnational studies, critical race and ethnic studies, American studies, gender and sexuality studies. Same as ENGL:6075.
RHET:6400 Current Issues in Rhetoric 3 s.h.
Ethical, social, or cultural issues; rhetoric's role in their contemporary significance; traditional aspects of rhetoric, their pertinence to present concerns. Same as COMM:6400.

RHET:6965 Topics in Second Language Acquisition: Writing 3 s.h.
Theory, pedagogy, research, and assessment in second language writing. Taught in English. Same as SLA:6965, SPAN:6965.

RHET:7900 Special Project for Graduate Students arr.

RHET:7920 Innovative Methods in Pedagogy: Radical Feminist Pedagogy 3 s.h.
Readings in history, theory, and practice of pedagogical innovations appropriate to composition instruction and other interdisciplinary teaching; project-based assignments that produce materials appropriate for classroom use. Same as GWSS:7920.

RHET:7930 Writing in the Disciplines arr.
Writing instruction.
Second Language Acquisition

Director, Division of World Languages, Literatures, and Cultures
• Russell Gamin

Director, Second Language Acquisition
• Paula M. Kempchinsky

Graduate degree: Ph.D. in second language acquisition
Faculty: http://clas.uiowa.edu/dwllc/flare/affiliated-faculty
Web site: http://clas.uiowa.edu/dwllc/flare/second-language-acquisition-phd-program

Second language acquisition (SLA) is a multidisciplinary field whose goal is to understand the processes that underlie non-native language learning. The Second Language Acquisition Program draws from varied academic disciplines, among them linguistics, psychology, psycholinguistics, sociology, sociolinguistics, discourse analysis, conversation analysis, and education.

Second Language Acquisition is administered by the Division of World Languages, Literatures, and Cultures (p. 228).

Graduate Program of Study
• Doctor of Philosophy in second language acquisition

Doctor of Philosophy

The Doctor of Philosophy program in second language acquisition requires 72 s.h., including a maximum of 33 s.h. earned in work toward a master's degree. The program is interdisciplinary and focuses on languages other than English. Students interested in pursuing the Ph.D. must hold a master's degree in an appropriate field (e.g., linguistics, foreign language education, English as a second language) or have equivalent academic experience. Students begin the program in the fall.

Doctoral students may specialize in one of three areas: linguistics, language program direction, or technology. They may pursue their interdisciplinary interests in courses offered by the College of Liberal Arts and Sciences (p. 24) Departments of Asian and Slavic Languages and Literatures, Communication Sciences and Disorders, French and Italian, German, Linguistics, Rhetoric, and Spanish and Portuguese, and the College of Education (p. 735) Departments of Psychological and Quantitative Foundations, and Teaching and Learning.

The program is divided into foundation courses (13 courses, or 39 s.h.); specialization courses (5 courses, or 15 s.h.), and dissertation work (18 s.h.). A course may be used to fulfill only one requirement.

FOUNDATION COURSES
Students earn a total of 39 s.h. in foundation courses.
All of these (9 s.h.):

SLA:6901 Second Language Acquisition Research and Theory 3 s.h.
SLA:6902 Second Language Acquisition Research and Theory II 3 s.h.
SLA:6920 Multimedia and Second Language Acquisition 3 s.h.

Two of these (6 s.h.):

SLA:5973/GRMN:3540 Grammar in Second Language Teaching/Learning 3 s.h.
SLA:6950 Topics in Second Language Acquisition: Speaking 3 s.h.
SLA:6955 Topics in Second Language Acquisition: Listening 3 s.h.
SLA:6965 Topics in Second Language Acquisition: Writing 3 s.h.
SLA:6970 Cultural Curriculum 3 s.h.
EDTL:6484 Reading in a Second Language 3 s.h.

To complete the foundation requirement, students select one course from each of the following eight areas (total of 24 s.h.), in consultation with their advisors. With the advisor's approval, a student may use courses not listed here to fulfill the requirement.

Curriculum

One of these:
EDTL:5086 Curriculum Foundations 2-3 s.h.
EDTL:6408 Designing Materials for Second Language Instruction 3 s.h.
EDTL:6497 Principles of Course Design for Second Language Instruction 3 s.h.
EDTL:7100 Design and Organization of Curriculum 3 s.h.

Quantitative Research Tools

One of these:
PSQF:6220 Quantitative Educational Research Methodologies 3 s.h.
PSQF:6243 Intermediate Statistical Methods 4 s.h.
PSQF:6244 Correlation and Regression 4 s.h.
PSQF:6246 Design of Experiments 4 s.h.

Qualitative Research Tools

One of these:
EDTL:7070 Introduction to Qualitative Methods in Literacy Research 3 s.h.
EDTL:7410 Mixed Methods Research 3 s.h.
EPLS:7373 Qualitative Research Design and Methods 3 s.h.

Testing, Evaluation, Measurement

One of these:
EDTL:6400 Fundamentals of Second Language Assessment 3 s.h.
PSQF:4150 Introduction to Educational Measurement 3-4 s.h.
PSQF:5165 Introduction to Program and Project Evaluation 3 s.h.
PSQF:6255 Construction and Use of Evaluation Instruments 3 s.h.
PSQF:6257 Educational Measurement and Evaluation 3 s.h.
PSQF:6258 Theory and Technique in Educational Measurement 3 s.h.
PSQF:6265 Program Evaluation 3 s.h.

Methodology
One of these:

SLA:5000 Teaching and Learning Languages 3 s.h.
CHIN:7401 Teaching Chinese as a Second Language I 3 s.h.
CHIN:7403 Teaching Chinese as a Second Language III 3 s.h.
JPNS:5401 Japanese as a Foreign Language: Practical Applications 3 s.h.
LING:4050 Methods of Teaching English as a Second Language 3 s.h.

Phonetics, Phonology
One of these:

LING:3005 Articulatory and Acoustic Phonetics 3 s.h.
LING:3020 Phonological Analysis 3 s.h.
LING:5020 Introduction to Phonology 3 s.h.
LING:6020 Phonological Theory 3 s.h.
LING:7020 Advanced Phonological Theory 3 s.h.
SPAN:4100 Introduction to Spanish Phonology 3 s.h.
SPAN:6110 Spanish Phonology 3 s.h.

Morphology, Syntax
One of these:

LING:3010 Syntactic Analysis 3 s.h.
LING:5010 Introduction to Syntax 3 s.h.
LING:6010 Syntactic Theory 3 s.h.
LING:7010 Advanced Syntactic Theory 3 s.h.
SPAN:4150 Introduction to Spanish Syntax 3 s.h.
SPAN:6120 Spanish Syntax 3 s.h.
SPAN:6190 Topics in Comparative Romance Linguistics 3 s.h.

General Linguistics
One of these:

SLA:4080 Linguistic Theory and Second Language Acquisition 3 s.h.
SLA:6403 Special Topics in Japanese Linguistics 3 s.h.
CHIN:3302 Introduction to Chinese Linguistics 3 s.h.
CHIN:7401 Teaching Chinese as a Second Language I 3 s.h.
LING:3118 Language Acquisition 1-3 s.h.
LING:5030 First Language Acquisition 3 s.h.
LING:6080 Generative Second Language Acquisition 3 s.h.
LING:7090 Seminar: Problems in Linguistics 2-3 s.h.
SPAN:6150 Topics in Spanish Language Acquisition 3 s.h.

SPECIALIZATION COURSES
Each student selects one of three specialization areas—linguistics, language program direction, or technology—and takes five courses (total of 15 s.h.) in that area.

Linguistics Specialization
The linguistics specialization requires a three-course sequence (choice of phonology or syntax) and two additional courses.

One of these three-course sequences (group 1 or group 2):

Group 1:
LING:5020 Introduction to Phonology 3 s.h.
LING:6020 Phonological Theory 3 s.h.
LING:7020 Advanced Phonological Theory 3 s.h.

Group 2:
LING:5010 Introduction to Syntax 3 s.h.
LING:6010 Syntactic Theory 3 s.h.
LING:7010 Advanced Syntactic Theory 3 s.h.

One of these:
LING:4080 Linguistic Theory and Second Language Acquisition 3 s.h.
LING:6080 Generative Second Language Acquisition 3 s.h.
An alternate course on linguistic theory and second language acquisition

One of these:
PSY:3085 Language Development 3 s.h.
An alternate course on parsing/psycholinguistic mechanisms

Language Program Direction Specialization
The language program direction specialization requires five courses chosen from the lists below. The specialization may not include courses used to satisfy the foundation requirements. Some students may include an internship in their work for the specialization.

Five of these, or four of these plus internship:
SLA:5973 Grammar in Second Language Teaching/Learning 3 s.h.
SLA:6403 Special Topics in Japanese Linguistics 3 s.h.
SLA:6950 Topics in Second Language Acquisition: Speaking 3 s.h.
SLA:6955 Topics in Second Language Acquisition: Listening 3 s.h.
SLA:6965 Topics in Second Language Acquisition: Writing 3 s.h.
SLA:6970 Cultural Curriculum 3 s.h.
CHIN:7403 Teaching Chinese as a Second Language III 3 s.h.
EDTL:6402 Second Language Program Management 3 s.h.
EDTL:6403 Language Policy and Planning 3 s.h.
EDTL:6408 Designing Materials for Second Language Instruction 3 s.h.
EDTL:6480 Issues in Foreign Language Education 3 s.h.
EDTL:6483 Second Language Classroom Learning 3 s.h.
EDTL:6484 Reading in a Second Language 3 s.h.
EDTL:6497 Principles of Course Design for Second Language Instruction 3 s.h.
EDTL:7015 Ph.D. Seminar in Language, Literacy, and Culture arr.
PSQF:6205 Design of Instruction 3 s.h.
PSQF:6215 Web-Based Learning 3 s.h.
Some students may count an internship experience toward the specialization.

SLA:7000 Internship  arr.

**Technology Specialization**

The technology specialization requires three courses in psychological and quantitative foundations and two additional courses.

Psychological and quantitative foundations—one of these:

- PSQF:6205 Design of Instruction  3 s.h.
- PSQF:6275 Constructivism and Design of Instruction  3 s.h.

And both of these:

- PSQF:6208 Designing Educational Multimedia  3 s.h.
- PSQF:6215 Web-Based Learning  3 s.h.

Remaining specialization course work—total of two courses chosen from the following lists (other courses may be approved by the student’s advisor):

- CS:3110 Introduction to Informatics  3 s.h.
- LING:4080 Linguistic Theory and Second Language Acquisition  3 s.h.
- PSQF:6203 Tools and External Representations in Learning Processes  3 s.h.
- SLIS:5020 Computing Foundations  3 s.h.
- A practicum course  3 s.h.

May include one of these (if not taken for the three-course sequence in psychological and quantitative foundations, above):

- PSQF:6205 Design of Instruction  3 s.h.
- PSQF:6275 Constructivism and Design of Instruction  3 s.h.

May include one of these:

- SLA:7025 Special Projects in Second Language Acquisition  3 s.h.
- PSQF:6293 Individual Instruction in Psychological and Quantitative Foundations  3 s.h.

Before they take SLA:7025 or PSQF:6293, students should complete the core design and technology courses PSQF:6205 Design of Instruction or PSQF:6275 Constructivism and Design of Instruction, PSQF:6208 Designing Educational Multimedia, and PSQF:6215 Web-Based Learning.

**THESIS**

All candidates must complete a thesis (SLA:7030 Ph.D. Thesis), for which they may earn up to 18 s.h. of credit.

**OPTIONAL COURSE WORK**

Students may include the following optional course work in their degree programs.

- SLA:7015 Special Topics in Second Language Acquisition  arr.
- SLA:7025 Special Projects in Second Language Acquisition  arr.

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**Admission**

Admission is for fall semester; students are admitted only for full-time study. Applicants must meet the admission requirements of the Graduate College; see the Manual of Rules and Regulations of the Graduate College. Strong applicants hold a master's degree in a related area, have a cumulative g.p.a. of at least 3.50 in master's degree work, and speak and write English and another language at a professional level. Applicants must submit a writing sample that demonstrates their ability to synthesize and analyze information using standard academic English.

**Financial Support**

Teaching assistantships are available through the Foreign Language Acquisition Research and Education Program (FLARE). Assistantships usually involve teaching elementary or intermediate language courses. FLARE also offers a limited number of research assistantships. Visit the FLARE web site for details.

**Courses**

**Upper-Level Undergraduate and Graduate**

**SLA:3302 Introduction to Chinese Linguistics**  3 s.h.

Aspects of modern Chinese linguistics, such as Chinese phonology, syntax, pedagogical grammar, history of the language. Taught in English. Same as CHIN:3302, LING:3302.

**SLA:3400 Articulatory and Acoustic Phonetics**  3 s.h.

Production and transcription of sounds in human languages; physics of sound, computer analysis of speech sounds. Offered fall semesters. Same as LING:3005.

**SLA:3401 Language Development**  3 s.h.

Introduction to first language acquisition, with focus on infancy through five years; sound discrimination abilities, word learning, babbling and speech production, acquisition of grammar; perspectives from psychology, audiology, linguistics, speech pathology. Prerequisites: PSY:2701. Requirements: grade of C- or higher in PSY:2401 or PSY:2601 and grade of C- or higher in PSY:2810. Same as PSY:3085.

**SLA:4080 Linguistic Theory and Second Language Acquisition**  3 s.h.

Introduction of research results obtained by generative second language acquisition framework and their implications for classroom teaching methods; current views of language architecture; focus on inflectional morphology and linguistic interfaces, which have been proposed to be severe bottlenecks for acquisition; research findings on acquisition of syntax, phonology, semantics, linguistic pragmatics; pedagogical implications of these findings. Prerequisites: LING:3010 and LING:3020. Same as LING:4080.
SLA:4300 Introduction to Spanish Syntax 3 s.h.
Basic principles of generative syntax as applied to analysis of Spanish syntactic structure; extensive syntactic analysis. Prerequisites: SPAN:3100. Same as SPAN:4150.

SLA:4301 Introduction to Spanish Phonology 3 s.h.
Sound patterns of Spanish; how various theoretical approaches solve basic problems in Spanish phonology; identification of linguistic universals, how they are manifested in the sound structure of Spanish. Prerequisites: SPAN:3100. Same as SPAN:4100.

SLA:4401 Methods of Teaching English as a Second Language 3 s.h.
Observations of ESL and intensive English classes at the University; design and presentation of short lessons, text evaluation, demonstrations of innovative approaches of the last decade; materials. Offered spring semesters. Prerequisites: SPAN:3100. Same as SPAN:4100.

Graduate

SLA:5000 Teaching and Learning Languages 3 s.h.
Readings in pedagogical theory and practice, second language acquisition; experience designing activities for teaching and assessment with critiques based on current theories and approaches; development of reflective practices toward one’s own language teaching. Same as WLLC:5000, FREN:5000, SPAN:5000, GRMN:5001.

SLA:5010 Introduction to Syntax 3 s.h.
Methods and argumentation for formal analysis of sentence structure through induction from language data of central concepts and relations; hypothesis testing, empirical bases of theoretical concepts. Corequisites: LING:5000. Same as LING:5010.

SLA:5020 Introduction to Phonology 3 s.h.
Analysis of sound systems, focus on early generative phonological theory; extensive practice in analysis using data from a variety of languages; linguistic argumentation. Prerequisites: LING:3005. Same as LING:5020.

SLA:5401 First Language Acquisition 3 s.h.
Child language from a crosslinguistic perspective. Prerequisites: LING:3005 and (LING:4040 or LING:5010). Same as LING:5020.

SLA:5441 Japanese as a Foreign Language: Practical Applications 3 s.h.
Instructional methodology, curriculum, and material design; hands-on experience. Prerequisites: JPNS:4502. Same as JPNS:5401.

SLA:5501 Curriculum Foundations 2-3 s.h.
Elementary and secondary background developments in curriculum; definitions, historical perspective, philosophies, theories of knowledge, models, learning theories, directions of development and shaping forces; emphasis on development of a curriculum project. Same as EDTL:5086.

SLA:5973 Grammar in Second Language Teaching/Learning 3 s.h.
Grammer, second language acquisition, and teaching. Taught in English, projects in varied languages. Same as GRMN:3540.

SLA:6010 Syntactic Theory 3 s.h.
Current syntactic theory examined through analysis of data sets, readings in recent research; emphasis on argument construction, statement of formal principles. Offered spring semesters. Prerequisites: LING:5010. Same as LING:6010.

SLA:6011 Phonological Theory 3 s.h.
Post-SPE phonological theory, including autosegmental phonology, feature geometry, the syllable, optimality theory. Prerequisites: LING:5020. Same as LING:6020.

SLA:6300 Foreign Language Teaching Methods 3 s.h.
Readings in pedagogical theory and practice and second language acquisition; experience designing activities for teaching and assessment, with critiques based on current theories and approaches; development of reflective practices toward one’s own language teaching. Same as SPAN:6000.

SLA:6301 Topics in Spanish Language Acquisition 3 s.h.
Theoretical linguistic approaches to monolingual, bilingual, and second language acquisition of Spanish and Portuguese; varied topics. Requirements: at least one course in linguistics (e.g., general introduction to linguistics). Same as SPAN:6150.

SLA:6302 Topics in Comparative Romance Linguistics 3 s.h.
Comparative study of phonology, morphology, or syntax of the main Romance languages as informed by linguistic theory; diachronic or synchronic perspective. Recommendations: additional graduate course work in linguistics. Same as LING:6190, SPAN:6190, CLSA:6990.

SLA:6303 Spanish Phonology 3 s.h.
Modern approaches to synchronic phonology as applied to Spanish; focus on traditional descriptive problems, recent generative analyses. Requirements: phonology or linguistics course. Same as SPAN:6110.

SLA:6304 Spanish Syntax 3 s.h.
Spanish syntactic constructions examined in framework of selected syntactic theory; emphasis on development of syntactic argumentation. Requirements: one course in syntax. Same as SPAN:6120.

SLA:6403 Special Topics in Japanese Linguistics 3 s.h.
Topics in applied linguistics and language pedagogy related to Japanese language. Same as JPNS:6403.

SLA:6452 Generative Second Language Acquisition 3 s.h.
Overview of current second-language acquisition research in the generative linguistic framework; focus on characterizing second language learners' linguistic competence and how it is constrained by principles of universal grammar. Offered fall semesters. Prerequisites: (LING:3010 or LING:5010) and (LING:3020 or LING:5020). Same as LING:6080.

SLA:6500 Issues in Foreign Language Education 3 s.h.
Theoretical perspectives of pivotal research issues at the forefront of foreign language education; systems available to foreign language professionals for disseminating research. Same as EDTL:6480.

SLA:6501 Reading in a Second Language 3 s.h.
Current theory, research, practice in second language reading field; role of textual features and the reader in reading comprehension. Same as EDTL:6484.

SLA:6502 Principles of Course Design for Second Language Instruction 3 s.h.
Contemporary views of second language curriculum design; guidelines necessary for the creation of prototypical curriculum units to be transposed into classroom-ready forms; for individuals interested in foreign language materials development. Same as EDTL:6497.

SLA:6503 Fundamentals of Second Language Assessment 3 s.h.
How to write language tests; discussion of fundamental issues in development of new tests or selection of existing tests. Same as EDTL:6400.

SLA:6504 Second Language Program Management 3 s.h.
Preparation for supervising, administering foreign language programs at all levels; for precollegiate language teachers and graduate students. Same as EDTL:6402.

SLA:6505 Designing Materials for Second Language Instruction 3 s.h.
Critical perspective on creating and using media for second language learning and teaching; research on materials design, development of media. Prerequisites: EDTL:6483. Same as EDTL:6408.

SLA:6506 Second Language Classroom Learning 3 s.h.
Synthesis of empirical findings on children's and adults' learning of a second or foreign language; emphasis on theoretical underpinnings of approaches, methods, techniques in language teaching. Same as ASIA:6483, EDTL:6483.

SLA:6901 Second Language Acquisition Research and Theory 3 s.h.
Theories regarding success and failure in acquisition of second or subsequent languages; research, issues. Same as FREN:6901, ASIA:6901, SPAN:6901, JPN:6901.

SLA:6902 Second Language Acquisition Research and Theory II 3 s.h.
Continuation of SLA:6901. Prerequisites: SLA:6901. Same as ASIA:6903, SPAN:6902.

SLA:6920 Multimedia and Second Language Acquisition 3 s.h.
Foreign language multimedia in context of current second language acquisition theories and research; readings on interactivity, interface design, feedback, learner control; acquisition of vocabulary, grammar, and culture. Requirements: foreign language teaching methodology course. Same as FREN:6920, GRMN:6920, SPAN:6920.

SLA:6950 Topics in Second Language Acquisition: Speaking 3 s.h.
Theory, pedagogy, research, and assessment in second language speaking. Same as FREN:6950, SPAN:6950.

SLA:6955 Topics in Second Language Acquisition: Listening 3 s.h.
Theory, pedagogy, research, and assessment in second language listening. Same as ASIA:6955.

SLA:6965 Topics in Second Language Acquisition: Writing 3 s.h.
Theory, pedagogy, research, and assessment in second language writing. Taught in English. Same as RHET:6965, SPAN:6965.

SLA:6970 Cultural Curriculum 3 s.h.
Culture's role in foreign/second language teaching; definition, pedagogy, assessment, and materials that allow culture to be taught and learned. Same as EDTL:6409.

SLA:6975 Reading in Non-Roman Scripts 3 s.h.
Theory and practice of reading in languages that use non-Roman alphabets, syllabary, logographic systems; reading in first and second language contexts; instructional and literacy development issues. Prerequisites: EDTL:4171 or EDTL:6484. Same as EDTL:6407.

SLA:7000 Internship arr.

SLA:7010 Practicum in CALL Software Development 1-4 s.h.
Supervised experience in an applied setting involving development of computer-assisted language learning (CALL) software. Prerequisites: SLA:6920. Requirements: faculty sponsor.

SLA:7015 Special Topics in Second Language Acquisition arr.

SLA:7020 Readings in Second Language Acquisition arr.

SLA:7025 Special Projects in Second Language Acquisition arr.


SLA:7401 Advanced Syntactic Theory 2-3 s.h.
Recent developments in syntax; comparison of theories, argumentation, and uses of data. Prerequisites: LING:6010. Same as LING:7010.
SLA:7402 Advanced Phonological Theory 2-3 s.h.
Current issues. Prerequisites: LING:6020. Same as LING:7020.

SLA:7404 Seminar: Problems in Linguistics 2-3 s.h.
Intensive study of theoretical and practical problems.
Same as LING:7090.

SLA:7405 Teaching Chinese as a Second Language V 3 s.h.
Seminar on research design; for M.A. students planning to write a thesis or project, or graduate students seeking knowledge in designing qualitative or quantitative studies. Prerequisites: CHIN:7401 and PSQF:4143. Same as CHIN:7405.

SLA:7406 Teaching Chinese as a Second Language I 3 s.h.
Research, theory on acquisition of Chinese as a non-native language. Same as CHIN:7401.

SLA:7804 Teaching Chinese as a Second Language IV 3 s.h.
Overview of goals, concepts, principles, research, and issues in assessment and testing of Chinese as a second language. Same as CHIN:7404.
Social Science Analytics

Chair, Department of Political Science
• Sara Mitchell

Coordinator, Social Science Analytics
• Frederick J. Boehmke (Political Science)

Undergraduate certificate: social science analytics
The Certificate in Social Science Analytics is interdisciplinary and a number of departments collaborate to leverage distinct strengths and offer courses applicable to the certificate, including the Departments of Geographical and Sustainability Sciences (p. 323), Political Science (p. 520), Sociology (p. 585), and Statistics and Actuarial Science (p. 613). The certificate is administered by the Department of Political Science.

Undergraduate Program of Study
• Certificate in Social Science Analytics
The growth of big data and informatics calls for a new set of skills for social science students and an increased understanding of the logic of data collection and analysis. The certificate focuses on the application side of data analysis and allows focus to be on the specific research methods and quantitative skills using data-driven methods effective for more understanding in an increasingly complicated social-political world. The certificate offers an opportunity for interdisciplinary training on how data can be used to address important questions in the social sciences.

The certificate will ensure students are more competitive for careers and opportunities with political campaigns, policy analysis, public opinion firms, consulting and government agencies, and local communities.

Certificate
The Certificate in Social Science Analytics requires a minimum of 19 s.h. Students complete courses from four required content areas: core statistics; social science research design and data analysis; building skills and data science; and the applied research experience.

The certificate program is open to current University of Iowa undergraduate students and to all individuals who hold a bachelor's degree and are not enrolled in a graduate or professional degree program. Students must maintain a g.p.a. of at least 2.00 in work for the certificate.

Students majoring in computer science, geographical and sustainability sciences, political science, sociology, and statistics and actuarial science may count a maximum of 6 s.h. of course work for their major toward the certificate. Students pursing other majors should consult with their major advisors to ascertain whether they may count certificate course work toward their majors.

Some of the certificate courses have prerequisites not included in the certificate requirements. Students should select courses for which they have met the prerequisites.

The following course work is required.

**Core Statistics**
Two of these:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
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<tr>
<td>STAT:3120</td>
<td>Probability and Statistics</td>
<td>4 s.h.</td>
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<tr>
<td>STAT:3200</td>
<td>Applied Linear Regression</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>STAT:6513</td>
<td>Intermediate Statistical Methods</td>
<td>4 s.h.</td>
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**Social Science Research Design and Data Analysis**
One of these:

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<tr>
<td>POLI:3000</td>
<td>Understanding Political Research</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>SOC:2170</td>
<td>Research Methods</td>
<td>3 s.h.</td>
</tr>
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</table>

**Building Skills and Data Science**
At least 6 s.h. from these:

<table>
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<th>Credit Hours</th>
</tr>
</thead>
<tbody>
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<td>CS:2110</td>
<td>Programming for Informatics</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>CS:2210</td>
<td>Discrete Structures</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>CS:2420</td>
<td>Databases for Informatics</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>CS:3980</td>
<td>Topics in Computer Science I</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ECON:4800</td>
<td>Introduction to Econometrics</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>GEOG:1050</td>
<td>Foundations of GIS</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>GEOG:3540</td>
<td>Introduction to Geographic Visualization</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>GEOG:4150</td>
<td>Health and Environment: GIS Applications</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>GEOG:4580</td>
<td>Introduction to Geographic Databases</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>GEOG:4870</td>
<td>Applied Geostatistics</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>POLI:3050</td>
<td>Problems in Methods: Visualizing Social Science Data</td>
<td>arr.</td>
</tr>
<tr>
<td>SOC:3880</td>
<td>Introduction to Network Science</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>STAT:4520</td>
<td>Bayesian Statistics</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>STAT:6510</td>
<td>Applied Generalized Regression</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>STAT:6560</td>
<td>Applied Time Series Analysis</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

**Applied Research Experience**
At least 3 s.h. from these:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOG:4030</td>
<td>Senior Project Seminar</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>POLI:3001</td>
<td>Hawkeye Poll</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>POLI:3150</td>
<td>Problems in American Politics</td>
<td>1-3 s.h.</td>
</tr>
<tr>
<td>POLI:4600</td>
<td>Honors Research Project</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>POLI:4702</td>
<td>Senior Research Project/Paper</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>STAT:6220</td>
<td>Statistical Consulting</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>
Social Work

Director

- Sara Sanders

Undergraduate major: social work (B.A.)
Undergraduate minor: social work
Graduate degrees: M.S.W.; Ph.D. in social work
Faculty: http://clas.uiowa.edu/socialwork/people/faculty
Web site: http://clas.uiowa.edu/socialwork/

The School of Social Work’s mission is to develop, disseminate, and integrate excellent and compelling research-based knowledge, practice, and policy, particularly that related to children, families, and older adults. The school operates from strengths-based perspectives and systems perspectives. It educates its graduates to be culturally competent scholars and practitioners who are committed to social justice and social work values and ethics, and who are prepared to serve in and have a positive impact on a broad range of family-centered and community-based practice settings throughout the State of Iowa and beyond.

The School of Social Work also offers a Ph.D. program, which prepares students to conduct research that contributes to the knowledge base of social work, to be leaders in setting policy and practice, and to teach in colleges and universities.

In addition to offering undergraduate and graduate programs of study in social work, the school administers the Aging Studies Program, which offers a certificate for undergraduate and graduate students and a minor for undergraduates. The school also administers the undergraduate Certificate in Critical Cultural Competence. See Aging Studies (p. 34) and Critical Cultural Competence (p. 214) in the Catalog.

Undergraduate Programs of Study

- Major in social work (Bachelor of Arts)
- Minor in social work

The undergraduate program in social work has been accredited continuously by the Council on Social Work Education (CSWE) since 1974 and is designed to be consistent with the council’s 2008 Educational Policy Statement competencies and practice behaviors. The program’s goals are to:

- prepare students for culturally competent generalist social work practice with individuals, families, small groups, organizations, and communities;
- provide students with a base for continuing graduate education in social work and for lifelong learning; and
- prepare students for active engagement with issues of social justice, oppression, and social welfare in local, state, regional, national, and global goals.

The program draws on a liberal arts perspective; social and behavioral science theory; social research; social policy development, analysis, and implementation; culturally competent intervention and prevention approaches in working with individuals, families, small groups, organizations, and communities; social integration; multiple systems assessment and evaluation; and knowledge pertaining to diversity.

Consistent with CSWE standards, the program views dimensions of diversity as intersections of multiple factors, including age, class, color, culture, disability, ethnicity, gender, gender-identity and expression, immigration status, political ideology, race, religion, sex, and sexual orientation. Students learn that, as a consequence of difference, a person’s life experiences may include oppression, poverty, marginalization, and alienation as well as privilege, power, and acclaim.

Knowledge and practice in social work values and ethics is also an integral part of students’ education. Knowledge and skill related to the evaluation of practice are integrated throughout the curriculum, beginning in SSW:1022 Social Justice and Social Welfare in the United States, continuing through practice and research courses, and culminating in the field experience and field seminar.

ADMISSION TO THE MAJOR

The School of Social Work endeavors to maintain a heterogeneous student body by enrolling students who represent diverse backgrounds and cultural perspectives.

A limited number of students are admitted to the major each year. The application deadline is February 15. Admission to the undergraduate program in social work requires:

- completion of SSW:1022 Social Justice and Social Welfare in the United States with a grade of C or higher during the sophomore year;
- a cumulative g.p.a. of at least 2.50 (exceptions may be made for persons who do not meet the grade-point average requirement if they are strong candidates on the basis of other criteria); and
- completion of application forms and statement.

Students should complete SSW:1022 Social Justice and Social Welfare in the United States in their first year or in fall of their sophomore year and apply to the major during their sophomore year. Students who apply during their junior year and are admitted must expect to complete an additional summer session, or more, in order to fulfill the requirements of the major.

All of the items above are required for transfer students, except that substitution of SSW:1022 Social Justice and Social Welfare in the United States is permitted with a grade of C or above in a course approved by the department, such as introduction to social work or introduction to human services. Students who have completed the equivalent of introduction to social work at another institution also must submit a completed recommendation form and transcripts. Recommendations and letters of reference will otherwise not be accepted.

The School of Social Work criteria for selective admission for a B.A. in social work is detailed in the B.A. Social Work Admissions Policy Statement and Guidelines for Application.

Meeting the admission requirements above does not guarantee admission. Admission often is limited by available instructional resources and opportunities for field
placement. The school does not grant academic credit for life experience or previous work experience.

For more information about admission policies, contact the undergraduate director or admissions director at the School of Social Work.

**SOCIAL WORK INTEREST**

Students who are interested in applying to the social work major may declare a social work interest at any time after they enroll at the University and before they earn more than 72 s.h. of credit, and preferably while they still will have time to enter and complete the major in a total of four years of study. Students may not declare a social work interest after they have earned 72 s.h., even if they already have declared another major.

Declaration of a social work interest qualifies students with at least sophomore standing to be advised by a senior academic advisor assigned to social work interest students. Declaration allows students to participate in the Social Work Student Association and other social work activities, but does not allow them to register for required courses in the major. They may take electives in the social work department prior to formal admission to the major.

Students may continue their social work interest standing until they are admitted to the major or until they have earned more than 72 s.h. of credit.

**SOCIAL WORK COURSES IN DES MOINES**

In addition to its on-campus undergraduate program in Iowa City, the School of Social Work offers social work courses for the Bachelor of Arts through its program in Des Moines. Students in the Des Moines program take courses in sequence, completing the social work courses required for the degree in a minimum of two years. Courses are offered in a classroom setting. Students may complete other requirements for the Bachelor of Arts in online and/or classroom course work. The Des Moines program is approved by the Council on Social Work Education. For more information about the social work program in Des Moines, contact the University of Iowa School of Social Work admissions director.

**Bachelor of Arts**

The Bachelor of Arts with a major in social work requires a minimum of 120 s.h., including at least 60-64 s.h. of work for the major (a minimum of 35-38 s.h. in social work courses, 13-14 s.h. in cognate areas, 6 s.h. in one other department or in social work courses, and 6 s.h. in social work electives). Students must maintain a g.p.a. of at least 2.00 in all courses for the major and in all UI courses for the major. They also must complete the College of Liberal Arts and Sciences General Education Program (p. 313). Courses used to fulfill General Education Program requirements may not be used to satisfy the social work electives requirement.

Students must complete SSW:1022 Social Justice and Social Welfare in the United States (3 s.h.) to be admitted to the major and before enrolling in the remaining social work courses required for the major. Social Justice and Social Welfare in the United States (SSW:1022) also fulfills the General Education Program's Values, Society, and Diversity requirement. A transfer student may be given approval by the department to substitute this requirement if they have completed an introduction to social work or introduction to human services course at another institution, or if they complete SSW:2222 Introduction to Social Work (Guided Independent Study section EXZ), in place of SSW:1022 to be admitted to the major. SSW:2222 would not fulfill the General Education requirement. If transferring the course from another institution, a student may be able to reduce the social work credit required for the major by 3 s.h.

Many students use the major's required course BIOL:1140 Human Biology as partial fulfillment of the General Education Program's Natural Sciences requirement.

The major in social work requires the following course work.

**SOCIAL WORK**

All of these:

- SSW:1022 Social Justice and Social Welfare in the United States 3 s.h.
- SSW:3840 Human Behavior in the Social Environment 4 s.h.
- SSW:3841 Fundamentals of Social Work Practice 3 s.h.
- SSW:3842 Interpersonal Skills Laboratory 2 s.h.
- SSW:3844 Introduction to Social Work Research 4 s.h.
- SSW:3845 Social Work Processes 4 s.h.
- SSW:3847 Discrimination, Oppression, and Diversity 3 s.h.
- SSW:4189 Field Experience Seminar 1 s.h.
- SSW:4193 Field Experience 8-11 s.h.
- SSW:4843 Social Welfare Policy and Practice 3 s.h.

**REQUIRED ELECTIVES**

Students must complete a minimum of 6 s.h. of social work electives and 6 s.h. of courses in one other discipline or they can select additional course work in social work. If they opt to complete 6 s.h. from another discipline, students typically select courses in areas closely related to social work, such as accounting (prefix ACCT), African American studies (prefix AFAM), aging studies (prefix ASP), American studies (prefix AMST), anthropology (prefix ANTH), communication studies (prefix COMM), economics (prefix ECON), English (prefix ENGL), entrepreneurial management (prefix ENTR), finance (prefix FIN), health and human physiology (prefix HHP), history (prefix HIST), journalism and mass communication (prefix JMC), management and organizations (prefix MGMT), management sciences (prefix MSCI), marketing (prefix MKTG), political science (prefix POLI), psychological and brain sciences (prefix PSY), religious studies (prefix RELS), sociology (prefix SOC), Spanish (prefix SPAN), sport studies (prefix SPST), Tippie College of Business nondepartmental courses (prefix BUS), and gender, women's and sexuality studies (prefix GWSS).

Courses used to fulfill General Education Program requirements may not be applied to the elective requirements.

Students who are working on a minor or a certificate may apply up to 6 s.h. toward this requirement.

These:

- Social work electives 6 s.h.
- Electives in another discipline related to social work 6 s.h.
Social work electives  

12 s.h.

**COGNATE AREAS**

Natural and social sciences—all of these:

- **Biol:1140 Human Biology**  
  4 s.h.
- **Pol:1100 Introduction to American Politics**  
  3 s.h.
- **Psy:1001 Elementary Psychology**  
  3 s.h.
- **Soc:1010 Introduction to Sociology**  
  3-4 s.h.

**Recommended Course Sequence**

The school recommends that students complete required course work in the following sequence. Most social work courses are offered only once each year.

**FIRST AND SECOND YEARS**

- **SSW:1022 Social Justice and Social Welfare in the United States**  
  3 s.h.
- **Biol:1140 Human Biology**  
  4 s.h.
- **Pol:1100 Introduction to American Politics**  
  3 s.h.
- **Psy:1001 Elementary Psychology**  
  3 s.h.
- **Soc:1010 Introduction to Sociology**  
  3-4 s.h.

One social work elective or an elective from another area

**THIRD YEAR**

- **SSW:3840 Human Behavior in the Social Environment**  
  4 s.h.
- **SSW:3844 Introduction to Social Work Research**  
  4 s.h.
- **SSW:3845 Social Work Processes**  
  4 s.h.
- **SSW:3847 Discrimination, Oppression, and Diversity**  
  3 s.h.

One social work elective or an elective from another area

**FOURTH YEAR**

- **SSW:3841 Fundamentals of Social Work Practice**  
  3 s.h.
- **SSW:3842 Interpersonal Skills Laboratory**  
  2 s.h.
- **SSW:4189 Field Experience Seminar**  
  1 s.h.
- **SSW:4193 Field Experience**  
  8-11 s.h.
- **SSW:4843 Social Welfare Policy and Practice**  
  3 s.h.

Two social work electives or electives from another area

**Before the seventh semester begins:** five more courses in the major and at least 90 s.h. earned toward the degree

**Before the eighth semester begins:** five more courses in the major and finalization of field placement

**During the eighth semester:** enrollment in all remaining course work in the major, all remaining General Education courses, and a sufficient number of semester hours to graduate

**Honors in the Major**

Students majoring in social work have the opportunity to graduate with honors in the major. Honors students do in-depth study in areas that interest them. They must maintain a cumulative University of Iowa g.p.a. of at least 3.33 to participate in the program. Consult the School of Social Work for more information about graduating with honors in the major.

In addition to honors in their majors, undergraduate students have a variety of opportunities for honors study and activities through membership in the University of Iowa Honors Program; visit Honors at Iowa to learn about the University’s honors program.

**Minor**

A minor in social work requires a minimum of 15 s.h. in social work courses, including 12 s.h. in courses numbered 3000 or above taken at the University of Iowa. Students must maintain a g.p.a. of at least 2.00 in all courses for the minor and in all UI courses for the minor. Course work for the minor may not be taken pass/nonpass. The minor requires that students must take SSW:1022 Social Justice and Social Welfare in the United States or SSW:2222 Introduction to Social Work, or an equivalent course from another institution if approved by the department.

Social work courses required for the major are not available to students who are not admitted to the social work program, with the exception of SSW:3840 Human Behavior in the Social Environment (Guided Independent Study section EXW) and SSW:4843 Social Welfare Policy and Practice (Guided Independent Study section EXZ).

Consult the School of Social Work web site for minor course selection or contact the department for more information.

**Certificate in Aging Studies**

The School of Social Work administers the Aging Studies Program, which offers a certificate for undergraduate and graduate students and a minor for undergraduates; see Aging Studies (p. 34) in the Catalog.

**Certificate in Critical Cultural Competence**

The School of Social Work administers the undergraduate certificate program in critical cultural competence; see Critical Cultural Competence (p. 214) in the Catalog.

**Graduate Programs of Study**

- Master of Social Work
- Doctor of Philosophy in social work
The Master of Social Work program has been accredited by the Council on Social Work Education continuously since 1951.

**LICENSURE FOR WORK IN IOWA**

Licensure is mandatory for master's-level social workers in Iowa. For more information, see Iowa Board of Social Work on the Iowa Department of Public Health web site.

**SCHOOL SOCIAL WORK ENDORSEMENT**

The school cooperates with the College of Education and the State Department of Education to provide curricula that meet requirements for school social work endorsement in Iowa.

**Master of Social Work**

The Master of Social Work requires 60 s.h. of graduate credit; the requirement is 48 s.h. for students who hold an undergraduate degree in social work from a program accredited by the Council on Social Work Education. Beginning summer 2015, students who have earned an undergraduate degree in social work from a program accredited by the Council on Social Work Education and who meet other entrance criteria, can satisfy M.S.W. requirements with a 41 s.h. option. For further details, contact the School of Social Work.

The degree is offered with or without thesis. While students are not required to declare a field of practice, opportunities to specialize are available in fields such as aging, end-of-life care, school social work, child-welfare, trauma informed practice, social work in health and mental health settings, and many others.

The goals of the M.S.W. program are to:

- prepare students to shape the profession's future by providing education in family-based, community-based, and culturally competent practice approaches using the person-in-environment framework; and
- prepare competent professionals for autonomous practice and leadership within the professional community; autonomous practice and leadership include advanced interventions at multiple system levels, supervision, program development, program administration, training, evaluation of practice, dissemination of new models of practice, and policy development.

The school offers the M.S.W. program on the University’s Iowa City campus and at three off-campus sites: Des Moines and Sioux City, Iowa, and the Quad Cities area of Iowa and Illinois (see "M.S.W. Off Campus" below). Each site provides the required structured sequence of courses and includes opportunities for students to individualize their plans of study. All sites give students access to the resources of an RU/VH Research University.

Requirements for the M.S.W. include 27 s.h. in foundation-level courses and 33 s.h. in advanced courses. All students must earn a minimum of 36 s.h. after admission to the M.S.W. program. Credit toward the M.S.W. may be applied from previous graduate course work if specific criteria are met.

All M.S.W. students follow a structured sequence of courses. They must obtain permission to revise their plan, and they must complete the degree within a maximum of four years. Students must maintain a cumulative g.p.a. of at least 3.00 and they must be in compliance with the school's student advancement policy.

The full-time M.S.W. program must be completed in five semesters, beginning in fall and including a summer session. Full-time students complete the degree in the spring semester of their second year. Students whose degree requirement is 48 s.h. may enroll full-time or part-time their first semester, following the sequenced plan.

Full-time study and a four-year part-time program are available in Iowa City and Des Moines. A three-year sequence of courses is available at all sites, although the Sioux City and Quad Cities sites admit new entering classes only on a three-year cycle.

Following is an outline of the full-time 60 s.h. program. For information about the three-year and four-year part-time sequences, contact the School of Social Work.

**FIRST-YEAR: FOUNDATION**

**Fall Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SSW:3840 Human Behavior in the Social Environment</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>SSW:3847 Discrimination, Oppression, and Diversity</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>SSW:6146 Computer Laboratory</td>
<td>1 s.h.</td>
</tr>
<tr>
<td>SSW:6148 Research Practice I</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>SSW:6150 Social Work Practice with Individuals, Families, and Groups</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>SSW:6151 Social Work Practice Skills Laboratory</td>
<td>2 s.h.</td>
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</table>

**Spring Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SSW:4843 Social Welfare Policy and Practice</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>SSW:6145 Organization and Community Practice</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>SSW:6290 Foundation Practicum in Social Work</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>SSW:6291 Foundation Practicum Seminar</td>
<td>1 s.h.</td>
</tr>
<tr>
<td>SSW:7270 Research Practice II</td>
<td>3 s.h.</td>
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</table>

**Summer Session**

| Electives (including preplacement field practice courses) | 9 s.h. |

**SECOND-YEAR: CONCENTRATION**

**Fall Semester**

<table>
<thead>
<tr>
<th>Elective</th>
<th>3 s.h.</th>
</tr>
</thead>
</table>

One of these:

| SSW:7250 Family-Centered Theory and Practice I | 3 s.h. |
| SSW:7260 Integrated Social Work Theory and Practice I | 3 s.h. |

One of these:

| SSW:7292 Advanced Practicum in Family-Centered Practice I and II | 5-6 s.h. |
| SSW:7295 Advanced Practicum in Integrated Practice | 5-6 s.h. |

One of these:

| SSW:7293 Advanced Practicum Seminar in Family-Centered Practice I | 1 s.h. |
Spring Semester
One of these:

SSW:7251 Family-Centered Theory and Practice II 3 s.h.
SSW:7261 Integrated Social Work Theory and Practice II 3 s.h.

One of these:

SSW:7252 Advanced Social Policy for Family Practice 3 s.h.
SSW:7262 Advanced Social Policy for Integrated Practice 3 s.h.

One of these:

SSW:7292 Advanced Practicum in Family-Centered Practice I and II 5-6 s.h.
SSW:7295 Advanced Practicum in Integrated Practice 5-6 s.h.

One of these:

SSW:7294 Advanced Practicum Seminar in Family-Centered Practice II 1 s.h.
SSW:7298 Advanced Practicum Seminar in Integrated Practice II 1 s.h.

Concentrations

In the advanced year of the master's program, students choose one of two concentrations: family-centered practice or integrated practice. These advanced specialized curricula build on the school's liberal arts perspective and on the professional foundation. Both are based on a comprehensive eco-systemic theoretical perspective, and both apply the principles that are part of the school's mission statement, with a focus on culturally competent family-centered and community-based approaches.

FAMILY-CENTERED PRACTICE

The family-centered practice concentration teaches knowledge and skills necessary for advanced social work practice with individuals and families. These include clinical practice methods that mobilize and develop clients' coping skills, empowering them to manage difficult situations, and culturally sensitive methods for collaborating with clients, their families, and other professionals in planning interventions. Students also learn about advocating for clients, facilitating client self-advocacy, coordinating services to meet multiple needs, and influencing social policy on behalf of clients.

The concentration prepares students to work with individuals and families at appropriate levels of intensity, mobilize existing strengths, and enhance coping skills. Using principles of family-centered practice, students learn to take community and larger systems into account while working in partnership with individuals and families in all aspects of assessment and intervention planning. The concentration emphasizes sensitivity to a variety of family forms and to cultural diversity within family forms. "Family" is broadly defined to include step families, single-parent families, same-sex-couple families, grandparent-as-parent families, adult parent-adult child families, and traditional forms of families.

INTEGRATED PRACTICE

The integrated practice concentration teaches methods of advanced practice that empower organizational and community change at multiple system levels. Students learn skills for assessment, planning, and direct intervention in larger systems such as neighborhoods, social support networks, and service delivery systems, and for policy making. They develop skills for a broad range of interventions, including direct practice, case management, community education, community development and practice, management and administration, organizational and interorganizational planning and program development, team building, organization and program evaluation, and social policy advocacy. They also learn culturally sensitive methods to collaborate with families and communities; identify strengths, assets, and challenges; and develop services and programs that will meet clients' needs.

Building on strengths and assets of organizations and communities, students learn how to mobilize community members in advocacy and change efforts—skills useful for case managers, service coordinators, supervisors, program planners and developers, and administrators. Students also learn how to apply advanced skills to advocacy, community assessment, planning and mobilizing resources, and influencing social policy.

The concentration prepares students for practice in varied settings, including hospitals and community health programs, schools, mental health centers, neighborhood and family resource centers, community- and family-based community service agencies, correctional facilities, and programs that serve the elderly, both in the community and in care facilities. In many of these settings, social workers work as interdisciplinary team members and team leaders within organizations. They also collaborate with community organizations, community residents, and service providers. Many social workers are involved in staff supervision, program development, and agency administration. Content areas include grant writing; intervention in multiple systems, including team and network building; policy practice; and design of evaluation methods for client assessment and program evaluation.

Admission

The school seeks to maintain a heterogeneous student body by enrolling students who represent diverse backgrounds and cultural perspectives. Previous experience in human services and cross-cultural experiences is desirable. The school does not grant academic credit for life experience or previous work experience.

Admission to the M.S.W. 60 s.h. program requires a bachelor's degree from an accredited college or university, with a reasonable distribution of courses in the liberal arts and sciences (the humanities and the social, behavioral, and biological sciences). Admission to the M.S.W. 48 s.h. program requires a bachelor's degree in social work from a CSWE-accredited college or university. Applicants must have an undergraduate g.p.a. of 3.00 or higher, or a g.p.a. of 3.00 or higher on 12 s.h. of letter-graded graduate course work; consult the University's Office of Admissions for help in calculating grade-point average. Competence with word processing and spreadsheet application on
personal computers is required. Admission to the 41 s.h. program requires a bachelor's degree in social work from a CSWE-accredited program, earned within the previous five years, with a cumulative g.p.a. of at least 3.20 and a major g.p.a. of at least 3.50.

Applicants whose first language is not English must score at least 100 (Internet-based) on the Test of English as a Foreign Language (TOEFL).

Applicants must submit three letters of recommendation, including one regarding academic abilities and one from the applicant's most recent employer (if the employment was social work-related); and a personal statement addressing criteria specified by the School of Social Work. Applicants to the 41 s.h. program must provide additional materials.

Applications for the 48 s.h. and 60 s.h. programs are accepted beginning September 1 and must be completed by February 1 to be considered for the next academic year. Applications for the 41 s.h. program are due January 4. Applicants must meet the admission requirements of the Graduate College; see the Manual of Rules and Regulations of the Graduate College.

For a complete statement of graduate admission policies, contact the School of Social Work.

Financial Support
Students seeking financial assistance should apply for aid through the University of Iowa Office of Student Financial Aid. Students may apply for a limited number of research and teaching assistantships available from the School of Social Work. Application materials for research or teaching assistantships are available from the school each spring, or as positions become available. Aid received through the Office of Student Financial Aid does not preclude students from consideration for aid through the School of Social Work.

M.S.W. Off Campus
The School of Social Work delivers the M.S.W. curriculum to three off-campus sites: Des Moines and Sioux City, Iowa, and the Quad Cities area of Iowa and Illinois. Each site is administered by the School of Social Work in cooperation with the Division of Continuing Education. Social work faculty members teach required courses at each center and are available for student advising. The off-campus programs have been evaluated by the Council on Social Work Education and the University of Iowa Graduate Council as providing a program comparable to that available on the Iowa City campus.

Courses at each off-campus site are taught in classrooms by tenure-track, clinical, visiting, and adjunct faculty members. Instructional connections between sites are maintained through varied technologies, including computer-based instruction.

For program entry and application dates, contact the School of Social Work.

Des Moines Center
The John and Mary Pappajohn Education Center is located in Des Moines, in central Iowa. It offers courses sequenced to accommodate both part-time and full-time study. Students may complete the entire degree program at the Des Moines center, although they may travel to Iowa City for selected elective courses offered during the summer.

Quad Cities Center
Students in the Quad Cities part-time program can complete their degree entirely off-campus with the exception of some electives, which they can take during summer sessions in Iowa City or at other area colleges and universities. The School offers this part-time program to a cohort admitted once every three years. In addition to the part-time cohort students, there are some full- or part-time students from Iowa City in practicum in the Quad Cities. The Quad Cities program is located in the Davenport/Bettendorf area on Iowa's eastern border.

Sioux City Center
The Sioux City part-time program is nearly identical to the Quad Cities part-time program. Most courses are offered in classroom space at Briar Cliff University in Sioux City.

Joint M.S.W./Ph.D. in Social Work
The school offers a joint Master of Social Work/Doctor of Philosophy in social work for students who have completed course work in research and statistics and have postbaccalaureate experience related to social work practice. The joint program permits students to apply a limited amount of credit toward both graduate degrees, reducing the time required to graduate. Individuals interested in the joint program must apply to the M.S.W. program and the Ph.D. program; applications are reviewed by the admissions panels of both programs. For more information, contact the School of Social Work.

Joint M.S.W./Degrees in Other Disciplines
The School of Social Work collaborates with the College of Law to offer the joint Juris Doctor/Master of Social Work. It also collaborates with the School of Urban and Regional Planning to offer the joint Master of Social Work/Master of Arts or Master of Science in urban and regional planning. Each program permits students to apply up to 12 s.h. of graduate credit toward both degrees, reducing the time required to graduate. Applicants must apply to each program separately and be admitted to each one before they may be admitted to the joint degree program. For information about the law and planning programs, see Juris Doctor (p. 969) (College of Law) and Urban and Regional Planning (p. 963) (Graduate College) in the Catalog.

Similar arrangements may be made with other departments. Academic units in which social work students have pursued joint degrees include the Tippie College of Business, the College of Education, the Department of American Studies, the Department of Religious Studies, and the School of Journalism and Mass Communication. Social work students are encouraged to take courses in other departments whether or not they are pursuing joint degrees.

M.S.W. Professional Association
Graduates of accredited M.S.W. programs may be eligible for associate membership in the American Association for Marriage and Family Therapy (AAMFT) upon fulfilling certain curriculum requirements at the graduate level. Courses are not automatically accepted; graduates need to demonstrate that specific courses meet the AAMFT’s requirements, usually by sending course outlines.
Doctor of Philosophy

The Doctor of Philosophy program in social work requires a minimum of 82 s.h. of graduate credit. The program prepares students to conduct research that contributes to the knowledge base of social work, to become leaders in the profession, and to teach social work in postsecondary educational institutions.

Doctoral students develop close working relationships with faculty members who have achieved national recognition in areas such as child welfare, diversity and cultural competence, gerontology, social policy, and mental health.

The Ph.D. offers students a coherent program of study with opportunities to pursue their own scholarly interests. Each student’s program of study must be approved by his or her advisor.

Students complete required course work and research and teaching practicums; pass a comprehensive exam; and write a dissertation and defend it in an oral exam. Their work includes courses in one of four outside disciplines: sociology, psychology, public health, or education. This course work helps to prepare them for the comprehensive examination and dissertation defense.

Students who enter the program with an M.S.W. are granted credit for 30 s.h. and must complete an additional 52 s.h. for the degree. Individuals with master’s degrees in related disciplines (e.g., psychology, sociology) may choose to earn a Ph.D. in social work without first earning the M.S.W. Credit from a related master's degree may be applied to the Ph.D., as determined case-by-case by the School of Social Work.

The Ph.D. in social work requires the following course work.

FOUNDATION COURSES

Doctoral students without the M.S.W. must take the following four foundation courses during their first year of study. Students may waive one or more of these courses if they can show that they have completed comparable courses and can pass an applicable exam.

- SSW:3840 Human Behavior in the Social Environment 3-4 s.h.
- SSW:3847 Discrimination, Oppression, and Diversity 3 s.h.
- SSW:4843 Social Welfare Policy and Practice 3 s.h.
- SSW:6148 Research Practice I 3 s.h.

CORE COURSES

All Ph.D. students must complete the following core courses.

- SSW:7800 Social Work Proseminar 1 s.h.
- SSW:7801 Knowledge Building in Social Work Practice 3 s.h.
- SSW:7803 Social Work Research Practicum 4 s.h.
- SSW:7804 Thesis Writing Seminar 3 s.h.
- SSW:7806 Teaching Practicum 2 s.h.
- SSW:7807 Teaching Seminar 1 s.h.
- SSW:7815 Seminar: Human Service Organizations 3 s.h.

RESEARCH METHODS, STATISTICS, DATA ANALYSIS

Students earn 9 s.h. in research methods, statistics, and data analysis course work.

OUTSIDE DISCIPLINE REQUIREMENT

Students earn 12 s.h. in one outside discipline (psychology, sociology, public health, or education), as follows.

- One methods course 3 s.h.
- One theory course 3 s.h.
- Two electives 6 s.h.

ADDITIONAL ELECTIVES

Students earn 6 s.h. in elective course work (in addition to electives taken for the outside discipline requirement).

Admission

Students are admitted to the Ph.D. program only for full-time study. Admission requires a master’s degree in social work from a program accredited by the Council on Social Work Education (CSWE) or a master’s degree in a related field. Prospective students also may apply to the M.S.W./Ph.D. program.

The school makes special efforts to recruit students from underrepresented minorities, especially Iowa residents. The program accepts up to five students each year.

Applicants must meet the admission requirements of the Graduate College; see the Manual of Rules and Regulations of the Graduate College.

Applicants must have taken the Graduate Record Exam (GRE) General Test and should have their scores sent to the University of Iowa. A score of at least 575 on both the verbal and quantitative sections, or a composite score of 1150, is preferred for those who took the old GRE. A score of at least 158 on the verbal section and at least 147 on the quantitative section, or a composite score of at least 305, is preferred for those who took the revised GRE. The School of Social Work has not established a minimum analytic writing score.

Applicants also must submit a completed Graduate College application form; undergraduate transcript (an undergraduate g.p.a. of at least 3.00 and an introductory statistics course are required); graduate transcript; a personal statement of professional goals, including area of interest and reason for pursuing the Ph.D. (two to three pages); a résumé; a sample of scholarly writing (scholarly publication or research or theoretical paper); and three letters of recommendation (two must be academic references).

International applicants must have a minimum total score of 100 on the Test of English as a Foreign Language (TOEFL) iBT Test or a minimum overall band score of 7 on the International English Language Testing System (IELTS), with no IELTS subscore less than 6. A score of 26 on the speaking portion of the TOEFL is preferred. Automatic waivers of the TOEFL or IELTS requirement are granted for applicants who have completed a bachelor’s degree or higher at an accredited university in the United States, United Kingdom, Canada (excluding French Quebec), English speaking Africa, Australia, or New Zealand.

Applicants must submit the application form, fee, and other materials to the University’s Office of Admissions.
An application packet and list of guidelines are available from the admissions office and on the School of Social Work web site. The application is due February 1 for the following academic year.

Financial Support
The School of Social Work provides students with a competitive, multi-year financial package that includes full tuition, an assistantship, and a health and dental insurance allowance. The school also provides fellowships, travel awards, and dissertation awards. Students whose first language is not English must take the English Speaking Proficiency Assessment (ESPA) test in order to be considered for teaching assistantships. Assistants who hold appointments of one-quarter-time or more are assessed tuition at the resident rate, for which they receive a scholarship, and their computer fees and health insurance premiums are waived for each semester they hold an appointment during the academic year. For more information on attendance, refer to Cost on the Office of Student Financial Aid web site.

Certificate in Aging Studies
The School of Social Work administers the Aging Studies Program, which offers a certificate for undergraduate and graduate students and a minor for undergraduates; see Aging Studies (p. 34) in the Catalog.

Projects, Seminars
Students may become involved in special projects such as the National Resource Center for Family-Centered Practice and the School of Social Work's programs in gerontology and in end-of-life care.

The school also offers students the opportunity to participate in travel/study seminars. Urban, rural, national, and international seminars are available.

Continuing Education
Nondegree students may enroll in selected courses and workshops offered on campus and online through the Division of Continuing Education and in off-campus programs offered by the School of Social Work. Students who complete continuing education work and later enroll in a degree program may be able to apply a limited amount of their continuing education work toward their degree requirements; applicable credit is determined by the School of Social Work. See Distance and Online Education on the Division of Continuing Education web site.

Courses

Lower-Level Undergraduate

SSW:1000 First-Year Seminar

1-2 s.h.
Small discussion class taught by a faculty member; topics chosen by instructor; may include outside activities (e.g., films, lectures, performances, readings, visits to research facilities). Requirements: first- or second-semester standing.

SSW:1022 Social Justice and Social Welfare in the United States

3 s.h.

Historical development of social welfare and social justice in the United States; individual values and ethics; role and responsibilities of enhancing society; contemporary practice to address social injustices including poverty, discrimination, various forms of violence; small group discussions and debates of various issues to allow for an exchange of diverse views and perspectives; volunteer work. GE: Values, Society, and Diversity. Same as SOC:1022.

SSW:1800 Basic Aspects of Aging

3 s.h.

SSW:2042 Intercultural Communication

3 s.h.
Culture defined as a system of taken-for-granted assumptions about the world that influence how people think and act; cultural differences that produce challenges and opportunities for understanding and communication; those differences from several theoretical perspectives; opportunities to examine culture and cultural differences in practical, experience-driven ways. Prerequisites: (COMM:1112 or COMM:1170) and (COMM:1117 or COMM:1200) and (COMM:1168 or COMM:1174) and COMM:1301 and COMM:1305. Requirements: g.p.a. of at least 2.30 and completion of four of five Foundations of Communication courses. Same as IS:2042, COMM:2042.

SSW:2222 Introduction to Social Work

4 s.h.
Social welfare as a social institution; settings, methodologies of social work, practice; profession of social work; historical development of American social welfare, social work; a minimum of 45 hours volunteer work. Requirements: sophomore or higher standing. Same as SOC:2222.

Upper-Level Undergraduate and Graduate

SSW:3135 Global Aging

3 s.h.
Demographic factors that contribute to the world wide phenomena of population aging in context of WHO Active Aging and the United Nation's Principles for Older Persons frameworks. Same as ASP:3135, GHS:3050.

SSW:3187 Continuing Education: Individual Study

arr.
Project related to student interest carried out under direction of faculty member. Requirements: individual study contract.

SSW:3191 Individual Study

arr.
Project related to student interest carried out under direction of faculty member.

SSW:3500 Nonprofit Organizational Effectiveness I

3 s.h.
SSW:3501 Introduction to Nursing Homes 3 s.h.
Overview of nursing home roles in context of long-term care system, characteristics of nursing home residents. Same as ASP:3501.

SSW:3585 Travel/Study Seminar arr.
Opportunity for cross-cultural learning through U.S. or international travel; focus on social welfare issues. Prerequisites: SSW:4843.

SSW:3600 Nonprofit Organizational Effectiveness II 3 s.h.
Qualities for leadership of nonprofit organizations, including relationships with staff and volunteers; relationship of nonprofit and outside world; marketing, public relations, advocacy strategies for nonprofits. Same as MGMT:3600, NURS:3600, RELS:3701.

SSW:3712 Human Sexuality, Diversity, and Society 1-3 s.h.
Physiological, psychological aspects; parameters defined by students, instructor. Same as NURS:3712.

SSW:3729 Substance Use and Abuse 3 s.h.
Chemical dependency for helping professions; etiological, physiological, psychological, legal, sociological aspects; treatment methods. Requirements: junior or higher standing.

SSW:3753 Programs and Services for Aging Adults 3 s.h.
Major gerontological programs and services, practitioners' need for basic aging-practice competence; aging network; income, employment, health maintenance programs; continuum of care (preventive and well-elderly services, in-home services, community-based services, institutional care); assessment; major elder health issues, informal care; end-of-life care. Same as ASP:3753.

SSW:3785 Social Policy and the Elderly 3 s.h.
Public social policies, their affect on well-being of elderly, including women and minorities; U.S. and other nations' policies. Prerequisites: SSW:4843. Requirements: an introductory course on aging and junior or higher standing. Same as ASP:3785.

SSW:3786 Death/Dying: Issues Across the Life Span 3-4 s.h.
Introduction to death and dying; historical, cultural, societal, personal perspectives. Same as ASP:3786.

SSW:3796 Family Violence 2-3 s.h.
Child abuse and neglect, domestic violence, elder abuse; causes, policy aspects, identification, reporting, treatment, prevention.

SSW:3797 Child Welfare Policy and Practice 3 s.h.
Public and private child welfare practice and organizations in the United States; historical and legal aspects, co-occurring issues, foster care, adoption, family preservation.

Human behavior, practice, social welfare policy.

SSW:3840 Human Behavior in the Social Environment 3-4 s.h.
Behavior and development in context of social, ecological systems and human diversity; overview of biopsychosocial dimensions, individual behavior, and development throughout lifespan; contexts of diverse family, group, community, organization, and cultural systems.

SSW:3841 Fundamentals of Social Work Practice 3 s.h.
Professional practice: functions, roles, skills, conceptual frameworks, values, ethics; focus on integrated approach to practice, including assessment, intervention, evaluation of interventions, termination with individuals, families, groups; emphasis on empirically based practice. Corequisites: SSW:3840, if not taken as a prerequisite. Requirements: admission to social work B.A. program.

SSW:3842 Interpersonal Skills Laboratory 2 s.h.
Practice of interpersonal skills required in the helping relationship. Corequisites: SSW:3841, if not taken as a prerequisite. Requirements: admission to social work B.A. program.

SSW:3844 Introduction to Social Work Research 4 s.h.
Scientific approach to knowledge building, with emphasis on critical use of research; qualitative and quantitative methods, evaluation of practice, computerized data analysis, ethics and diversity in social work research. Requirements: admission to social work B.A. program.

SSW:3845 Social Work Processes 4 s.h.
Context of practice examined to understand structural factors that affect clients and communities; culturally competent practice using empowerment perspective. Corequisites: SSW:3840, if not taken as a prerequisite. Requirements: admission to social work B.A. program.

SSW:3847 Discrimination, Oppression, and Diversity 3 s.h.
Theoretical and historical perspectives on racism, sexism, other forms of discrimination; applications to social work, culturally competent practice, change strategies. Requirements: admission to social work B.A. or M.S.W. program.

SSW:3904 Human Services Administration 2 s.h.
Effects of organizational structures/processes on individual performance; models of management, communication patterns, leadership styles; skill in technical writing, decision making, personnel and financial management, applied professional ethics. Requirements: completion of foundation courses.

SSW:4100 Social Work in the Criminal Justice System 3 s.h.
How social work practice intersects with different aspects of the criminal justice system; focus on integrating social work values into criminal justice field; social work's responsibility to address social justice problems (e.g., mental illness, racial disparity, gender, human rights) within criminal justice system; critical examination of past and present practices in criminal justice and implications for social work practice and policy when working with individuals in criminal justice system.
SSW:4130 Family Development Specialist Model
Use of family development specialist model of family-centered practice to facilitate improved family functioning, economic independence; relationship building, systems theory, family-centered case management, conflict management, empowerment strategies. Requirements: completion of family development specialist certification course.

SSW:4155 Treatment of Substance Use and Co-Occurring Disorders
Treatment of individuals presenting substance related issues (abuse, dependency, cooccurring disorders); etiological, physiological, psychological, legal, and sociological aspects; evaluation of current research and direct application of contemporary treatment modalities to client situations encountered as helping professionals. Recommendations: introductory course in substance abuse.

SSW:4188 Continuing Education: Honors arr.
Supervised individual research. Requirements: honors standing.

SSW:4189 Field Experience Seminar 1 s.h.
Opportunity for students to recount their experiences from generalist practice in agencies; application of knowledge, skills, and values of culturally competent social work. Corequisites: SSW:4193. Requirements: completion of course work in the major.

SSW:4190 Aging Studies Internship 3 s.h.
Opportunities for students in various disciplines to relate their areas of study to older adults and aging; interdisciplinary relationships, approaches to meeting needs of older adults. Same as ASP:4190.

SSW:4192 Honors in Social Work arr.
Supervised individual research. Requirements: honors standing.

SSW:4193 Field Experience arr.
Supervised experience in selected social welfare organizations; application of knowledge and skill common to generalist practice in an agency setting. Corequisites: SSW:4189. Requirements: completion of course work in the major and social work senior standing.

SSW:4216 Group Facilitation in Human Sexuality 0-3 s.h.
Principles of group dynamics, group process; leadership skills for small, task-oriented discussion groups on human sexuality. Prerequisites: SSW:3712. Same as NURS:4216.

SSW:4843 Social Welfare Policy and Practice 3 s.h.
Basic social welfare policies and programs; economic, social, ideological, and political conditions that have influenced formation and implementation of social policy, current structure of major social welfare policies.

SSW:5194 Social Work Practice in Health Care Settings 2 s.h.
Introduction to organization, provision of social work services in health care settings; practice issues such as models of intervention, ethical questions, impact of cultural diversity on health care. Prerequisites: SSW:3841 or SSW:6130.

SSW:5200 Grief Work with Individuals and Families 2-3 s.h.
Complexity of grief and its multifaceted impact on family systems; utilizing grief theories, including Worden's Tasks of Mourning, ambiguous loss theory, several family systems models; examination of multi-generational dynamics that affect how we learn to grieve, how we experience grief, and how we live after a loss; acknowledged and unacknowledged grief and loss; generational family dynamics; difficulties and strengths passed from one generation to the next; assessing grief at individual, family, group, and community levels; how loss can affect personal well-being and professional practice, particularly when working with an interdisciplinary team. Requirements: social work graduate standing.

SSW:5219 Aging and the Family 2-3 s.h.
Research related to aging and the family; intergenerational relations, marital status in later life, diversity of older families, caregiving, elder abuse, policy issues. Same as ASP:5219.

SSW:5240 Trauma Informed Family Practice 3 s.h.
Theory, knowledge, and skills informing evidence-based assessment and intervention for traumatized children and adolescents in child welfare system, including those exposed to abuse, neglect, witnessing interpersonal crime (e.g., domestic violence, community violence); family events within their ecological context, various family forms, cultural patterns; controversial issues in child welfare, conclusions based on scholarly research, presentation of conclusions in professional oral and written form.

SSW:5254 Introductory Seminar: End-Of-Life Services in Rural Communities 2-3 s.h.
Basic principles of hospice and palliative care, rural service delivery, community assessment.

SSW:6145 Organization and Community Practice 3 s.h.
Models that underlie theories of organization, community practice; principles of macro social work and skill development in relationship building, needs assessment, decision making, planning, implementing, ethics, program and self-evaluation. Requirements: admission to M.S.W. program.

SSW:6146 Computer Laboratory 1 s.h.
Use of microcomputers in social work practice; user skill, software for a variety of applications in social service settings. Requirements: admission to M.S.W. program.
SSW:6148 Research Practice I 3 s.h.
Knowledge and skills for evaluating practice and carrying
out social work research; formulation of research
questions; research design and methodology; sampling
techniques; protection of human subjects; descriptive
statistics; computerized data analysis. Requirements:
admission to M.S.W. program.

SSW:6150 Social Work Practice with
Individuals, and Groups 3 s.h.
Models and underlying theories of empirically based
direct social work practice; emphasis on an ecosystem
strengths perspective; phases of helping relationship,
strengths-based assessment, change process in
interpersonal helping relationships. Prerequisites:
SSW:3840. Requirements: admission to M.S.W. program;
for students who have completed 60 s.h., concurrent

SSW:6151 Social Work Practice Skills
Laboratory 2 s.h.
Interpersonal skills practice in the helping relationship;
small-group format. Corequisites: SSW:6150 and
SSW:6290 and SSW:6291, if not taken as prerequisites.
Requirements: admission to M.S.W. program.

SSW:6220 Family Law 3 s.h.
Legal systems, rights, processes related to families;
marriage, divorce, custody, protective services,
reproductive rights, adoption, commitment, delinquency,
education, poverty, discrimination; roles of lawyers, social
workers in legal system. Prerequisites: SSW:4843.

SSW:6224 Spirituality and Ethics in Social
Work 2-3 s.h.
Knowledge, values, and skills that provide a framework
for spirituality sensitive social work practice; preparation
for responding competently and ethically to diverse
spiritual perspectives, for recognizing and reflecting on
one's own spiritual beliefs, and for identifying appropriate
ways to apply personal beliefs to practice with varied
populations while safeguarding client autonomy and
self-determination.

SSW:6228 Theories of Personality and
Psychopathology 2 s.h.
Theories and their relevance to social work practice
with diverse populations. Prerequisites: SSW:3840.
Requirements: social work graduate standing.

SSW:6229 Working with Groups 2 s.h.
Theory and practice of group work, group process,
leadership styles and skills; fundamental theory,
skills necessary to form and facilitate a small group.
Requirements: completion of foundation courses.

SSW:6232 Therapy with Couples 2 s.h.
Married and other couples as social systems; theories
of functional, dysfunctional systems; techniques of
intervention. Requirements: completion of foundation
courses.

SSW:6233 School Social Work Practice 2 s.h.
School as a social institution; activities of school social
worker; theoretical, practice issues; current issues in field.

SSW:6234 Social Work Practice and Use of
the Diagnostic and Statistical Manual of
Mental Disorders 3 s.h.
Major categories of psychopathology, DSM-IV system of
classification; individual behavior and presentation of
symptoms considered through DSM-IV multiaxial approach
to diagnosis; effects of culture, developmental stage, and
gender on presentation of mental disorders.

SSW:6236 Interventions with Individuals 2 s.h.
Comparison of two or more intervention theories and
approaches used in social work practice with individuals;
attention to diverse populations and across life span.
Requirements: completion of foundation courses.

SSW:6237 Social Work Practice with
Children, Youth, and Families 2 s.h.
Preparation for practice in child welfare, family service
agencies; family life cycle, child development, child
maltreatment, problems of adolescence, social services
for families and children, legal issues. Requirements:
completion of foundation courses.

SSW:6238 Introduction to Play Therapy 2 s.h.
Major theories and techniques of play therapy, relevance
to social work practice. Prerequisites: SSW:6150.

SSW:6247 Nonprofit Organizational
Effectiveness I 3 s.h.
Operational and financing aspects of nonprofit
management; mission and governance of organization;
strategic planning for effective management, including
finance, budget, income generation, fund-raising. Same as
SLIS:6430, MGMT:9150, LAW:8751, HMP:6360, URP:6278,
SPST:6010, RELS:6070.

SSW:6248 Nonprofit Organizational
Effectiveness II 3 s.h.
Qualities for leadership of nonprofit organizations,
including relationships with staff and volunteers;
relationship of nonprofit and outside world; marketing,
public relations, advocacy strategies for nonprofits.
Requirements: for LAW:8752 — LAW:8751; for HMP:6365
— HMP:6360 or MGMT:9150. Same as MGMT:9160,
LAW:8752, SLIS:6435, HMP:6365, URP:6279, SPST:6020,
RELS:6075.

SSW:6281 Social Work Practice: Selected
Aspects
Topics not covered in another course; diversity, social
justice and ethics issues related to a social work practice
area.

SSW:6282 Grant Writing 1-2 s.h.
Same as URP:6282.

SSW:6290 Foundation Practicum in Social
Work 3 s.h.
Generalist practice experience with individuals, families, small groups, organizations, communities; communication skills, change process, professional values and ethics applied at multiple system levels; students evaluate their own practice using a learning contract in an agency setting. Corequisites: SSW:3840, SSW:3847, SSW:4843, SSW:6145, SSW:6146, SSW:6150, SSW:6151, and SSW:6291; if not taken as prerequisites. Requirements: admission to M.S.W. program.

SSW:6291 Foundation Practicum Seminar 1 s.h.

SSW:7250 Family-Centered Theory and Practice I 3 s.h.
Theoretical bases for family-centered practice; comparison and analysis; skill development in analyzing problem situations, implementing change strategies. Requirements: completion of M.S.W. foundation courses.

SSW:7251 Family-Centered Theory and Practice II 3 s.h.
Techniques for assessment, intervention in family-centered practice; evaluation of practice; theoretical and clinical bases for intervention. Prerequisites: SSW:7250.

SSW:7252 Advanced Social Policy for Family Practice 3 s.h.
Systematic basis for examining social, economic, and political factors that influence formation of social policies; social policy implementation, impact of social policies on vulnerable individuals and families. Requirements: completion of M.S.W. foundation courses.

SSW:7255 Integrative Seminar in End-of-Life Care 1 s.h.
Integration of students' knowledge, skills, and values for practice in end-of-life care and bereavement; application to case studies and advanced practicum setting. Corequisites: SSW:7292 or SSW:7295. Requirements: admission to end-of-life care area.

SSW:7260 Integrated Social Work Theory and Practice I 3 s.h.
Theories, skill development, evaluation, ethical issues in integrated social work practice; intermediate group work for culturally competent intervention; small task groups. Requirements: completion of foundation courses.

SSW:7261 Integrated Social Work Theory and Practice II 3 s.h.
Continuation of SSW:7260; theories, skills evaluation, ethical issues; advanced group work for culturally competent intervention; case management, program development, funding evaluation, large task groups. Prerequisites: SSW:7260.

SSW:7262 Advanced Social Policy for Integrated Practice 3 s.h.
Systematic basis for critical examination of social, economic, and political factors that influence formation of social policies; social policy implementation, impact of social policies on vulnerable populations, service providers, communities. Requirements: completion of M.S.W. foundation courses.

SSW:7268 Continuing Education: Individual Study arr.
Project related to student interest; directed by faculty member. Requirements: completion of course contract.

Thesis research project.

SSW:7270 Research Practice II 2-3 s.h.
Research project relevant to social work practice that builds on knowledge and skills developed in SSW:6148; data analysis, report of results; ethical principles applied to research. Prerequisites: SSW:6148. Requirements: admission to M.S.W. program.

SSW:7271 Individual Study arr.
Project related to student interest; directed by faculty member.

SSW:7272 Thesis arr.

SSW:7292 Advanced Practicum in Family-Centered Practice I and II arr.
Family-centered practice theory and skills implemented in interventions with individuals, families; two semester field course. Corequisites: SSW:7250, SSW:7251, SSW:7252, and SSW:7270; if not taken as prerequisites. Requirements: completion of M.S.W. foundation courses, and concurrent enrollment in SSW:7293 or SSW:7294.

SSW:7293 Advanced Practicum Seminar in Family-Centered Practice I 1 s.h.
Two-semester field course; family-centered practice theory and skills implemented in interventions with individuals, families. Corequisites: SSW:7292. Requirements: completion of M.S.W. foundation courses.

SSW:7294 Advanced Practicum Seminar in Family-Centered Practice II 1 s.h.

SSW:7295 Advanced Practicum in Integrated Practice arr.
Integrated social work theories and interventions implemented in work with individuals, families, organizations, formal and informal networks; two semester field course. Corequisites: SSW:7260, SSW:7261, SSW:7262, and SSW:7270; if not taken as prerequisites. Requirements: completion of M.S.W. foundation courses; for fall semester — concurrent enrollment in SSW:7297 or SSW:7298.

Field course; social work theories and interventions implemented in schools. Corequisites: SSW:7250 or SSW:7260, SSW:7251 or SSW:7261, and SSW:7252 or SSW:7262; if not taken as prerequisites. Requirements: completion of M.S.W. foundation courses.

SSW:7297 Advanced Practicum Seminar in Integrated Practice I
1 s.h.
Two-semester course; social work knowledge, skills, values, and professional identity integrated in context of advanced practice and direct multisystemic interventions. Corequisites: SSW:7295 or SSW:7296.

SSW:7298 Advanced Practicum Seminar in Integrated Practice II
1 s.h.

SSW:7800 Social Work Proseminar
1 s.h.
Orientation for new Ph.D. students to program and degree requirements; how to formulate research questions; introduction to faculty research and interests. Requirements: admission to social work doctoral program.

SSW:7801 Knowledge Building in Social Work Practice
3 s.h.
Epistemology of social work practice theories, importance for knowledge building; practice theories of personal and interpersonal change, family life cycle development, empowerment.

SSW:7802 Social Policy and Poverty in the U.S.
3 s.h.
Causes of poverty in the U.S., public policies for low-income families; arguments and evidence offered for and against a particular explanation for poverty in the U.S. or approach to anti-poverty policy; how authors construct their arguments, underlying theory, evidence the authors bring to bear, ways they explore consequences of policy proposals; role of social science theory in advancing knowledge in social policy and research interests. Requirements: admission to social work Ph.D. program.

SSW:7803 Social Work Research Practicum
1-4 s.h.
Student work with faculty on various phases of research process including research design, measurement, sampling, data collection, data analysis, human subjects review, and writing for publication. Requirements: admission to social work doctoral program.

SSW:7804 Thesis Writing Seminar
2-3 s.h.
Writing a thesis and an argument; synthesizing literature and justifying methods; development of scientific communication skills; defending ideas at proposal hearing and thesis defense.

SSW:7806 Teaching Practicum
2 s.h.
Development of knowledge, skills, and values needed to become effective, culturally competent social work educators through an applied teaching experience; faculty mentors provide ongoing instruction on how to teach and assess student learning. Recommendations: admission to social work doctoral program, and concurrent enrollment in or completion of teaching seminar.

SSW:7807 Teaching Seminar
1 s.h.
Development of knowledge and skills needed to become effective, culturally competent educators; topics may include theories of adult learning, course design, creating a learning culture that is inclusive, instructional strategies, accreditation processes, and writing a teaching philosophy.

SSW:7815 Seminar: Human Service Organizations
3 s.h.
Theories of organizations and applying theory to research within and about human services organizations; range of theories and their application to problems of conducting organizational research from Weber's "bureaucracy" to contemporary "learning organization" popularized by Senge; organizational culture and climate, interorganizational networks, supervision and turnover, gender and diversity in relation to organizational research; students lead sessions and facilitate discussion of critical concepts and readings.

SSW:7816 Psychological Trauma, Trauma-Informed Practice, and Trauma Research
3 s.h.
Theory related to psychological trauma, trauma-informed practice, and trauma research; origins of psychological trauma; history and development of trauma theories; trauma-related mental health disorders; trauma-sensitive/trauma-informed practice; challenges associated with applying and testing theory in direct practice and research.

SSW:7830 Ph.D. Dissertation
arr.
Sociology

Chair

- Karen V. Heimer

Undergraduate major: sociology (B.A., B.S.)
Undergraduate minor: sociology
Graduate degrees: M.A. in sociology; Ph.D. in sociology
Faculty: http://clas.uiowa.edu/sociology/people
Web site: http://clas.uiowa.edu/sociology/

The Department of Sociology offers an undergraduate major and minor as well as graduate degree programs. The department partners with the Departments of Economics, Philosophy, and Political Science to offer the undergraduate major in ethics and public policy, an interdisciplinary program administered by the Department of Philosophy; see Ethics and Public Policy (p. 286) in the Catalog. It also collaborates with the Departments of Geographical and Sustainability Sciences (p. 323), Political Science (p. 520), and Statistics and Actuarial Science (p. 613) to offer the Certificate in Social Science Analytics (p. 571). In addition, it offers courses that undergraduate students in all majors may use to fulfill General Education Program (p. 313) requirements and a First-Year Seminar designed for entering undergraduate students.

Undergraduate Programs of Study

- Major in sociology (Bachelor of Arts, Bachelor of Science)
- Minor in sociology

A bachelor's degree with a major in sociology provides a liberal arts and sciences education. Sociology provides a broad foundation for a number of careers that require a deep understanding of human interactions and behaviors. Though broad in scope, sociology can be broken down into many marketable specializations including these at the University of Iowa: criminology; family, health, and well-being; organizations, networks, and careers; social psychology; and social and political organization.

The major provides background for employment in fields such as human services, criminal justice, corrections, sales, public relations, advertising, personnel, applied social research, community organization, and teaching social science in secondary schools. It also provides a foundation for graduate or professional study in social work, urban planning, law, criminal justice, social policy, and similar areas. Finally, the major prepares students to work toward advanced degrees in sociology, which qualify them for college or university teaching and work in academic, private, and governmental research.

The department has an active undergraduate organization, The Sociology Club, which is open to all interested students. The student-run group sponsors speakers, films, and career days; conducts study groups; and facilitates group volunteerism.

Bachelor of Arts, Bachelor of Science

The Bachelor of Arts with a major in sociology requires a minimum of 120 s.h., including at least 33 s.h. of work for the major. The Bachelor of Science with a major in sociology requires a minimum of 120 s.h., including at least 45 s.h. of work for the major, with a minimum of 30 s.h. in sociology course work. Students must maintain a g.p.a. of at least 2.00 in all courses for the major and in all UI courses for the major. They also must complete the College of Liberal Arts and Sciences General Education Program (p. 313). Transfer students must earn at least 12 s.h. in sociology course work at the University of Iowa; transfer courses must be approved by a sociology advisor.

The major offers three optional tracks for both B.A. and B.S. students with an interest in one of the following concentrations: criminology; family, health, and well-being; or organizations, networks, and careers.

Requirements for the major are similar for the Bachelor of Arts and the Bachelor of Science, except B.A. students take 3 s.h. of statistics and two theory and methods courses, while B.S. students take 8 s.h. of introductory calculus and four theory and methods courses. Remaining requirements (electives, the capstone course, and the graduation portfolio) are identical for B.A. and B.S. students.

Choice of a degree program should be dictated by a student’s personal career goals. Though not required, students interested in pursuing a graduate program may find the additional math and methods courses helpful.

In planning to complete the major, students must take courses in the proper sequence. Introduction to Sociology [SOC:1010] is a prerequisite for all required core theory and methods courses. Statistics is prerequisite for the more advanced methods course. B.S. students are required to take calculus. These introductory courses lay the foundation for all other work in the major. The recommended sequence for the major’s core requirements is SOC:1010 Introduction to Sociology, SOC:2130 Sociological Theory, the statistics requirement, and SOC:2170 Research Methods. See "Four-Year Graduation Plan" later in this section.

The major in sociology requires the following work.

INTRODUCTORY SOCIOLOGY (B.A. AND B.S.)

All B.A. and B.S. students take this:

SOC:1010 Introduction to Sociology 3-4 s.h.

INTRODUCTORY STATISTICS (B.A.)

B.A. students complete one of these:

SOC:2160 Applied Statistics for Social Scientists 3 s.h.
ECON:2800 Statistics for Strategy Problems 3 s.h.
STAT:1020/PSQF:1020 Elementary Statistics and Inference 3 s.h.
STAT:1030 Statistics for Business 4 s.h.
STAT:2010 Statistical Methods and Computing 3 s.h.
STAT:3510 Biostatistics 3 s.h.
STAT:4143/PSQF:4143 Introduction to Statistical Methods 3 s.h.

INTRODUCTORY CALCULUS (B.S.)

B.S. students complete one of these sequences:
MATH:1550 & MATH:1560 Engineering Mathematics I: Single Variable Calculus 8 s.h.
Engineering Mathematics II: Multivariable Calculus
MATH:1850 & MATH:1860 Calculus I-II 8 s.h.

**THEORY AND METHODS (B.A.)**
The following two theory and methods courses are required for the B.A. and should be completed as soon as possible.

SOC:2130 Sociological Theory 3 s.h.
SOC:2170 Research Methods 3 s.h.

**THEORY AND METHODS (B.S.)**
The following four theory and methods courses are required for the B.S. and should be completed as soon as possible.

All of these:
SOC:2130 Sociological Theory 3 s.h.
SOC:2170 Research Methods 3 s.h.
STAT:3120 Probability and Statistics 4 s.h.

One of these:
PHIL:2603 Introduction to Symbolic Logic 3 s.h.
PHIL:3604 Introduction to Philosophy of Science 3 s.h.

**ELECTIVES (B.A. AND B.S.)**
B.A. and B.S. students complete 18 s.h. of elective course work in sociology (prefix SOC). Four of the required electives can be taken during any session with at least one course numbered 3000-4899. Two of the required electives must be taken after (and not concurrent with) the completion of SOC:2130 Sociological Theory, an approved course from the "Introductory Statistics (B.A.)" list above, and SOC:2170 Research Methods. These two electives must be chosen from sociology courses numbered 3000-4899, SOC:4920 Social Services Organization Internship, or SOC:4998 Honors Research. With permission, students may use graduate courses in sociology (numbered 5000 or above) to satisfy the electives requirement. The following courses do not count toward the major and may not be used as electives.

SOC:1000 First-Year Seminar 3 s.h.
SOC:4930 Teaching Internship 3 s.h.
SOC:4990 Directed Individual Study 3 s.h.

**CAPSTONE COURSE (B.A. AND B.S.)**
All students complete the capstone course, which illustrates their accomplishments and includes assembling a portfolio. Students may take it as early as spring of their junior year, as long as they have completed SOC:2130 Sociological Theory, SOC:2170 Research Methods, and the statistics requirement. Students must maintain a g.p.a. of at least 2.00 in work for the major.

SOC:4910 Capstone Course in Sociology 3 s.h.

**GRADUATION PORTFOLIO (B.A. AND B.S.)**
During their last semester, all students enroll in the following course, in which they submit the portfolio they assembled in the capstone course.

SOC:4909 Graduation Portfolio 0 s.h.

**Criminology Track**
The criminology track requires a minimum of 18 s.h. of credit, including 15 s.h. of course work taken at the University of Iowa. It is open to sociology majors who are interested in understanding the nature of crime and who want to pursue careers in criminological research, policing, probation, parole, or the law. The track teaches students about various data sources used to study the causes of crime, the dominant sociological explanations for crime and crime control, and how law as an institution affects and is affected by other institutions. It includes courses on topics such as the criminal legal system, gender and violence, and global criminology.

Criminology track students must satisfy all requirements for the sociology major. They may count courses taken for the track as sociology electives for the major. Although SOC:4400 Internship in Criminal Justice and Corrections is not required for the track, students are encouraged to complete it; they may count a maximum of one registration in SOC:4400 toward track requirements.

The criminology track requires the following course work.

**Required—one of these:**
SOC:1410 Introduction to Criminology 3 s.h.
SOC:1420 Law and Society 3 s.h.
SOC:1447 Introduction to the Criminal Justice System 3 s.h.

**Electives—15 s.h. from these:**
SOC:2325 Women, Crime, and Justice 3 s.h.
SOC:2426 Deviance and Control 3 s.h.
SOC:2430 Comparative Criminal Justice Systems 3 s.h.
SOC:3171 Drugs and Society 3 s.h.
SOC:3415 Global Criminology 3 s.h.
SOC:3416 Race, Crime, and Justice 3 s.h.
SOC:3417 Community Corrections 3 s.h.
SOC:3420 Juvenile Delinquency 3 s.h.
SOC:3437 American Crime 3 s.h.
SOC:3450 Criminal Legal System 3 s.h.
SOC:4400 Internship in Criminal Justice and Corrections 1-5 s.h.
SOC:4420 Criminal Punishment 3 s.h.
SOC:4430 Interpersonal Violence in Society 3 s.h.
SOC:4440 Sociology of White-Collar Crime 3 s.h.
SOC:4450 Juvenile Justice: A Sociolegal Perspective 3 s.h.
SOC:4460 Sociology of Law 3 s.h.
SOC:4461 Gender and Violence 3 s.h.
SOC:4901 Selected Topics in Criminology, Law and Justice 3 s.h.

**Family, Health, and Well-Being Track**
The family, health, and well-being track requires a minimum of 15 s.h. of credit, including 12 s.h. of course work taken at the University of Iowa. It is open to sociology majors who are interested in understanding family structures and practices, differences between and within families, and those social institutions and forces that shape families or are shaped by them. Additionally, the
track cultivates students' understanding of the social context of health, illness, and health care. It is especially well suited for students who are interested in pursuing careers in the fields of social service and health.

Students must satisfy all requirements for the sociology major. They may count courses taken for the track as sociology electives for the major.

The family, health, and well-being track requires the following course work.

Required—6 s.h. from these:
SOC:1310 Gender and Society 3 s.h.
SOC:3510 Medical Sociology 3 s.h.
SOC:3710 The American Family 3 s.h.

Electives—9 s.h. from these:
SOC:1810 Poverty, Inequality, and Public Policy 3 s.h.
SOC:2064 Racial Inequality and the Experiences of African American Families in the U.S. 3 s.h.
SOC:2810 Social Inequality 3 s.h.
SOC:3220 Sociology of Mental Illness 3 s.h.
SOC:4230 Sociology of Self-Improvement 3 s.h.
SOC:4430 Interpersonal Violence in Society 3 s.h.
SOC:4461 Gender and Violence 3 s.h.
SOC:4902 Selected Topics in Family, Health, and Well-Being 3 s.h.

Or select electives from these graduate courses, with approval from instructor:
SOC:6220 Seminar: Selected Topics in Social Psychology (when topic is life course) 3 s.h.
SOC:6310 Gender Stratification Seminar 3 s.h.

Students also may choose the remaining required course as an elective.

Organizations, Networks, and Careers Track

The organizations, networks, and careers track requires a minimum of 15 s.h. of credit, including 12 s.h. of course work taken at the University of Iowa. It is open to sociology majors who are interested in understanding the macro- and micro-level processes that affect the ability to understand and manage organizations, as well as the groups and individuals that compose them. The track provides intensive training in both theoretical and empirical approaches to organizations, and combines micro-level insights into work groups with macro-level perspectives on the influence of organizations' environments. It is especially well suited for students who are interested in pursuing careers in various service-providing sectors such as business services, educational services, social assistance, or government.

Students must satisfy all requirements for the sociology major. They may count courses taken for the track as sociology electives for the major.

The organizations, networks, and careers track requires the following course work.

Required—6 s.h. from these:
SOC:3610 Organizations and Modern Society 3 s.h.
SOC:3880 Introduction to Network Science 3 s.h.
SOC:4225 The Social Psychology of Leadership 3 s.h.

Electives—9 s.h. from these:
SOC:1810 Poverty, Inequality, and Public Policy 3 s.h.
SOC:2810 Social Inequality 3 s.h.
SOC:3200 International Perspectives: Xicotepec 1-3 s.h.
SOC:3650 Education, Schools, and Society 3 s.h.
SOC:3850 Economy and Society 3 s.h.
SOC:4210 Small Group Analysis 3 s.h.
SOC:4230 Sociology of Self-Improvement 3 s.h.
SOC:4440 Sociology of White-Collar Crime 3 s.h.
SOC:4903 Selected Topics in Organizations, Networks, and Careers 3 s.h.

Or select electives from these graduate courses, with approval from instructor:
SOC:6610 Complex Organizations 3 s.h.
SOC:7620 Social Network Analysis 3 s.h.
SOC:7820 Seminar: Selected Topics in Social Stratification (when topic is social capital) 3 s.h.
SOC:7860 Seminar: Economy and Society 3 s.h.

Emphasis Areas

The following elective courses are grouped by emphasis for students who may want to cluster their electives according to one of the following areas of interest. The emphasis area courses are not tracks. See "Courses" later in this Catalog for a complete listing of sociology courses.

Social Psychology

SOC:2220 Principles of Social Psychology 3-4 s.h.
SOC:3220 Sociology of Mental Illness 3 s.h.
SOC:3225 Paranormal Society 3 s.h.
SOC:4210 Small Group Analysis 3 s.h.
SOC:4225 The Social Psychology of Leadership 3 s.h.
SOC:4230 Sociology of Self-Improvement 3 s.h.

Social and Political Organization

SOC:1810 Poverty, Inequality, and Public Policy 3 s.h.
SOC:2810 Social Inequality 3 s.h.
SOC:3520 Political Sociology 3 s.h.
SOC:3610 Organizations and Modern Society 3 s.h.
SOC:3650 Education, Schools, and Society 3 s.h.
SOC:3830 Race and Ethnicity 3 s.h.
SOC:3840 Community and Urban Sociology 3 s.h.
SOC:3850 Economy and Society 3 s.h.
SOC:3880 Introduction to Network Science 3 s.h.
SOC:4820 Sociology of Sexuality 3 s.h.

B.A. or B.S. with Teacher Licensure

Sociology majors interested in earning licensure to teach in elementary and/or secondary schools must complete the College of Education's Teacher Education Program (TEP) in addition to the requirements for the major and
all requirements for graduation. The TEP requires several College of Education courses and student teaching. Contact the Office of Education Services for details.

Students must satisfy all degree requirements and complete Teacher Education Program licensure before degree conferral.

Four-Year Graduation Plan

The following checkpoints list the minimum requirements students must complete by certain semesters in order to stay on the University's Four-Year Graduation Plan. (Courses in the major are those required to complete the major; they may be offered by departments other than the major department.)

Note: Sequencing of course work is important in meeting the four-year plan.

Bachelor of Arts

Before the fifth semester begins: SOC:1010 Introduction to Sociology or equivalent, and one sociology elective

Before the seventh semester begins: SOC:2130 Sociological Theory, a required statistics course, one more sociology elective, and at least 90 s.h. earned toward the degree

Before the eighth semester begins: SOC:2170 Research Methods and one more sociology elective

During the eighth semester: enrollment in all remaining course work in the major, including SOC:4910 Capstone Course in Sociology, SOC:4909 Graduation Portfolio, and the last two sociology electives; all remaining General Education courses; and a sufficient number of semester hours to graduate

Bachelor of Science

Before the fifth semester begins: SOC:1010 Introduction to Sociology or equivalent, SOC:2130 Sociological Theory, and one sociology elective

Before the seventh semester begins: a required statistics course, SOC:2170 Research Methods, calculus I-II, one more sociology elective, and at least 90 s.h. earned toward the degree

Before the eighth semester begins: STAT:3120 Probability and Statistics and one more sociology elective

During the eighth semester: enrollment in all remaining course work in the major, including SOC:4910 Capstone Course in Sociology, SOC:4909 Graduation Portfolio, and the last two sociology electives; all remaining General Education courses; and a sufficient number of semester hours to graduate

Honors in the Major

Students majoring in sociology have the opportunity to graduate with honors in the major. Departmental honors students must maintain a g.p.a. of at least 3.33 in all University of Iowa courses and in all sociology courses. In order to graduate with honors in sociology, the following course work must be completed.

SOC:4997 Honors Seminar 1 s.h.
SOC:4998 Honors Research (honors thesis) arr.

The honors thesis is prepared under faculty supervision. It gives students the opportunity to conduct sociological research in close consultation with a faculty member of the student's choice.

Honors students also must take at least one sociology course numbered 3000 or above with honors designation, including graduate courses (honors designation requires instructor approval).

Learn more about honors in the major at Departmental Honors and Honors Courses on the University of Iowa Honors Program web site.

In addition to honors in their majors, undergraduate students have a variety of opportunities for honors study and activities through membership in the University of Iowa Honors Program; visit Honors at Iowa to learn about the University's honors program.

Minor

The minor in sociology requires a minimum of 15 s.h. in sociology courses, including at least 12 s.h. in courses taken at the University of Iowa. The minor must include SOC:2130 Sociological Theory and a minimum of 9 s.h. in courses numbered 3000 or above. Students must maintain a cumulative g.p.a. of at least 2.00 in all courses for the minor and in all UI courses for the minor. Course work in the minor may not be taken pass/nonpass.

A minor in sociology is a good complement to a number of majors, particularly other social sciences, business, elementary education, or health professions.

Certificate in Social Science Analytics

The Department of Sociology collaborates with the Departments of Geographical and Sustainability Sciences (p. 323), Political Science (p. 520), and Statistics and Actuarial Science (p. 613) to offer the undergraduate program in social science analytics; see Social Science Analytics (p. 571) in the Catalog.

National Honor Society

The department sponsors a chapter of Alpha Kappa Delta International Sociology Honor Society. Students who have attained junior or higher standing are considered for membership. Consult the Alpha Kappa Delta faculty advisor for details.

Graduate Programs of Study

- Master of Arts in sociology
- Doctor of Philosophy in sociology

Graduate study in sociology focuses on the Doctor of Philosophy. Students are awarded the M.A. as they fulfill requirements for the Ph.D.

The Doctor of Philosophy emphasizes research and aims primarily to prepare sociologists for academic positions in colleges and universities or for research positions in academic, private, and government institutions. Opportunities for research using survey, experimental, and observational methods are readily available in the department.
Master of Arts
The Master of Arts program in sociology requires 30 s.h. of graduate credit with thesis or research paper and 38 s.h. of graduate credit without. The program without thesis is intended for students seeking a terminal degree and for whom a wider range of course content in sociology is appropriate.

All M.A. students must complete the following courses with grades of B-minus or higher.

- SOC:5110 History of Sociological Theory 3 s.h.
- SOC:5160 Research Design and Methods 3 s.h.
- SOC:6170 Introduction to Sociological Data Analysis 3 s.h.
- SOC:6180 Linear Models in Sociological Research 3 s.h.

Doctor of Philosophy
The Doctor of Philosophy program in sociology requires a minimum of 72 s.h. of graduate credit. Most courses for the Ph.D. are taken in the student's two areas of interest, but all doctoral students must complete the following courses.

- SOC:6170 Introduction to Sociological Data Analysis (required for the M.A.) 3 s.h.
- SOC:6180 Linear Models in Sociological Research (required for the M.A.) 3 s.h.
- Two elective courses in methods/statistics numbered 5000 or above 3 s.h.
- One advanced theory course such as SOC:6110 3 s.h.

Students also must pass two area examinations, write and defend a dissertation prospectus, and write and successfully defend a dissertation.

Doctoral students take two area exams—one from list A, the other from list A or B. List A has five standing committees: crime, law, and deviance; family; political sociology; social psychology; and stratification. For the list B exam, a student may propose any area that is not covered under List A and for which there is adequate faculty support.

For a detailed statement of graduate study regulations, contact the Department of Sociology. Prospective doctoral students should examine this document carefully.

Joint Ph.D./J.D.
The Department of Sociology and the College of Law offer the joint Juris Doctor/Doctor of Philosophy. The program is highly individualized, allowing students to explore varied aspects of the relationship between law and society. Joint Ph.D./J.D. students may count up to 12 s.h. of graduate credit toward both degrees, with approval from the Department of Sociology and the College of Law.

Separate application to each degree program is required. Applicants must be admitted to both programs before they may be admitted to the joint degree program. For information about the J.D., see the College of Law (p. 969) section of the Catalog.

Teaching Assistantship Training
All new graduate students are expected to attend a three-day orientation for teaching assistants before classes begin. In addition, SOC:7010 Teaching Sociology is required for students who wish to teach their own courses.

Admission
Admission to graduate study in sociology usually requires an undergraduate g.p.a. of at least 3.25 and a score of 300 or higher (quantitative and verbal) on the Graduate Record Examination (GRE) General Test. Students whose first language is not English should submit scores on the Test of English as a Foreign Language (TOEFL).

Applicants also must complete the Graduate College application form, the supplemental sociology department application, and use the department's personal reference forms to obtain three letters of recommendation.

All application materials for fall admission must be received by January 1. The deadline for applying for departmental financial support is January 1. Evaluation of applications begins in early January.

Admission decisions are based on consideration of prior academic performance, personal reference letters, scores on the GRE General Test, and the applicant's statement of reasons for pursuing advanced work in sociology at the University of Iowa. The department has no specific undergraduate course requirements for admission, but a background in the social sciences with some mathematical training is useful. A foreign language is not required for admission, and there is no foreign language requirement for a graduate degree in sociology. To inquire about admission, consult the chair of the admissions committee, Department of Sociology.

Financial Support
The Department of Sociology offers teaching assistantships and research assistantships for graduate students. Students who receive one-half-time teaching or research assistantships work 20 hours each week for faculty members on either teaching or research assignments. Out-of-state students who hold assistantships are assessed tuition at the resident rate. Graduate students also may be eligible for fellowships offered by the Graduate College.

Research Centers and Facilities
Center for Asian and Pacific Studies
The Center for Asian and Pacific Studies provides excellent opportunities for studying Asia from a social science perspective. It supports related Asia studies and offers a monthly seminar that features lively discussions by scholars from many different disciplines.

Center for Criminology and Sociolegal Studies
The Center for Criminology and Sociolegal Studies is an interdisciplinary research and teaching program for the study of crime, law, deviance, social control, and mental health. It sponsors a colloquium series in crime, law, and social control, in which affiliates, graduate students, and outside speakers present their ongoing research, and a working-paper series in which members
disseminate research papers to the academic community. The center also provides research support and a research infrastructure for faculty and graduate students and offers graduate research assistantships for interested students. Internship in Criminal Justice and Corrections [SOC:4400] is administered through the center.

**Center for the Study of Group Processes**

The Center for the Study of Group Processes has an 18-room small-group laboratory with eight computer-controlled subject rooms that provide audiovisual and psychophysiological recording capabilities, two large-group rooms with an adjoining observation room, an audiovisual control room, a sociophysiological instrumentation lab, a virtual social environment lab, and other flexible research office spaces.

**Courses**

Prerequisites for courses are stated in the course descriptions.

**Lower-Level Undergraduate**

**SOC:1000 First-Year Seminar**

1-2 s.h.

Small discussion class taught by a faculty member; topics chosen by instructor; may include outside activities (e.g., films, lectures, performances, readings, visits to research facilities). Requirements: first- or second-semester standing.

**SOC:1010 Introduction to Sociology**

3-4 s.h.

How individuals are organized into social groups, ranging from intimate groups to bureaucracies, and how these influence individual behavior; nature and interrelationships of basic social institutions (family, education, religion, economy). GE: Social Sciences.

**SOC:1020 Social Problems**

3-4 s.h.

Emergence and distribution of selected social problems; alternative solutions; may include population, inequality, female-male relationships, racism, crime. GE: Social Sciences.

**SOC:1022 Social Justice and Social Welfare in the United States**

3 s.h.

Historical development of social welfare and social justice in the United States; individual values and ethics; role and responsibilities of enhancing society; contemporary practice to address social injustices including poverty, discrimination, various forms of violence; small group discussions and debates of various issues to allow for an exchange of diverse views and perspectives; volunteer work. GE: Values, Society, and Diversity. Same as SSW:1022.

**SOC:1119 Policy Matters: Perspectives on Contemporary Problems**

3 s.h.

Examination of major social issues and challenges faced by nation, state, and communities; what government’s role is in a democratic society; how we decide when, where, and how government acts in ways consistent with social goals and values; focus on pressing social issues (i.e., education, inequality, labor standards, health care); historical development of the problem or policy; ways we address social issues; effectiveness of current policies and alternative policies; ways in which social science contributes to policy design and assessment. GE: Social Sciences. Same as HIST:1119.

**SOC:1310 Gender and Society**

3-4 s.h.

Role and status of women in society; sex differences, sex role socialization, theories about origin and maintenance of sexual inequalities, changes in social life cycle of women, implications for social institutions and processes; focus on contemporary United States. GE: Values, Society, and Diversity. Same as GWS5:1310.

**SOC:1410 Introduction to Criminology**

3 s.h.

Nature and causes of crime; the criminal justice process, correctional treatment, crime prevention. GE: Social Sciences.

**SOC:1420 Law and Society**

3 s.h.

Exploration of how society shapes the law and how law shapes the society; definitions and conceptualizations of law; social origins of law; roots of compliance with or deviance from law; legal consciousness and uses of law in everyday life; effect of law on social inequality and distribution of power; law as a venue and a tool for social change.

**SOC:1447 Introduction to the Criminal Justice System**

3 s.h.

Organization and function of criminal justice system in the United States; history, organization, and current practices of policing, criminal courts, and correctional system; sociological and criminological research on major subsystems comprising criminal justice systems.

**SOC:1810 Poverty, Inequality, and Public Policy**

3 s.h.

Introduction to public policymaking; historical context of current public policy responses to poverty and inequality in the United States; measurement of poverty and inequality; various experiences of poverty and inequality; efficacy of policies addressing contemporary poverty and inequality.

**SOC:2064 Racial Inequity and the Experiences of African American Families in the U.S.**

3 s.h.

Racial inequality and experiences of African American families in the U.S. during 20th and 21st centuries; historical context for contemporary research on African American family; relative impact of structural and cultural factors on various aspects of African American family life, declining marriage rates, family formation patterns; intersections of race and class in family life; research methods used to examine dynamics of African American family life, including quantitative analysis, structured qualitative interviews, and ethnography. Same as AFAM:2064.
SOC:2130 Sociological Theory 3 s.h.
Theoretical perspectives in sociology; construction, evaluation of sociological explanations. Prerequisites: SOC:1010.

SOC:2160 Applied Statistics for Social Scientists 3 s.h.
Applied statistics for sociology majors: frequency distributions, graphic presentation, measures of central tendency, measures of variability, elementary probability, populations and samples, sampling distributions, estimation and confidence intervals, hypothesis testing, chi-square test, regression and correlation, analysis of variance; computer software used in data analysis; emphasis on appropriate use and interpretation of statistics in the study of sociological topics. Prerequisites: SOC:1010. Requirements: sociology major.

SOC:2170 Research Methods 3 s.h.
Basic scientific concepts; emphasis on theoretical thinking, statement of researchable propositions, logic and meaning of proof operant in the research process; general issues in designing social research, including problems of sampling and measurement, analysis, presenting research data, interpreting research findings. Prerequisites: SOC:1010. Requirements: sociology major; and MATH:1020 or STAT:1010 or a higher-level math or statistics course.

SOC:2220 Principles of Social Psychology 3-4 s.h.
Introduction to a range of theories that seek to explain behavior of people within their groups, and dynamics between groups, at various levels of society. GE: Social Sciences.

SOC:2222 Introduction to Social Work 4 s.h.
Social welfare as a social institution; settings, methodologies of social work, practice; profession of social work; historical development of American social welfare, social work; a minimum of 45 hours volunteer work. Requirements: sophomore or higher standing. Same as SSW:2222.

SOC:2235 Women, Crime, and Justice 3 s.h.
Overview of women's experiences with crime and criminal justice system, with reference to experiences of men for purposes of comparison; role of race, ethnicity, and poverty in women's experiences; causes of crime, inequalities in police-citizen interactions, imprisonment, and other aspects of criminal justice system experience. Same as GWS:2325.

SOC:2426 Deviance and Control 3 s.h.
Behaviors considered deviant or counter-normative by groups and societies; actions of those groups and societies to try to control such behaviors; behaviors that often do not violate laws, but are viewed and treated as wrong or immoral by others, including others in positions of power or authority; importance of recognizing what is viewed as deviant changes over time and varies across groups; explanations of deviance, society's informal and formal responses (i.e., labeling and medicalization of deviance perspectives).

SOC:2430 Comparative Criminal Justice Systems 3 s.h.
Criminal justice systems around the world; similarities and differences in how justice is defined and operationalized in contemporary legal traditions in terms of police, courts, and corrections examined in light of cultural norms and values; emphasis on link between societal characteristics and legal traditions; differences in defendant rights guaranteed under various legal traditions.

SOC:2750 Fertility and Reproduction 3 s.h.
Exploration of when, why, how, and with whom Americans bear children, comparison to other developed and developing countries in the world; infertility and its treatments; ethics of surrogacy; voluntary childlessness; rapid rise of nonmarital childbirth in the U.S. and other countries; politics of childbirth; declining populations; rapid aging of rich where women have basically stopped having children. Same as GWSS:2750.

SOC:2810 Social Inequality 3 s.h.
Major theoretical perspectives for understanding inequality in economics, power, prestige; the magnitude of social inequality in the United States; sex and race inequality; trends in and causes of social mobility; selected consequences of social inequality. GE: Values, Society, and Diversity.

Upper-Level Undergraduate and Graduate

SOC:3171 Drugs and Society 3 s.h.
How people use drugs for recreation, performance enhancement, and medical treatment; implications for drug control, treatment, and public policy.

SOC:3200 International Perspectives: Xicotepec 1-3 s.h.
Interdisciplinary service-learning course; Mexican culture and history through community-based service project, assigned readings, and discussion; includes a required spring break trip to Mexico. Same as CLAS:3200.

SOC:3220 Sociology of Mental Illness 3 s.h.
The socially constructed nature of mental illness; theoretical perspectives and research on social antecedents and social consequences of mental health. Prerequisites: SOC:1010 or SOC:1020 or SOC:2220.

SOC:3225 Paranormal Society 3 s.h.
Sociological perspectives to investigate paranormal beliefs; popular support of paranormal claims despite being rejected by the scientific community; examination of paranormal claims, validity and voracity of popular explanations through the application of scientific process; social psychological theories to understand and decipher society's historical and growing fascination with paranormal beliefs.

SOC:3415 Global Criminology 3 s.h.
Crime and the control of crime at the transnational and sub-national levels of analysis; focus on non-U.S. societies; consequences of economic, political, and cultural globalization.
SOC:3416 Race, Crime, and Justice 3 s.h.
Extent and nature of racial disparities in offending and victimization; interpretation of patterns using various theoretical approaches; examination of race inequalities across many stages of criminal justice process.

SOC:3417 Community Corrections 3 s.h.
Community corrections; probation, parole, intermediate sanctions (boot camps, intensive supervision, electronic monitoring); contemporary issues in community supervision of offenders.

SOC:3420 Juvenile Delinquency 3 s.h.
Theories of juvenile delinquency; individual, neighborhood, and societal explanations of delinquency; research on families, schools, peers, neighborhoods, gangs, and delinquency.

SOC:3437 American Crime 3 s.h.
Prevailing issues in criminology; extent and nature of disparities in offending and victimization, interpretation of patterns using various theoretical approaches; evaluation of crime-control policies.

SOC:3450 Criminal Legal System 3 s.h.
Discretionary decision making in U.S. criminal courts from arrest through sentencing; legal and sociolegal issues relevant to each stage of felony adjudication; sociological and social-psychological theories of decision making in adjudication, empirical research testing these theories.

SOC:3510 Medical Sociology 3 s.h.
Theoretical perspectives and research on social precursors and consequences of physical and mental health ailments; focus on contemporary U.S. with crosscultural comparisons; stereotypes and diagnosis, gender and racial/ethnic differences, health inequalities related to socioeconomic status.

SOC:3520 Political Sociology 3 s.h.
Sociological analysis of political behavior and belief, group conflict and political process, group consensus, political institutions, power and policy-making systems; relationship of the political system to the social system. Prerequisites: SOC:1010.

SOC:3525 Public Opinion 3 s.h.
Role in making public policy; formation, change of political attitudes and opinions; political ideology; measurement of public opinion; how opinion polls are conducted; experience with interviewing and conducting public opinion research. Same as POLI:3204.

SOC:3610 Organizations and Modern Society 3 s.h.
Approaches to the sociological study of economic and noneconomic organizations; the role of power and authority within the organization, and between the organization and its environment. Prerequisites: SOC:1010 or SOC:2220.

SOC:3650 Education, Schools, and Society 3 s.h.
Overview of sociology of education; historical and current sociological perspectives on education; race, class, and gender inequality in schooling; higher education; contemporary debates in education (e.g., affirmative action, school choice). Prerequisites: SOC:1010 or SOC:1020.

SOC:3710 The American Family 3 s.h.
Structure and process; change over the life cycle; interrelations with other institutions; historical changes; variations by social class and ethnic group. Prerequisites: SOC:1010. GE: Values, Society, and Diversity.

SOC:3830 Race and Ethnicity 3 s.h.
Multidisciplinary study of intergroup relations, with emphasis on historical, sociological, and social psychological issues in the study of American minority groups. GE: Values, Society, and Diversity.

SOC:3840 Community and Urban Sociology 3 s.h.
Impact of urbanization on social life, social networks; how social forces shape patterns of urban growth; racial segregation, gentrification; consequences of the growth of suburbs; urban crises, including concentrated poverty and crime. Prerequisites: SOC:1010 or SOC:1020.

SOC:3850 Economy and Society 3 s.h.
Economic debates that faced advanced market economies in the 20th century with extensions to the developing world; development and maintenance of investment elites and labor markets, development and extension of state activity.

SOC:3880 Introduction to Network Science 3 s.h.
Introduction to the basic properties of network structure (e.g., density, mutuality, cliques); substantive insights regarding the role and consequences of networks in social life; the role of networks in job searching/hiring processes; how innovations diffuse through networks; and relationships as social resources. Prerequisites: SOC:1010 or SOC:1020.

SOC:4210 Small Group Analysis 3 s.h.
Internal processes governing small groups (e.g., friendship cliques, families, the president's cabinet, committees); how small groups relate to the larger social environment; groups' impact on their members. Prerequisites: SOC:1010 or SOC:1020.

SOC:4225 The Social Psychology of Leadership 3 s.h.
Techniques, proven by research, that enhance students' ability to know, work with, and lead people; recent research in social psychology, how it applies to practical leadership problems.

SOC:4230 Sociology of Self-Improvement 3 s.h.
How self-improvement as a cultural goal shaped development of political, business, educational, and religious institutions in the United States; history of self-improvement movement and industry; selected readings that show how much self-improvement is possible and which techniques are more useful than others.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOC:4400</td>
<td>Internship in Criminal Justice and Corrections</td>
<td>1-5 s.h.</td>
</tr>
<tr>
<td></td>
<td>Supervised field work in a criminal justice or correctional agency. Prerequisites: SOC:1410 or SOC:3420 or SOC:3450 or SOC:4420 or SOC:4430 or SOC:4450 or SOC:4460. Requirements: sociology major, junior standing, and consent of director of the Center for Criminology and Socio-Legal Studies.</td>
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</tr>
<tr>
<td>SOC:4420</td>
<td>Criminal Punishment</td>
<td>3 s.h.</td>
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<tr>
<td></td>
<td>Sociological theories and research on criminal punishment; classical and contemporary theories; research on imprisonment and capital punishment.</td>
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<tr>
<td>SOC:4430</td>
<td>Interpersonal Violence in Society</td>
<td>3 s.h.</td>
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<td></td>
<td>Extent and nature of interpersonal violence in societies, in general and for specific population subgroups; theoretical explanations for the phenomenon; alternative ways of defining and responding to violence across various social contexts; application of scientific method; relevant literatures from multiple disciplines including sociology, anthropology, criminology, psychology, and behavioral economics; types of violence defined as illegal and those which are deviant but not illegal. Prerequisites: SOC:1410. Recommendations: SOC:2170 strongly recommended before enrollment in SOC:1410.</td>
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<tr>
<td>SOC:4440</td>
<td>Sociology of White-Collar Crime</td>
<td>3 s.h.</td>
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<td></td>
<td>Critical perspectives on causes and consequences of white-collar crime; definitions and types; criminological, social-psychological, and rational-choice theories; political and economic causes of white-collar crime under capitalism and socialism; rates and patterns of white-collar criminality across different social groups (defined by racial, ethnic, class, and gender attributes); control, prevention, and criminal justice response.</td>
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<tr>
<td>SOC:4450</td>
<td>Juvenile Justice: A Sociolegal Perspective</td>
<td>3 s.h.</td>
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<tr>
<td></td>
<td>Examination of social, historical, and legal foundations of juvenile justice system in the United States; adjudication processes in juvenile justice, transfer of juveniles to criminal court, contemporary juvenile court, community-based corrections programs, legalities of juvenile system; current and future directions in juvenile justice.</td>
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<tr>
<td>SOC:4460</td>
<td>Sociology of Law</td>
<td>3 s.h.</td>
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<td></td>
<td>Conceptual, historical, and theoretical issues of law and operation of the criminal justice system; theory and research on law and the criminal justice system.</td>
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<tr>
<td>SOC:4461</td>
<td>Gender and Violence</td>
<td>3 s.h.</td>
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<tr>
<td></td>
<td>Extent and nature of gendered violence, interpretation of patterns using feminist theory and perspectives on masculinities and heterosexism; examination of interpersonal violence, including criminal violence committed by women and men, violence against women and men (victimization), spousal/intimate partner abuse, youth gangs, bullying in schools, sexual violence, femicide, and genocide. Same as GWSS:4461.</td>
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<tr>
<td>SOC:4450</td>
<td>Political Sociology and Social Movements</td>
<td>3 s.h.</td>
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<td></td>
<td>Social unrest; crowd behavior; social movements treated as a form of social change. Prerequisites: SOC:1010 or SOC:1020.</td>
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<tr>
<td>SOC:4820</td>
<td>Sociology of Sexuality</td>
<td>3 s.h.</td>
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<tr>
<td></td>
<td>Sociological perspectives on sexuality, including theoretical and conceptual developments, empirical regularities, and social implications; sexual expression in the United States. Prerequisites: SOC:1010 or SOC:1020. Same as GWSS:4820.</td>
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<tr>
<td>SOC:4900</td>
<td>Selected Topics in Sociology</td>
<td>3 s.h.</td>
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<tr>
<td></td>
<td>Topics vary.</td>
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<tr>
<td>SOC:4901</td>
<td>Selected Topics in Criminology, Law and Justice</td>
<td>3 s.h.</td>
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<tr>
<td></td>
<td>Varied topics in criminology, criminal legal system, gender and violence, global criminology.</td>
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<tr>
<td>SOC:4902</td>
<td>Selected Topics in Family, Health, and Well-Being</td>
<td>3 s.h.</td>
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<tr>
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<td>Varied topics in family structures and practices; social institutions and forces that shape or are shaped by families.</td>
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<tr>
<td>SOC:4903</td>
<td>Selected Topics in Organizations, Networks, and Careers</td>
<td>3 s.h.</td>
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<tr>
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<td>Varied topics in macro- and micro-level processes affecting ability to understand and manage organizations, including the groups and individuals that compose them.</td>
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<tr>
<td>SOC:4909</td>
<td>Graduation Portfolio</td>
<td>0 s.h.</td>
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<tr>
<td></td>
<td>Submission of final graduation portfolio first assembled in capstone course required for sociology major.</td>
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<tr>
<td>SOC:4910</td>
<td>Capstone Course in Sociology Internship</td>
<td>3 s.h.</td>
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<tr>
<td></td>
<td>Senior project illustrating student's accomplishments during his or her undergraduate career; prepared in collaboration with sociology faculty member or other experts in the student's area of sociological interest; record for student's own reflection, information for potential employers and graduate programs. Requirements: major g.p.a. of 2.00. Corequisites: SOC:4910.</td>
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<tr>
<td>SOC:4920</td>
<td>Social Services Organization Internship</td>
<td>arr.</td>
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<td></td>
<td>Student volunteer work with social services organizations; 48 hours of volunteer work for each semester hour of credit; final paper. Requirements: sociology major.</td>
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<tr>
<td>SOC:4930</td>
<td>Teaching Internship</td>
<td>3 s.h.</td>
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<tr>
<td></td>
<td>Experience providing supervised support for instructors teaching basic courses in sociology. Requirements: appointment as sociology undergraduate teaching aide.</td>
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<tr>
<td>SOC:4990</td>
<td>Directed Individual Study</td>
<td>arr.</td>
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<tr>
<td>SOC:4997</td>
<td>Honors Seminar</td>
<td>1-2 s.h.</td>
</tr>
<tr>
<td></td>
<td>Topic development for senior honors projects. Offered spring semesters. Requirements: sociology honors standing.</td>
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</tr>
<tr>
<td>SOC:4998</td>
<td>Honors Research</td>
<td>arr.</td>
</tr>
<tr>
<td></td>
<td>Research projects under faculty supervision.</td>
<td></td>
</tr>
</tbody>
</table>
Graduate

**SOC:5000 Scholarly Professionalism and Integrity**  2 s.h.
General introduction to department and discipline for entering graduate students; departmental and graduate college requirements, program and career planning, interaction with faculty members, consideration of student interests and concerns. Two semesters beginning in fall. Requirements: sociology graduate standing.

**SOC:5110 History of Sociological Theory**  3 s.h.
Ideas of major 19th- and 20th-century social thinkers (e.g., Marx, Weber, Durkheim, Simmel, Mead).

**SOC:5130 Sociology of Education**  3 s.h.
Effects of school and school organization on educational outcomes; course-taking patterns and tracking, desegregation, differences in school sector; focus on entire span of student's academic career; examination of school and organizational effects at the primary, secondary, and postsecondary levels of education. Same as EPLS:5130.

**SOC:5160 Research Design and Methods**  3 s.h.
Research designs; sampling designs and techniques; questionnaire construction, interviewing techniques; participant and nonparticipant observation; coding and preparation of data for analysis; measurement techniques, reliability, and validity. Requirements: SOC:6170 or graduate standing.

**SOC:5165 Race, Class, and Gender Inequalities in Education**  3 s.h.
Role of ascribed characteristics (e.g., race, class, gender) on educational opportunities and outcomes; achievement gaps, school desegregation, social and cultural capital, peer influence, family attributes, neighborhood influence, influence of significant others, course-taking patterns, and educational destinations. Same as EPLS:5131.

**SOC:5310 Gender Theory**  3 s.h.
Introduction to sociological analysis of gender; multiple ways that gender patterns the social world in which we live; predominant theoretical stances related to study of gender; how gender structures everyday social interaction; how social institutions (e.g., work, family) give rise to and recreate gendered meanings, expectations, structures; possibilities for interventions and change to gender system.

**SOC:5680 Sociology of Higher Education**  3 s.h.
Sociological approach to study of higher education; issues of inequality and stratification in higher education; focus on relationship between higher education and larger economic and demographic processes; college access, college destinations, attainment, and returns to a college degree. Same as EPLS:5142.

**SOC:5810 Education and Social Change**  2-3 s.h.
Role of educational institutions, in connection with political and economic structures, in the process of social change; illumination of theories of social change through case studies of educational systems in both less-developed and industrialized nations. Same as EPLS:5210.

**SOC:6110 Theory Construction and Analysis**  3 s.h.
Contemporary theoretical issues and nature of theory, theory's place in research, strategies of theory construction. Requirements: sociology graduate standing.

**SOC:6140 Seminar: Selected Topics in Sociological Theory**  3 s.h.

**SOC:6170 Introduction to Sociological Data Analysis**  3 s.h.
Statistical measures for descriptive methods and association; logic of statistical inference, hypothesis testing; background essential to understanding linear models, models for categorical data analysis. Requirements: introductory statistics.

**SOC:6175 Qualitative Methods**  3 s.h.
Logic of qualitative research; basic skills necessary for a qualitative research project. Requirements: sociology graduate standing.

**SOC:6180 Linear Models in Sociological Research**  3 s.h.
Statistical techniques associated with general linear model; emphasis on multiple regression, its generalizations; corresponding computer programs. Requirements: SOC:6170 or graduate standing.

**SOC:6210 Contemporary Approaches to Social Psychology**  3 s.h.
Review and critical analysis of current theoretical approaches and systems of social psychological analysis. Recommendations: sociology graduate standing.

**SOC:6220 Seminar: Selected Topics in Social Psychology**  3 s.h.
Selected theoretical and methodological issues.

**SOC:6264 Post-Industrial Cities**  3 s.h.
Aspects of urban inequality in post-industrial cities; racial inequality, urban poverty, neighborhood inequality, and municipal bankruptcy.

**SOC:6310 Gender Stratification Seminar**  3 s.h.
Occupational gender segregation; gender gap in pay; role of family caregiving in women's lower pay; evaluation of caregiving work; comparable work.

**SOC:6410 Seminar: Criminological Theories**  3 s.h.
Theories of crime causation and their relationships to the cultures in which they have functioned.

**SOC:6420 Seminar: Selected Topics in Deviance and Control**  3 s.h.
Critical analysis of current research; emphasis on theoretical contributions and methodological foundations.

**SOC:6610 Complex Organizations**  3 s.h.

**SOC:6810 Social Stratification**  3 s.h.
Classical and contemporary theories; current research on the causes and magnitude of inequality in economics, power, and prestige; social mobility; critical issues in stratification.
SOC:6850 Seminar: Sociology of Labor Markets 3 s.h.
Sociological and economic theories and research concerning area/regional/local labor markets, industrial sectors and the dual labor market, occupational/internal labor markets; other structural explanations of inequality.

SOC:7170 Advanced Statistical Modeling of Data 3 s.h.
Models for analysis of categorical data, including loglinear, logit, related discrete data models. Requirements: advanced graduate standing.

SOC:7180 Structural Equation Modeling 3 s.h.
Overview of structural equation models (SEMs), also known as LISREL models, covariance structure models; specific types of SEMs, such as simultaneous equations and confirmatory factor analysis; intermediate topics.

SOC:7410 Communities and Crime 3 s.h.
Distribution of crime as rooted in community-level conditions such as concentrated affluence or poverty, racial residential segregation, unemployment, family disruption, and immigration. Requirements: sociology graduate standing.

SOC:7460 Sociology of Law Seminar 3 s.h.
Relationship between law and society explored through writings and research of classical and contemporary sociologists and legal scholars. Requirements: sociology graduate standing.

SOC:7620 Social Network Analysis 3 s.h.
Relational, data-oriented approach to representing linkages or relationships among social units, and to examine the relevance of these social structures in social processes. Requirements: basic multiple regression.

SOC:7820 Seminar: Selected Topics in Social Stratification 3 s.h.
Requirements: social science graduate standing.

SOC:7860 Seminar: Economy and Society 3 s.h.
Relationships between social classes and nation-states in capitalist societies; historical experience of the United States; comparative perspective, especially regarding Western Europe.

**Teaching**

SOC:7010 Teaching Sociology 2-3 s.h.
Supervised preparation for teaching sociology courses; literature on teaching; course objectives, alternative teaching techniques; preparation of course syllabus, lectures, discussions, exams. Requirements: advanced sociology graduate standing.

**Independent Reading and Research**

SOC:6080 Master's Thesis arr.
SOC:7030 Readings and Research Tutorial arr.
SOC:7090 Ph.D. Dissertation arr.
Director, Division of World Languages, Literatures, and Cultures
- Russell Ganim
Chair, Department of Spanish and Portuguese
- Mercedes Niño-Murcia

Undergraduate majors: Spanish (B.A.); Portuguese (B.A.)
Undergraduate minors: Spanish; Portuguese
Graduate degrees: M.A. in Spanish; M.F.A. in Spanish creative writing; Ph.D. in Spanish
Faculty: http://clas.uiowa.edu/dwllc/spanish-portuguese/people/faculty
Web site: http://clas.uiowa.edu/dwllc/spanish-portuguese

The Department of Spanish and Portuguese offers undergraduate majors and minors, graduate degree programs, and course work for students in other disciplines. The department provides a wide selection of courses in Spanish and Portuguese, languages that are spoken in many cultures around the world and are important in the study of literature, art, film, and many other areas. Spanish and Portuguese language courses are open to any student who has satisfied the course prerequisites.

In addition to language courses, the department offers general interest courses on literature, film, and culture that are taught in English. It also participates in several study abroad programs.

Undergraduate students in all majors may satisfy the World Languages requirement of the General Education Program (p. 313) with courses in Spanish or Portuguese; see "Language for General Education" below. The department also offers other courses that are approved for General Education and are taught in English and a First-Year Seminar designed for entering undergraduates.

The Department of Spanish and Portuguese is one of the academic units in the Division of World Languages, Literatures, and Cultures (p. 228).

Undergraduate Programs of Study
- Major in Spanish (Bachelor of Arts)
- Major in Portuguese (Bachelor of Arts)
- Minor in Spanish
- Minor in Portuguese

Elementary and intermediate courses in Spanish language interrelate five performance goals—listening, reading, speaking, writing, and cultural knowledge—in a staged progression whose overall goal is to develop proficiency. The curriculum emphasizes acquisition of Spanish language skills in communicative contexts, enrichment of vocabulary through an introduction to Hispanic culture, and development of grammatical accuracy in speaking and writing.

The beginning course in Portuguese is for students without previous study or experience with the language. There also is a special Portuguese course for students who already know Spanish. Portuguese classes provide a great deal of individual attention in an informal language-learning environment. Courses emphasize speaking, comprehending, reading, and writing Brazilian Portuguese. They incorporate cultural material in the form of videos and music.

Bachelor of Arts: Spanish

The Bachelor of Arts with a major in Spanish requires a minimum of 120 s.h., including 36 s.h. of work for the major. Students must maintain a g.p.a. of at least 2.00 in all courses for the major and in all UI courses for the major. They also must complete the College of Liberal Arts and Sciences General Education Program (p. 313).

The major is built on course work in Spanish peninsular and Spanish American literature, Hispanic cultures, Hispanic linguistics, and advanced language skills. The goal of the major is twofold: to study content areas related to the Spanish language, such as literature, culture, and linguistics; and to develop proficiency in the Spanish language in all four skills—speaking, listening, reading, and writing.

Students who major in Spanish may go on to graduate study in areas such as Spanish and Spanish American literature, Hispanic linguistics, or comparative literature. They also may combine their Spanish studies with other areas to prepare for career opportunities in international business, government, travel, journalism, or communication, where knowledge of another language and other cultures is essential.

Course work for the major includes a core, which consists of one course from each of the four principal academic areas of the department (see "Required Core" below), and eight electives, which may focus on one or more of the four principal areas or may include a broad range of courses (see "Electives" below).

All courses taken for the Spanish major must be numbered SPAN:2000 or above. A minimum of one and a maximum of four courses for the major must be numbered 2000-2999. At least three courses for the major must be numbered 4000-4999. Students may count a maximum of 6 s.h. earned in courses offered by other University of Iowa departments toward the Spanish major; see "Electives" below for guidelines. A maximum of 15 s.h. of approved transfer credit may be counted toward the major.

Advanced undergraduates preparing to earn a B.A. with honors may enroll in graduate courses with the permission of their advisor and the department chair. Ordinarily, permission is granted only to students who have completed a minimum of 30 s.h. of work for the major and whose g.p.a. in the major is 3.75 or higher.

The major in Spanish requires the following course work.

Required Core

One course in Hispanic linguistics chosen from these:

- SPAN:3100 Structures of Spanish: Words and Sentences 3 s.h.
- SPAN:3110 Spanish Sound Structure 3 s.h.
- SPAN:3120 Foundations in Sociolinguistics 3 s.h.
- SPAN:3130 Introduction to Bilingualism 3 s.h.
- SPAN:3150 Spanish Applied Linguistics 3 s.h.
- SPAN:3170 Introduction to Spanish Language Acquisition 3 s.h.
### Electives

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
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<tbody>
<tr>
<td>SPAN:3290</td>
<td>Topics in Cinema and Society</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>SPAN:3400</td>
<td>Chicano Literature and Culture</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>SPAN:3500</td>
<td>Topics in Culture of the Hispanic World</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>SPAN:3520</td>
<td>Introduction to Film Studies</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>SPAN:3550</td>
<td>Doing Business in the Spanish-Speaking World</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>SPAN:3600</td>
<td>Cultures of Spain</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>SPAN:3610</td>
<td>Hispanic Institute: Culture</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>SPAN:3620</td>
<td>Madrid</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>SPAN:3630</td>
<td>Spanish Youth Culture</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>SPAN:4820</td>
<td>Latino/a Popular Culture</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>SPAN:4830</td>
<td>The Hispanic World in the Digital Era</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>SPAN:4850</td>
<td>Topics in Cultural Studies</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>SPAN:4860</td>
<td>The Spanish Civil War</td>
<td>3 s.h.</td>
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<tr>
<td>SPAN:4870</td>
<td>Islamic Cultural Presence in Spain</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>SPAN:4880</td>
<td>Comic Books and Graphic Novels in the Hispanic World</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>SPAN:4920</td>
<td>Topics in Film Studies</td>
<td>3 s.h.</td>
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</tbody>
</table>

### Bachelor of Arts: Portuguese

The Bachelor of Arts with a major in Portuguese requires a minimum of 120 s.h., including at least 30 s.h. of work for the major. Students must maintain a g.p.a. of at least 2.00 in all courses for the major and in all UI courses for
the major. They also must complete the College of Liberal Arts and Sciences General Education Program (p. 313).

Portuguese is spoken in Portugal, Brazil, Angola, Mozambique, Cape Verde, and Guine-Bissau. There are more speakers of Portuguese in South America than there are of Spanish. Knowledge of Portuguese and of Luso-Brazilian culture is extremely helpful for students interested in career opportunities in international business, government, or related fields.

All courses for the major in Portuguese must be numbered PORT:3100 or above. Students must complete the courses listed under “Prerequisites” below, or their equivalents, before they may begin fulfilling requirements for the major.

The major in Portuguese requires the following courses or their equivalents. Courses listed under “Prerequisites” do not count toward the 30 s.h. of work for the major.

### PREREQUISITES TO COURSE WORK FOR THE MAJOR

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>PORT:2000 Accelerated Elementary Portuguese</td>
<td>5</td>
</tr>
<tr>
<td>PORT:2500 Accelerated Intermediate Portuguese</td>
<td>5</td>
</tr>
</tbody>
</table>

### REQUIRED COURSES

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>PORT:3100 Composition and Conversation</td>
<td>3</td>
</tr>
<tr>
<td>PORT:3350 Brazilian Literature Before 1900</td>
<td>3</td>
</tr>
<tr>
<td>PORT:3400 Brazilian Literature After 1900</td>
<td>3</td>
</tr>
<tr>
<td>PORT:3500 Introduction to Portuguese Literature</td>
<td>3</td>
</tr>
<tr>
<td>PORT:4100 Topics in Luso-Brazilian Culture</td>
<td>3</td>
</tr>
</tbody>
</table>

### ELECTIVES

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Portuguese courses numbered above PORT:3050</td>
<td>15</td>
</tr>
</tbody>
</table>

A maximum of 6 s.h. may be taken in approved courses in related areas (e.g., art, anthropology, comparative literature, geography, history, Latin American studies, linguistics, sociology, Spanish).

### B.A. with Teacher Licensure

Spanish majors interested in earning licensure to teach at the elementary and/or secondary level must complete the College of Education’s Teacher Education Program (TEP) in addition to the requirements for the major and all requirements for graduation. The TEP requires several College of Education courses and student teaching. Contact the Office of Education Services for details.

Students must satisfy all degree requirements and complete Teacher Education Program licensure before degree conferral.

Students who plan to use a major in Portuguese or their work toward a minor in Spanish or in Portuguese as academic background for earning teacher licensure should contact the Office of Education Services about requirements.

### Four-Year Graduation Plan

The following checkpoints list the minimum requirements students must complete by certain semesters in order to stay on the University’s Four-Year Graduation Plan.

<table>
<thead>
<tr>
<th>Semester</th>
<th>Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Before the third semester begins</td>
<td>Intermediate Spanish I (or equivalent second-year, first-semester competence in Spanish)</td>
</tr>
<tr>
<td>Before the fifth semester begins</td>
<td>two courses in Spanish beyond Intermediate Spanish II (or equivalent second-year, second-semester competence)</td>
</tr>
<tr>
<td>Before the seventh semester begins</td>
<td>four more courses in the major and at least 90 s.h. earned toward the degree</td>
</tr>
<tr>
<td>Before the eighth semester begins</td>
<td>nine courses in the major</td>
</tr>
</tbody>
</table>

### Honors in the Major

Students majoring in Spanish or in Portuguese have the opportunity to graduate with honors in their major. Students must have a cumulative University of Iowa g.p.a. of at least 3.33 and a g.p.a. of at least 3.50 in their major in order to enter the departmental honors program.

To graduate with honors in the Spanish major, students must request honors designation for one course they take for the major (3 s.h.), in consultation with the department honors advisor. They also must register for 3 s.h. in SPAN:4998 Honors: Research and Thesis. To complete SPAN:4998 successfully, students must submit an honors thesis they have written in Spanish and must present it orally to a faculty committee in a meeting conducted in Spanish.

To graduate with honors in the Portuguese major, students must earn 3 s.h. in PORT:4999 Honors Research and Thesis plus 3 s.h. in a course chosen in consultation with the department honors advisor. Both courses (6 s.h.) count toward the total 30 s.h. required for the major in Portuguese. Students also must write an honors thesis and present it orally to a committee of three faculty members.

In addition to honors in their majors, undergraduate students have a variety of opportunities for honors study and activities through membership in the University of
Minor: Spanish

The minor in Spanish requires a minimum of 18 s.h. in Spanish courses, including at least 15 s.h. in University of Iowa Spanish courses numbered 2000 or above; UI study abroad programs may count toward the minor. Students must maintain a g.p.a. of at least 2.00 in all courses for the minor and in all UI courses for the minor. Course work in the minor may not be taken pass/nonpass.

The minor must include a minimum of 3 s.h. earned in course work on Spanish or Spanish American literature or culture, or Hispanic linguistics. One University of Iowa Spanish course taught in English may be counted toward the minor (see list below); remaining courses for the minor must be taught in Spanish, including study abroad courses. Students may not count SPAN:3095 Spanish Composition and Grammar or SPAN:4095 Advanced Spanish Grammar toward the Spanish minor.

The following Spanish courses are taught in English. Students may count a maximum of one of them toward the minor in Spanish.

- SPAN:2050 Spanish in the U.S. 3 s.h.
- SPAN:2280 Introduction to Latina/o Studies 3 s.h.
- SPAN:2700 Introduction to Latin American Studies 3 s.h.
- SPAN:3190 Psycholinguistic Aspects of Bilingualism 3-4 s.h.
- SPAN:3270 Pan-Caribbean Literary Currents 3 s.h.
- SPAN:3420 Cuban American Literature and Culture 3 s.h.
- SPAN:3440 Topics in Latino/a Literature and Culture 3 s.h.
- SPAN:4800 Chicano Cinema 3 s.h.
- SPAN:4810 Topics in Latin American Cinema 3 s.h.
- SPAN:4900 Latin American Studies Seminar 3 s.h.

Minor: Portuguese

The minor in Portuguese requires a minimum of 15 s.h. in Portuguese courses, including 12 s.h. in University of Iowa courses numbered PORT:3100 Composition and Conversation or above; credit earned in a University of Iowa study abroad program also may be counted toward the minor. Students must maintain a g.p.a. of at least 2.00 in all courses for the minor and in all UI courses for the minor. Course work in the minor may not be taken pass/nonpass.

Language for General Education

The Department of Spanish and Portuguese offers course sequences that students in all majors may use to satisfy the World Languages requirement of the College of Liberal Arts and Sciences General Education Program (p. 313).

Students who have previous course work or other experience with Spanish should take the online World Languages Placement Test, which helps determine the level at which a student should begin Spanish language study at the University of Iowa. Students should take the test before they register for their first University of Iowa Spanish course. Students with experience in Portuguese may receive individual evaluations from the department.

Spanish

The following course sequences in Spanish satisfy the General Education Program's World Languages requirement. For students without previous knowledge of Spanish, the department recommends the following sequence.

- SPAN:1001 Elementary Spanish I 5 s.h.
- SPAN:1002 Elementary Spanish II 5 s.h.
- SPAN:1501 Intermediate Spanish I 5 s.h.
- SPAN:1502 Intermediate Spanish II 5 s.h.

Those with previous knowledge of Spanish may be able to fulfill the World Languages requirement with the following sequence.

- SPAN:1003 Elementary Spanish Review 5 s.h.
- SPAN:1501 Intermediate Spanish I 5 s.h.
- SPAN:1502 Intermediate Spanish II 5 s.h.

Students should consult a departmental advisor to determine which sequence is best for them.

Portuguese

Only one course sequence in Portuguese fulfills the General Education Program's World Languages requirement. It consists of two intensive courses that combine two semesters into one, so that the sequence is completed in a total of two semesters rather than four. Both courses are open to entering first-year students.

- PORT:2000 Accelerated Elementary Portuguese 5 s.h.
- PORT:2500 Accelerated Intermediate Portuguese 5 s.h.

Related Certificates

International Business

The College of Liberal Arts and Sciences and the Tippie College of Business offer the Certificate in International Business. The program entails study of international business and economics; international relations and institutions; a language; and the art, literature, culture, and/or politics of a geographic area. For detailed information about the certificate see International Business (p. 408) in the Catalog.

Latin American Studies

The department plays an important role in the Latin American Studies Program, which focuses on the history, politics, social organization, economy, art, music, religion, and literature of Latin America. See Latin American Studies (p. 446) in the Catalog for detailed information about the program's undergraduate certificate and minor.

Study Abroad

Spanish

The department participates in study abroad programs in Spain and Latin America; most of these programs offer both summer and semester or yearlong programs. The programs in Spain include the Board of Regents Hispanic Institute program in Valladolid (summer only); USAC (University Studies Abroad Consortium) programs in Alicante, Bilbao, Madrid, and San Sebastián; and CIEE

Portuguese

Minor: Portuguese

The minor in Portuguese requires a minimum of 15 s.h. in Portuguese courses, including 12 s.h. in University of Iowa courses numbered PORT:3100 Composition and Conversation or above; credit earned in a University of Iowa study abroad program also may be counted toward the minor. Students must maintain a g.p.a. of at least 2.00 in all courses for the minor and in all UI courses for the minor. Course work in the minor may not be taken pass/nonpass.

The minor must include a minimum of 3 s.h. earned in course work on Spanish or Spanish American literature or culture, or Hispanic linguistics. One University of Iowa Spanish course taught in English may be counted toward the minor (see list below); remaining courses for the minor must be taught in Spanish, including study abroad courses. Students may not count SPAN:3095 Spanish Composition and Grammar or SPAN:4095 Advanced Spanish Grammar toward the Spanish minor.

The following Portuguese courses are taught in English. Students may count a maximum of one of them toward the minor in Spanish.

- PORT:2000 Accelerated Elementary Portuguese 5 s.h.
- PORT:2500 Accelerated Intermediate Portuguese 5 s.h.
programs in Alcalá de Henares, Alicante, Barcelona, Madrid, Palma de Mallorca, and Seville.

The programs in Latin America include USAC programs in Chile (Santiago) and Costa Rica (Heredia, Puntarenas, and San Ramón); CIEE programs in Argentina (Buenos Aires), Chile (Santiago and Valparaíso), Dominican Republic (Santiago), Mexico (Guanajuato), and Peru (Lima). They also include the CIC Latin America Health, Nutrition, and Environmental Issues Program in Santiago, Dominican Republic. For information about other foreign study programs in Spanish, contact International Programs Study Abroad.

Participation in a number of different programs allows the department to offer study abroad opportunities that take into account a variety of student interests and needs. Credit earned in these or other study abroad programs may be applied toward the requirements for the Spanish major or minor. The amount of credit that may be accepted varies according to the program.

Interested students should contact the department's study abroad advisor. Credit earned in study abroad programs other than those listed above counts as transfer credit and is subject to the 15 s.h. maximum allowed for the major and the 3 s.h. maximum allowed for the minor.

PORTUGUESE
The department offers a seven-week program in Salvador, Bahia, Brazil that includes courses in Portuguese language, culture, and literature. Contact International Programs Study Abroad for details.

Graduate Programs of Study
- Master of Arts in Spanish
- Master of Fine Arts in Spanish creative writing
- Doctor of Philosophy in Spanish

Master of Arts
The Master of Arts program in Spanish requires 30 s.h. of graduate credit. Students choose one of two emphases: literature, which provides training in literary analysis and broad knowledge of representative works in principal areas of Hispanic literature; or linguistics, which provides training in linguistic analysis and argumentation and broad knowledge of the principal subfields of Hispanic linguistics. Applicants to the M.A. program should have completed the equivalent of the undergraduate Spanish major with a g.p.a. of at least 3.00 in course work for the major.

A maximum of 9 s.h. of graduate credit in approved courses may be transferred from other institutions toward the 30 s.h. required for the M.A.

The M.A. requires the following 10 courses.

LITERATURE EMPHASIS COURSES
One of these:
- SPAN:6000 Foreign Language Teaching Methods 3 s.h.
- WLLC:5000 Teaching and Learning Languages 3 s.h.

All of these:
- One course in literature numbered SPAN:4000 or above 6 s.h.
- Two courses in Spanish (peninsular) literature numbered SPAN:4000 or above 6 s.h.
- Two courses in Spanish American literature numbered SPAN:0000 or above 6 s.h.
- One course in literary theory 3 s.h.
- Three electives 9 s.h.

At least eight of the ten literature emphasis courses must be taken in Department of Spanish and Portuguese courses numbered 5000 or above. The remaining two may be taken either in the Department of Spanish and Portuguese courses numbered 4000 or above or in courses offered by related departments, subject to approval by the director of graduate studies.

LINGUISTICS EMPHASIS COURSES
One of these:
- SPAN:6000 Foreign Language Teaching Methods 3 s.h.
- WLLC:5000 Teaching and Learning Languages 3 s.h.

All of these:
- One course in Spanish or Spanish American literature numbered SPAN:4000 or above 3 s.h.
- Two courses in syntax 6 s.h.
- Two courses in phonetics/phonology 6 s.h.
- One course in history of the Spanish language or language variation 3 s.h.
- One course in applied linguistics or language acquisition 3 s.h.
- Two electives 6 s.h.

At least six of the ten linguistics emphasis courses must be taken in Department of Spanish and Portuguese courses numbered 5000 or above. The remaining four may be taken in Department of Spanish and Portuguese courses numbered 4000 or above or in Department of Linguistics courses.

LANGUAGE TOOL REQUIREMENT
M.A. students must complete the equivalent of one year of college-level study of any approved second foreign language; Portuguese is highly recommended. They may satisfy this requirement either by examination or through courses taken at the University of Iowa or another accredited university; such course work does not count toward the 30 s.h. required for the M.A.

EXAMINATIONS
The M.A. comprehensive examination includes written and oral components. The written portion consists of a two-hour examination in each of three areas; an oral examination follows, usually lasting 90 minutes. The examining committee is composed of four departmental faculty members.

Students in the literature emphasis may choose to be examined in three literature areas or in two literature areas and one linguistics area. At least one literature area must be in Spanish literature and at least one must be in Spanish American literature. If three literature areas are chosen, at least one must represent literature written before 1700 (peninsular or Spanish American).

Students in the linguistics emphasis may choose to be examined in three linguistics areas or in two linguistics areas and one literature area. At least one of the
linguistics areas must be in syntax or phonology. For students in both emphases, the third examination area may be a film area.

For reading lists, contact the Department of Spanish and Portuguese.

**Master of Fine Arts**

The Master of Fine Arts in Spanish creative writing requires 48 s.h. of graduate credit earned over four semesters in residence at the University of Iowa. Students complete courses in writing, including several workshops, and other relevant course work. They also are required to participate in several outreach workshops in the community and to do a final public reading in the spring semester of their second year. Work toward the degree culminates in a creative thesis.

Students must enroll in SPAN:6210 Fiction Workshop, SPAN:6220 Poetry Workshop, and SPAN:6241 Creative Project Development during each year of residence in the program. Groups of 8-12 students read and critique each other's work in these courses.

Students must take one workshop course chosen from these:

- SPAN:6235 Film Script/Theater Workshop 3 s.h.
- SPAN:6280 Nonfiction Workshop 3 s.h.

All of these:

- Four graduate-level courses offered by the Department of Spanish and Portuguese
- Four additional courses offered by the Department of Spanish and Portuguese, Center for the Book, Creative Writing Program (Iowa Writers' Workshop), Comparative Literature Program, or International Writing Program

**THESIS**

Students submit their graduate thesis, a manuscript of substantial length, during their last semester and must enroll in SPAN:6299 Thesis: Creative Writing. The thesis committee is composed of at least three members: two faculty members in the Spanish creative writing program and a third Department of Spanish and Portuguese faculty member who is not part of the creative writing program, or a faculty member from one of the related units—Center for the Book, the Creative Writing Program (Iowa Writers' Workshop), the Comparative Literature Program, or the International Writing Program.

**Doctor of Philosophy**

The Doctor of Philosophy program in Spanish requires a total of at least 72 s.h. of graduate credit. Ph.D. students choose from two programs; one is dedicated to Hispanic literatures, the other to Hispanic linguistics. The literature program trains students in textual analysis and literary history, criticism, and theory. The linguistics program provides training in linguistic analysis and theory.

The literature program requires a minimum of 66 s.h. of course work (22 courses), of which 30 s.h. may have been earned for an M.A. in Spanish at the University of Iowa or at another institution, as approved by the director of graduate studies.

The linguistics program requires a minimum of 57 s.h. of course work (19 courses), of which 30 s.h. may have been earned for an M.A. in Spanish at the University of Iowa or at another institution, as approved by the director of graduate studies.

Both programs also require 6 s.h. earned in SPAN:6999 Thesis, to complete the 72 s.h. required for the Ph.D.

Course requirements for each program are as follows.

**LITERATURE TRACK: COURSES**

Students must complete at least 36 s.h. (12 courses) beyond the master's degree (or 22 courses beyond the bachelor's degree). The following courses are required; courses taken for the M.A. may be used to meet part of this requirement.

<table>
<thead>
<tr>
<th>Course Description</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPAN:6999 Thesis</td>
<td>3-15 s.h.</td>
</tr>
<tr>
<td>Two courses in literary theory</td>
<td>6 s.h.</td>
</tr>
<tr>
<td>Three courses in Spanish literature, at least one of which must be pre-1700 literature</td>
<td>9 s.h.</td>
</tr>
<tr>
<td>Three courses in Spanish American literature</td>
<td>9 s.h.</td>
</tr>
<tr>
<td>One course in cinema</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>Two 7000-level seminars in literary studies</td>
<td>6 s.h.</td>
</tr>
<tr>
<td>One literature course in another Romance language (see “Language and Literature Tool Requirements”)</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

Each student's plan of study is tailored to his or her area of emphasis and must be approved by the student's advisory committee. Ph.D. course work in Spanish (taken after the M.A.) must be numbered 6000 or above, except the Romance literature course taken for the language tool requirement.

**LITERATURE TRACK: LANGUAGE AND LITERATURE TOOL REQUIREMENTS**

Before the comprehensive examination, students must complete the equivalent of three years of college-level study in another Romance language and become well acquainted with its literature in limited areas of specialization; the study of Luso-Brazilian literature is highly recommended. This requirement may be satisfied only through course work at the University of Iowa or another accredited university.

Students also must complete the equivalent of one year of college-level study of another approved foreign language. Students who do not fulfill the Romance language requirement with Portuguese must use it to satisfy this requirement. Students who will write dissertations on topics in Spanish or Portuguese literature before 1700 are strongly encouraged to select Latin, Arabic, or an Amerindian language to satisfy this requirement; students should consult specialists in their field to determine which language is most appropriate. Students may take more than two languages, earning more than the 72 s.h. required for the degree, if their literary course work permits.

Students may satisfy the language tool requirement by examination or by course work at the University of Iowa or at another accredited university; language tool course work does not count toward the 72 s.h. required for the degree. Courses taken to fulfill the language tool requirements may be taken pass/nonpass. If the language tool requirements are satisfied by examination, the exam results must be documented in the student's file. Courses
taken to fulfill the second Romance literature requirement must be taken for grades and may be counted toward the degree.

**LINGUISTICS TRACK: COURSES**
Students must earn at least 27 s.h. (9 courses) beyond the master's degree (or 19 courses beyond the bachelor's degree). The following courses are required; courses taken for the M.A. may be used to meet part of this requirement.

- **SPAN:**
  - **SPAN:6110 Spanish Phonology** 3 s.h.
  - **SPAN:6120 Spanish Syntax** 3 s.h.
  - **SPAN:6150 Topics in Spanish Language** 3 s.h.
  - **SPAN:6190 Topics in Comparative Romance Linguistics** 3 s.h.
  - **SPAN:6999 Thesis** 13-15 s.h.
  - **LING:3005 Articulatory and Acoustic Phonetics** 3 s.h.
  - **LING:5010 Introduction to Syntax** 3 s.h.
  - **LING:5020 Introduction to Phonology** 3 s.h.
  - **LING:6010 Syntactic Theory** 3 s.h.

- One additional course in the dissertation research area 3 s.h.
- One course in historical linguistics, sociolinguistics/language variation, or language acquisition/psycholinguistics 3 s.h.
- One Hispanic linguistics seminar numbered 7000 or above 3 s.h.

The additional course in the dissertation research area (phonology, syntax, language acquisition, language variation) must be offered by the Department of Spanish and Portuguese or the Department of Linguistics.

Each student's plan of study is tailored to his or her area of emphasis and must be approved by the student's advisory committee. Ph.D. course work in Spanish (taken after the M.A.) must be numbered 6000 or above, except for some courses offered by the Department of Linguistics and the required third-year-level course in Portuguese (see "Linguistics Track: Language Tool and Additional Requirements" below).

**LINGUISTICS TRACK: LANGUAGE TOOL AND ADDITIONAL REQUIREMENTS**
Students in the linguistics track must complete the equivalent of three years of college-level study of Portuguese, and the equivalent of one year of college-level study of each of two other languages. For students specializing in historical linguistics, one of those two languages must be Latin.

Students may satisfy the language tool requirement by examination or by course work at the University of Iowa or at another accredited university. Courses taken to fulfill the language tool requirements may be taken pass/nonpass. If the language tool requirements are satisfied by examination, the exam results must be documented in the student's file. The language tool course work does not count toward the 57 s.h. of prethesis course work required for the degree, except the third-year-level course work in Portuguese, which may be counted with the faculty advisor's approval if the student took it for a grade.

Students in the linguistics track also must write two extended research papers and give two colloquium presentations based on these papers. The first paper must be in an area distinct from the intended dissertation research; it must be approved by the student's advisory committee by the end of fall semester of the second year of Ph.D. course work in order for the student to continue in the program. The second paper must be in the dissertation research area, must be of publishable quality, and must be approved by the student's advisory committee no later than the beginning of the semester in which the student takes the comprehensive exam.

**COMPREHENSIVE EXAMINATION**
The purpose of the Ph.D. comprehensive examination is to determine whether the student has gained sufficient breadth and depth of research knowledge in Hispanic literatures or linguistics to enter the profession as a teacher-scholar. The examining committee is composed of five departmental faculty members or four departmental faculty members and a fifth faculty member from a related department.

**Literature Track**
The literature track's comprehensive exam has written and oral components.

The written component includes four elements: two broad areas, one specialized area, and one article. Each element is supervised by a different committee member.

The two broad areas comprise lists of approximately 40 readings, with each list covering an established historical period that is tied to the student's Ph.D. course work (one Peninsular, the other Spanish American). The lists must be approved by the supervisor before distribution to the rest of the committee. Each area is evaluated with a three-hour written exam, which is discussed during the student's oral exam.

The specialized area's reading list includes 25-40 secondary works that define the area and are related to the dissertation. The area is examined via a 15-20 page position paper, which is a critical synthesis of the secondary readings and normally becomes part of the dissertation introduction. The list and the paper must be written in consultation with a faculty supervisor and must be approved by the supervisor at least one month before the oral exam.

The article is a 20-25 page research essay, usually a revised version of a paper written for one of the two required seminars numbered 7000 or above. The article should be written in consultation with the professor who taught the seminar and with a faculty supervisor; if the professor who taught the course also supervises the area, the student must consult with at least one more professor. The article must be approved by the supervisor at least one month before the oral exam.

The oral exam lasts two hours, with approximately half devoted to the two broad areas and half to the article and the position paper.

**Linguistics Track**
The comprehensive exam for the linguistics track includes written and oral components. The written component comprises two weekend take-home exams consisting of linguistic analysis in two subdisciplines distinct from the subdiscipline of the intended dissertation research. The two-hour oral exam consists of one hour devoted to discussion of the second research paper and the other hour devoted to follow-up questions on the written exams.
Graduate Study Loads

Maximum course registration for all graduate students is 15 s.h. of graduate-level course work in fall or spring semesters and 12 s.h. of graduate-level work in summer sessions. Students with one-quarter-time and one-third-time teaching assistantships are permitted to register for the maximum study loads. Students who hold one-half-time assistantships are permitted to register for a maximum of 12 s.h. in fall and spring semesters and 6 s.h. in summer sessions. Students must have approval from the Graduate College to register for additional semester hours.

The minimum course registration is 2 s.h. for all graduate students. Doctoral students who have passed the comprehensive examinations typically register for 2 s.h. of thesis work to satisfy the minimum registration requirement. Students who fail to register for 36 months must apply for readmission to the Graduate College.

Financial Support

Teaching and research assistantships are available to qualified graduate students. Usually, two years of support are available for completion of the M.A. and four years beyond the receipt of the M.A. for the Ph.D. Applications for financial support should be made directly to the Department of Spanish and Portuguese.

Dissertation

After the Ph.D. comprehensive examination is completed, the candidate submits a dissertation prospectus for the dissertation committee's approval. The dissertation committee is composed of five faculty members; at least four committee members must be from the Department of Spanish and Portuguese.

All doctoral dissertations must be submitted to the Graduate College in electronic format.

The dissertation, complete and in final form, must be submitted in the required electronic format at the Graduate College office by the first-deposit deadline date of the session in which the degree is to be conferred. The final deposit of the approved dissertation in electronic format must be deposited at the office by the appropriate deadline in the student's graduation semester.

Students must adhere to the Graduate College regulations regarding preparation of the dissertation copy; consult the Graduate College. For information on the dissertation and final examinations, see the Manual of Rules and Regulations of the Graduate College.

Courses

Spanish and Portuguese language courses are open to all students who have satisfied the specified course prerequisites.

Basic Spanish, Lower-Level Undergraduate

Students must have permission from the chair of the Department of Spanish and Portuguese to take an elementary course for credit after having completed a higher-level course for which the elementary course or its equivalent is a prerequisite.

SPAN:1000 First-Year Seminar 1-2 s.h.
Small discussion class taught by a faculty member; topics chosen by instructor; may include outside activities (e.g., films, lectures, performances, readings, visits to research facilities, field trips). Requirements: first- or second-semester standing.

SPAN:1001 Elementary Spanish I 5 s.h.

SPAN:1002 Elementary Spanish II 5 s.h.

SPAN:1003 Elementary Spanish Review 5 s.h.

SPAN:1501 Intermediate Spanish I 5 s.h.
Communication in speaking and writing; cultural topics. Taught in Spanish. Prerequisites: SPAN:1002 or SPAN:1003. GE: World Languages Second Level Proficiency.

SPAN:1502 Intermediate Spanish II 5 s.h.
Continuation of SPAN:1501. Prerequisites: SPAN:1501. GE: World Languages Fourth Level Proficiency.

SPAN:1503 Accelerated Intermediate Spanish 6 s.h.
Course sequence SPAN:1501 and SPAN:1502 in one semester. Prerequisites: SPAN:1002 or SPAN:1003. GE: World Languages Fourth Level Proficiency.

SPAN:1504 Spanish for Healthcare Providers 3 s.h.
Intermediate Spanish with emphasis on oral communication for health care providers. Prerequisites: SPAN:1501. GE: World Languages Fourth Level Proficiency.

SPAN:1600 Exploring Latino Culture: Music, Food, and Salsa 1 s.h.
Exploration of rich diversity of Latino culture in Iowa; may attend cultural celebrations, visit Latino resources on campus, meet Latino student leaders and faculty from the Spanish department, learn about study abroad and careers involving Spanish language skills.

SPAN:1610 Hispanic Cultural Activities
Attendance
Attendance at Spanish literary readings, scholarly presentations, and Hispanic cultural events on the University of Iowa campus and in Iowa City; features visiting, local, and University of Iowa writers, filmmakers, artists, and scholars.

SPAN:1700 Latino/a Literature in the U.S.
Introduction to growing cultural production of varied Latino communities (e.g., Chicano, Puerto Rican American/Nuyorican, Cuban American) that have a strong presence in the United States; recent cultural production from borderland transcultural spaces with physical, cultural, economic, political, and mythical elements; visions of the United States from contemporary Latin American writers who recently have become U.S. residents. Taught in English. GE: Literary, Visual, and Performing Arts; Values, Society, and Diversity.

SPAN:1800 Contemporary Spanish American Narrative
Themes and narrative techniques in major texts, 1960-present; overview of cultural, sociopolitical aspects. Taught in English, readings in English. Prerequisites: ENGL:1200. GE: Literary, Visual, and Performing Arts.

SPAN:1900 Diversity and Cultures in Spain
Introduction to diversity of cultures within Spain; political, social, and economic background, cultural movements. Taught in English. GE: Values, Society, and Diversity.

Spanish Level 1, Lower-Level Undergraduate
Students should take these courses at the start of the Spanish major.

SPAN:2000 Spanish Language Skills: Writing
Bridge from second-year Spanish to more advanced courses in Spanish language, linguistics, and literature; emphasis on skill development in writing, critical reading in Spanish, and oral communication. Taught in Spanish. Prerequisites: SPAN:1502 or SPAN:1503.

SPAN:2005 Writing Global Spanish
Spanish in the digital age; linguistic varieties of Spanish spoken globally; emphasis on skill development in writing, critical reading in Spanish, and oral communication. Taught in Spanish. Prerequisites: SPAN:1502 or SPAN:1503.

SPAN:2010 Spanish Language Skills: Speaking
Development of conversational proficiency and cultural competence through action learning; strategic role playing and creative language use based on everyday situations in Hispanic cultures; composition skills and grammar review. Prerequisites: SPAN:1502 or SPAN:1503.

SPAN:2020 Hispanic Institute: Language
Grammar essentials, written exercises, short compositions, conversational activities. Prerequisites: SPAN:1502 or SPAN:1503.

SPAN:2030 Study of Language: Myths and Concepts
How linguists look at language; basic concepts of linguistics and grammar. Prerequisites: SPAN:1502 or SPAN:1503.

SPAN:2040 Spanish for Heritage Speakers
Development of reading and writing skills for bilingual students who have acquired listening and speaking skills in Spanish; review of grammar and registers of use.

SPAN:2050 Spanish in the U.S.
Issues related to Spanish in the United States; aspects of linguistics and sociolinguistics inherent to the existence and proliferation of Spanish in the United States. Taught in English.

SPAN:2060 Spanish Pronunciation
Pronunciation as a key element of communication in a second language; self evaluation of pronunciation in Spanish; how sounds differ between English and Spanish; analysis of pronunciation; production exercises. Prerequisites: SPAN:1502 or SPAN:1503.

SPAN:2090 Medical Spanish in Contemporary Society
Vocabulary related to medical field; grammatical concepts; health-related cultural competence; discussion of health issues concerning Hispanic communities in the U.S. and abroad. Prerequisites: SPAN:1502 or SPAN:1503 or SPAN:1504.

SPAN:2200 Introduction to Spanish American Cultures
Introduction to study of cultural history of Spanish America; topics range from precolombian times to present; for students who are just starting work on the Spanish major or minor. Prerequisites: SPAN:1502 or SPAN:1503.

SPAN:2280 Introduction to Latina/o Studies
Introduction to field of Latina/o studies through interdisciplinary readings from literature, history, sociology, political science, urban studies, and anthropology; commonalities and differences among long-standing Latina/o populations (Mexican Americans, Puerto Ricans, Cuban Americans); challenges faced by newer arrivals (Dominican Americans, Salvadoran Americans, Guatemalan Americans, Central and South American immigrants). Same as HIST:2280.

SPAN:2300 Introduction to Reading Literature
Close readings of literary texts from Spain and Spanish America; basic concepts of genre (narrative, poetry, theater, essay); writing about literature. Prerequisites: SPAN:1502 or SPAN:1503.
Spanish Level 2, Upper-Level Undergraduate and Graduate

Students should have at least one Level 1 course before starting these courses. Some courses have additional prerequisites.

Language Skills

SPAN:3000 Writing Skills for Heritage Speakers 3 s.h.
Development of writing skills in Spanish, focus on expository writing for academic purposes. Requirements: at least two courses taught in Spanish at the 2000 level or above.

SPAN:3010 Advanced Spanish Speaking and Writing 3 s.h.
Development of oral proficiency; secondary emphasis on continuing development of writing skills; cultural knowledge of several Spanish-speaking countries. Requirements: two courses taught in Spanish at the 2000 level or above.

SPAN:3020 Journalistic Writing in Spanish 3 s.h.
Spanish writing skills; introduction to style and practice of journalistic reporting and writing. Requirements: at least one course taught in Spanish at the 2000 level or above.

SPAN:3030 Translation Workshop: English to Spanish 3 s.h.
Introduction to translation theory and effective translation processes; examination of potential translation problems in specific areas of English to Spanish translation; primary focus on nonfiction. Requirements: at least one course taught in Spanish at the 2000 level or above.

SPAN:3040 Business Spanish 3 s.h.
Clear, concise business writing; emphasis on linguistic and cultural proficiency. Requirements: at least one course taught in Spanish at the 2000 level or above.

SPAN:3050 Translation Workshop: Spanish to English 3 s.h.
Spanish to English literary translation; meaning, form and equivalence, authenticity; questions of untranslatability. Requirements: at least one course taught in Spanish at the 2000 level or above.

SPAN:3060 Introductory Workshop on Creative Writing in Spanish 3 s.h.
Development of writing skills in Spanish through creative writing. Taught in Spanish. Prerequisites: SPAN:2000 or SPAN:2010 or SPAN:2020 or SPAN:2030 or SPAN:2040 or SPAN:2050 or SPAN:2060 or SPAN:2200 or SPAN:2280 or SPAN:2300 or SPAN:2400 or SPAN:2500 or SPAN:2700 or SPAN:2800 or SPAN:2900 or SPAN:2910.

SPAN:3080 Advanced Business Spanish 3 s.h.
Tools for effective business communication, building on concepts learned in SPAN:3040; linguistic, sociolinguistic, practical skills for effective oral and written communication developed through discussion of business case studies, presentations, meetings; selected Spanish and Latin American companies examined through varied media, including news and Internet; role of transaction intermediaries in international trade. Prerequisites: SPAN:3040.

SPAN:3095 Spanish Composition and Grammar 3 s.h.
Development of three types of compositions; selected readings and comprehension activities; vocabulary expansion; grammar review with exercises. Requirements: good proficiency in written and oral Spanish based on several university-level Spanish courses and study abroad experience in a Hispanic country.

Hispanic Linguistics

SPAN:3100 Structures of Spanish: Words and Sentences 3 s.h.
Basic concepts and methods for analysis of linguistics as applied to Spanish word formation (morphology), sentence patterns (syntax), and semantic interpretation. Requirements: at least one course taught in Spanish at the 2000 level or above.

SPAN:3110 Spanish Sound Structure 3 s.h.
Articulation of Spanish sounds—description and practice; how Spanish sounds are organized into classes, relations among the different classes, how they are implemented in context, patterns they exhibit. Requirements: at least one course taught in Spanish at the 2000 level or above.
SPAN:3120 Foundations in Sociolinguistics 3 s.h.
Dialects, speech communities, variation, choosing a code, solidarity and politeness, language and gender, language planning. Requirements: at least one course taught in Spanish at the 2000 level or above.

SPAN:3130 Introduction to Bilingualism 3 s.h.
Psycholinguistic and sociolinguistic aspects of bilingualism; language usage, maintenance, attitudes, shift, transfer, loss; code-switching. Requirements: at least one course taught in Spanish at the 2000 level or above.

SPAN:3150 Spanish Applied Linguistics 3 s.h.
Concepts of linguistic analysis applied to Spanish; focus on problematic areas of Spanish grammar, lexicon, semantics; introduction to cross-cultural pragmatics; connections between language learning and technology and assessment; ideal for future teachers of Spanish. Requirements: at least one course taught in Spanish at the 2000 level or above.

SPAN:3170 Introduction to Spanish Language Acquisition 3 s.h.
Basic principles of language acquisition theory applied to learning Spanish as a first or second language. Requirements: at least one course taught in Spanish at the 2000 level or above. Recommendations: completion of SPAN:3100.

SPAN:3190 Psycholinguistic Aspects of Bilingualism 3-4 s.h.
Interaction of two languages in a bilingual in terms of sound system, words, and grammar; different meanings of bilingualism, how bilingualism and multilingualism can change across lifespan. Requirements: linguistics or language acquisition course. Same as FREN:3190.

Spanish American Literature and Culture

SPAN:3200 Cultures of Spanish America 3 s.h.
Pre-Columbian, colonial, modern periods; socioeconomic structure, form of government, culture. Requirements: at least one course taught in Spanish at the 2000 level or above.

SPAN:3220 Visual Culture: Colonial Spanish America 3 s.h.
Intersection between written word and visual culture in colonial Spanish America; imperialism, native culture, violence and race in codices, paintings, maps and illustrations. Requirements: at least one course taught in Spanish at the 2000 level or above.

SPAN:3230 Modern Mexico 3 s.h.
Twentieth-century Mexican cultural history, including nationalism, gender relations, indigenous cultures, border issues, and popular culture; materials range from journalistic and literary writing to film, music, images, and television. Requirements: at least one course taught in Spanish at the 2000 level or above.

SPAN:3270 Pan-Caribbean Literary Currents 3 s.h.
Twentieth-century fiction, film, and cultural practices in the Hispanic, Francophone, and Anglophone Caribbean; cultural essays to complement literary readings; pan-Caribbean cultural practices—music and carnival celebrations. Taught in English. Requirements: for CL:3262 — junior or senior standing; for SPAN:3270 — two literature courses. Same as CL:3262.

SPAN:3290 Topics in Cinema and Society 3 s.h.
Concept of national cultures examined through film history in one Latin American nation. Requirements: at least one course taught in Spanish at the 2000 level or above.

SPAN:3300 Contemporary Spanish American Fiction 3 s.h.
Major 20th-century short-story writers and novelists (Borges, Cortázar, Fuentes, García-Márquez, Rulfo, etc.) through representative works. Requirements: at least one course taught in Spanish at the 2000 level or above.

SPAN:3310 Spanish American Short Story 3 s.h.
Works by 19th- and 20th-century Spanish American writers; emphasis on reading strategies and historical, cultural, literary backgrounds. Requirements: at least one course taught in Spanish at the 2000 level or above.

SPAN:3320 Spanish American Poetry 3 s.h.
Poetry as a literary genre, short history of its development, early forms in Spanish America, poets from Modernism to present; readings from writers including Rubén Darío, Pablo Neruda, César Vallejo, Octavio Paz, J.L. Borges. Requirements: at least one course taught in Spanish at the 2000 level or above.

SPAN:3350 Introduction to Spanish American Literature 3 s.h.
Comprehensive view of 20th-century literature from Spanish-speaking countries in the Americas, including narrative and poetry; examination of issues related to texts and contexts through written and oral analysis. Requirements: at least one course taught in Spanish at the 2000 level or above.

SPAN:3360 Latin American Women Writers 3 s.h.
Focus on 20th century; how Latin American women subjects view themselves through literature; textual practice specific to women; psychoanalytic approaches, contemporary feminist criticism. Requirements: at least one course taught in Spanish at the 2000 level or above. Same as GWSS:3360.

SPAN:3370 Topics in Literatures and Cultures 3 s.h.
Literature and culture of specific regions, countries, or cities of Latin America. Requirements: at least one course taught in Spanish at the 2000 level or above.

SPAN:3400 Chicano Literature and Culture 3 s.h.
Recent fiction and poetry by Chicano and Chicana writers; readings in Spanish and English. Taught in Spanish. Requirements: at least one course taught in Spanish at the 2000 level or above.

SPAN:3420 Cuban American Literature and Culture 3 s.h.
Experiences of Cuban exiles in the United States; emergence of a literature and culture based on sense of dispossession, marginality, and memory of island past. Taught in English. Prerequisites: ENGL:1200. GE: Values, Society, and Diversity. Same as CL:3396.

**SPAN:3440 Topics in Latino/a Literature and Culture** 3 s.h.
Examination of special topics in interdisciplinary field of Latina/o studies. Taught in English. Requirements: one course taught in Spanish at the 2000 level or above.

**SPAN:3500 Topics in Culture of the Hispanic World** 3 s.h.
Specific topics; culture of different parts of Spanish-speaking world, or cross-regional or cross-national cultural phenomenon. Requirements: at least one course taught in Spanish at the 2000 level or above.

**SPAN:3520 Introduction to Film Studies** 3 s.h.
Introduction to film analysis and theory; focus on Latin American and Spanish cinemas in context of international film history. Requirements: at least one course taught in Spanish at the 2000 level or above.

**SPAN:3550 Doing Business in the Spanish-Speaking World** 3 s.h.
Preparation for careers in business, international relations, and other professions involving business activities in international or U.S. Hispanic environments; raise awareness in domain of international business and political systems and meeting challenges of a global economy and international cooperation. Requirements: at least one course numbered SPAN:2000 or above.

### Spanish Literature and Culture

**SPAN:3600 Cultures of Spain** 3 s.h.
Political, religious, social, economic background; important cultural, literary movements. Requirements: at least one course taught in Spanish at the 2000 level or above.

**SPAN:3610 Hispanic Institute: Culture** 3 s.h.
Overview of geography, history (political, economic, social), architecture, painting, music of Spain; readings, slides, video and audio cassettes, visits to local sites of cultural significance. Prerequisites: SPAN:1502 or SPAN:1503.

**SPAN:3620 Madrid** 3 s.h.
Contemporary Madrid as one of the premier capital cities of the European Union; history and present day reality of the city; examination of paintings, descriptions, movies, fashion, and customs from several historical periods. Requirements: at least one course taught in Spanish at the 2000 level or above.

**SPAN:3630 Spanish Youth Culture** 3 s.h.
Literary texts, films, and music produced by young people in Spain from 1939 to present; gender issues and relationships between market, popular culture, and high culture. Requirements: one course taught in Spanish at the 2000 level or above.

**SPAN:3690 Iowa Global Internship in Madrid** 3 s.h.
Intensive language and eight-week internship in Madrid through the Tippie College of Business Madrid Internship Program; writing an extensive report in Spanish. Requirements: at least two courses taught in Spanish at the 2000 level or above.

**SPAN:3700 The Cid in History and Legend** 3 s.h.
Rodrigo Diaz de Vivar, el Cid, in history and legend; changing perceptions of the Cid from the 13th century to the present. Requirements: one literature course taught in Spanish at the 2000 level or above.

**SPAN:3750 Literature in the Time of Cervantes** 3 s.h.
Introduction to literary questions of 15th to 17th centuries in Spain; understanding of literary Spanish and cultural issues of the period—end of the feudal mind, beginning of individualism, poetry, emergence of theater, crisis of empire. Requirements: at least one course taught in Spanish at the 2000 level or above.

**SPAN:3790 Hispanic Institute: Literature** 3 s.h.
Introduction to poetry, narrative, and theater in Spanish literature; textural commentary and critical interpretations of major representative works of selected historical periods. Prerequisites: SPAN:1502 or SPAN:1503.

**SPAN:3802 Modern and Contemporary Spanish Literature** 3 s.h.
Works of the last 30 years of the 19th century, up to the outbreak of the Spanish Civil War; Realism, Naturalism, generation of 1898, generation of 1913, generation of 1927. Requirements: at least one course taught in Spanish at the 2000 level or above.

**SPAN:3830 Spanish Literature of the Transition** 3 s.h.
Literary production of the transition in post-Franco Spain; works by Carmen Martin Gaite, Luis Garcia Montero, Pedro Almodovar, others. Requirements: at least one course taught in Spanish at the 2000 level or above.

**SPAN:3840 Contemporary Spanish Short Story** 3 s.h.
Contemporary short stories from 20th- and 21st-century Spain; emphasis on reading strategies and interpretation skills; focus on historical and social contexts. Requirements: at least one course taught in Spanish at the 2000 level or above.

### Spanish Level 3, Upper-Level Undergraduate and Graduate

Undergraduates should take the following courses during their last semesters of enrollment. These courses are also open to M.A. students. All of these courses require a research paper. Prerequisites vary.
SPAN:4095 Advanced Spanish Grammar 3 s.h.
Deep and broad high-level grammar review featuring textbook analysis and examples, instructor's commentary, and relevant written exercises on problematic areas of vocabulary and grammar in written international standard Spanish. Requirements: high communicative proficiency in written and oral Spanish based on extensive experience in classroom and the real world (e.g., completion of major in Spanish, and study or residence abroad in Hispanic countries or equivalent).

SPAN:4100 Introduction to Spanish Phonology 3 s.h.
Sound patterns of Spanish; how various theoretical approaches solve basic problems in Spanish phonology; identification of linguistic universals, how they are manifested in the sound structure of Spanish. Prerequisites: SPAN:3100. Same as SLA:4301.

SPAN:4120 Spanish Word Formation 3 s.h.
Basic principles of morphology (derivational and inflectional) applied to analysis of Spanish complex word formation; extensive practice in morphological analysis. Prerequisites: SPAN:3100.

SPAN:4140 History of the Spanish Language 3 s.h.
Development of phonetic, morphological, syntactical properties of the Spanish language from its Latin roots; emphasis on internal history and process of expansion from a minor dialect (Castilian) to a significant world language. Prerequisites: SPAN:3100 or SPAN:3110.

SPAN:4150 Introduction to Spanish Syntax 3 s.h.
Basic principles of generative syntax as applied to analysis of Spanish syntactic structure; extensive syntactic analysis. Prerequisites: SPAN:3100. Same as SLA:4300.

SPAN:4170 Linguistic Aspects of Second Language Acquisition 3 s.h.
Theoretical linguistic approaches to acquisition of Spanish as a second language. Prerequisites: SPAN:3100 or SPAN:3110 or SPAN:3170.

SPAN:4190 Topics in Hispanic Linguistics 3 s.h.
Requirements: completion of at least one Hispanic linguistics course.

SPAN:4310 Cultural Identity in Caribbean Literature 3 s.h.
Main currents in Caribbean literature; primary focus on Hispanic Caribbean; may include americano literario, poesia negra, testimonial narrative; Caribbean cultural context in music, humor, Afro-Caribbean rituals. Requirements: two literature courses in Spanish, at least one of which must be numbered SPAN:3300 or above.

SPAN:4330 Colonial Spanish American Literature 3 s.h.
Readings from the formative period of Spanish American culture; may include discovery and conquest, ethnicity and gender, dissent and popular resistance. Requirements: two literature courses in Spanish, at least one of which must be numbered SPAN:3300 or above.

SPAN:4350 Twentieth-Century Spanish American Theater and Performance 3 s.h.
Introduction to 20th-century Spanish American theater; study of five major playwrights; readings of plays with analysis of performances. Requirements: two literature courses in Spanish, at least one of which must be numbered SPAN:3300 or above.

SPAN:4360 The Orient in Contemporary Latin American Literature and Culture 3 s.h.
Orientalism, cultural hybridity, racial and gender construction in contemporary Latin American literature and culture; Latin American identity in era of globalization. Requirements: two literature courses in Spanish, at least one of which must be numbered SPAN:3300 or above.

SPAN:4370 Literature and Mass Culture in Latin America 3 s.h.
Examination of literature in relation to other media in Latin America in the 20th century; close readings of novels, short stories, and essays analyzed in combination with film clips, photographs, music, and blogs. Requirements: two literature courses taught in Spanish, at least one of which must be numbered SPAN:3300 or above.

SPAN:4380 Narratives of Underdevelopment 3 s.h.
Works of Spanish American narrative and essay that illuminate questions of geo-political inequality and national consolidation; readings examined in relationship to Latin American social theory in a historical context. Requirements: two literature courses in Spanish, at least one of which must be numbered SPAN:3300 or above.

SPAN:4390 Topics in Spanish American Literature 3 s.h.
Requirements: two literature courses in Spanish, at least one of which must be numbered SPAN:3300 or above.

SPAN:4620 Spanish Golden Age Fiction 3 s.h.
Literature and society in first centuries of Spanish Modernity, Renaissance and Baroque periods, love and the self, alienation, utopias, the body and morals, cultural dimensions of genres. Requirements: two literature courses in Spanish, at least one of which must be numbered SPAN:3300 or above.

SPAN:4630 Society and Poetry: Spanish Lyric 3 s.h.
Twentieth-century Spanish lyric poetry in its sociocultural context. Requirements: two literature courses in Spanish, at least one of which must be numbered SPAN:3300 or above.

SPAN:4650 Don Quijote 3 s.h.
Exploration of Cervantes' Don Quijote; sociohistorical context, questions of human existence, literary tradition, metafiction, influence of Don Quijote on novelists and filmmakers, critical reception of the text. Requirements: two literature courses in Spanish, at least one of which must be numbered SPAN:3300 or above.

SPAN:4690 Topics in Spanish Literature 3 s.h.
Requirements: two literature courses in Spanish, at least one of which must be numbered SPAN:3300 or above.
SPAN:4800 Chicano Cinema 3 s.h.
History of Chicano independent and industry film and television production since the Chicano political and cultural movement began in the 1960s. Taught in English. Requirements: one Spanish literature or culture course numbered SPAN:3200 or above, or one film studies course numbered CL:2100 or above. Same as CINE:4678.

SPAN:4810 Topics in Latin American Cinema 3 s.h.
Taught in English. Requirements: one Spanish literature or culture course numbered above SPAN:3200 or one film studies course. Same as CINE:4690.

SPAN:4820 Latino/a Popular Culture 3 s.h.
Role of Latino/a popular culture as a site of contemporary social practice and cultural politics in both local and global contexts; specific attention to notions of citizenship, identity, and culture. Requirements: one literature or culture course taught in Spanish numbered SPAN:3200 or above.

SPAN:4830 The Hispanic World in the Digital Era 3 s.h.
Global digital space and construction of culture in Hispanic world; how digital data creates knowledge and ways it represents and impacts societies; power of computer technology to disseminate critical thinking, social outreach, and creative expressions; how digital realities and tools of constant communication promote change. Requirements: two literature or culture courses in Spanish, at least one of which must be numbered SPAN:3300 or above.

SPAN:4850 Topics in Cultural Studies 3 s.h.
Requirements: one literature or culture course taught in Spanish numbered SPAN:3200 or above.

SPAN:4860 The Spanish Civil War 3 s.h.
Exploration of literature, history, and art of the Spanish Civil War (1936-1939); ideological debates and aesthetic achievements of the period; relationships among art, politics, and propaganda. Requirements: one literature or culture course taught in Spanish numbered SPAN:3200 or above.

SPAN:4870 Islamic Cultural Presence in Spain 3 s.h.
Islamic history and culture in the Iberian Peninsula from Middle Ages to present. Taught in Spanish. Requirements: one literature or culture course taught in Spanish numbered SPAN:3200 or above. Same as RELS:4870.

SPAN:4880 Comic Books and Graphic Novels in the Hispanic World 3 s.h.
Analysis of comics and graphic novels from Hispanic world; diverse Hispanic representational perspectives on creativity, humor, storytelling, culture, politics, nationality, and ethnicity; opportunity for students to express their own creativity with comics. Recommendations: two literature or culture courses taught in Spanish, at least one of which must be numbered SPAN:3200 or above.

SPAN:4900 Latin American Studies Seminar 3 s.h.

SPAN:4910 Topics in Literary Studies 3 s.h.
Requirements: two literature courses in Spanish, at least one of which must be numbered SPAN:3300 or above.

SPAN:4920 Topics in Film Studies 3 s.h.
Requirements: one literature or culture course taught in Spanish numbered SPAN:3200 or above.

SPAN:4940 Journalistic Narrative 3 s.h.
In-depth interpretative journalistic writing on a range of topics and forms, including profiles, social and political issues and controversy, cultural affairs, education. Prerequisites: SPAN:3020.

SPAN:4950 Advanced Workshop on Creative Writing in Spanish 3 s.h.
In-depth consideration of characters, dialog, conflict, setting, point of view, other fundamentals of fiction; experience writing short stories and other pieces, with class discussion; fictional texts by renowned writers, authors’ essays on their own creative process; narrative strategies of short stories, songs, painting, films. Requirements: one creative writing course in Spanish and one literature course in Spanish numbered SPAN:3300 or above, or two literature courses in Spanish numbered SPAN:3300 or above.

SPAN:4998 Honors: Research and Thesis 2-3 s.h.
Requirements: honors standing.

SPAN:4999 Special Work 1-3 s.h.

Spanish, Graduate

SPAN:5000 Teaching and Learning Languages 3 s.h.
Readings in pedagogical theory and practice, second language acquisition; experience designing activities for teaching and assessment with critiques based on current theories and approaches; development of reflective practices toward one’s language teaching. Same as WLLC:5000, SLA:5000, FREN:5000, GRMN:5001.

SPAN:5001 Introduction to Graduate Study 2 s.h.
Expectations, resources, and opportunities of graduate study; introduction to course work, development of preprofessional competencies. Same as FREN:5001.

SPAN:6000 Foreign Language Teaching Methods 3 s.h.
Readings in pedagogical theory and practice and second language acquisition; experience designing activities for teaching and assessment, with critiques based on current theories and approaches; development of reflective practices toward one’s own language teaching. Same as SLA:6300.
SPAN:6110 Spanish Phonology 3 s.h.
Modern approaches to synchronic phonology as applied to Spanish; focus on traditional descriptive problems; recent generative analyses. Requirements: phonology or linguistics course. Same as SLA:6303.

SPAN:6120 Spanish Syntax 3 s.h.
Spanish syntactic constructions examined in framework of selected syntactic theory; emphasis on development of syntactic argumentation. Requirements: one course in syntax. Same as SLA:6304.

SPAN:6150 Topics in Spanish Language Acquisition 3 s.h.
Theoretical linguistic approaches to monolingual, bilingual, and second language acquisition of Spanish and Portuguese; varied topics. Requirements: at least one course in linguistics (e.g., general introduction to linguistics). Same as SLA:6301.

SPAN:6180 Topics in Hispanic Linguistics 3 s.h.
Taught in Spanish or English.

SPAN:6190 Topics in Comparative Romance Linguistics 3 s.h.
Comparative study of phonology, morphology, or syntax of the main Romance languages as informed by linguistic theory; diachronic or synchronic perspective. Recommendations: additional graduate course work in linguistics. Same as LING:6190, CLSA:6990, SLA:6302.

SPAN:6210 Fiction Workshop 3 s.h.
Craft of writing short stories; underlying principles examined through lectures, readings, craft analysis, discussions, exercises, and workshops; activities linked with International Writing Program. Requirements: admission to M.F.A. Spanish Creative Writing program.

SPAN:6220 Poetry Workshop 3 s.h.
Construction and recognition of poetic voice through readings, analysis, and exercises from different poets and by students; poetic voice in three spaces (diary of poetic prose, collection of poems, object poem). Requirements: admission to M.F.A. Spanish Creative Writing program.

SPAN:6230 Graphic Novel/Comic Script Workshop 3 s.h.
Basic steps to develop a comic book or a graphic novel; different styles and ways to develop scripts and characters; read main authors and their graphic works; student work on possible script or group of characters. Requirements: admission to M.F.A. Spanish Creative Writing program.

SPAN:6235 Film Script/Theater Workshop 3 s.h.
Basic steps to developing plays; different styles and ways to develop plays and characters; reading main authors and their plays; student work on a possible play. Requirements: admission to M.F.A. in Spanish Creative Writing program.

SPAN:6240 Advanced Narrative Workshop 3 s.h.
Short stories written by internationally published authors; meetings with international authors; reading and discussion of students' short stories or sequential chapters of a novel; for students who have previously completed at least one workshop on narrative in the M.F.A. program. Requirements: admission to M.F.A. in Spanish Creative Writing program.

SPAN:6241 Creative Project Development 3 s.h.
Development of creative project. Requirements: admission to M.F.A. Spanish Creative Writing program.

SPAN:6251 Workshop on Editing a Literary e-Journal 3 s.h.
Plan, produce, write, and edit a literary digital magazine; manage and write for Iowa Literaria. Requirements: admission to M.F.A. in Spanish Creative Writing program.

SPAN:6260 Detective Narrative Workshop 3 s.h.
Basic elements of narrative used by authors of detective novels; acclaimed short stories, novels, and theoretical essays related to the genre; write three short stories of detective fiction; written critique of classmates' work. Requirements: admission to M.F.A. Spanish Creative Writing program.

SPAN:6270 Children, Youth Literature 3 s.h.
Practice of writing literature for children and youth; reading literary texts in different cultural traditions; how narratives and poems for children or youth are created; using readings as springboards for thinking about ways to write for children and youth; texts for this group of readers. Requirements: admission to M.F.A. Spanish Creative Writing program.

SPAN:6280 Nonfiction Workshop 3 s.h.
Practice of self narrative and construction of the self in literature; readings of self-narrated texts in different literary forms and cultural traditions (from autobiography to testimonial narratives); various ways in which the narrating self is formed and deformed by literary conventions that define him/her; readings as springboards for thinking on ways to write the self; series of autobiographical sketches. Requirements: admission to M.F.A. Spanish Creative Writing program.

SPAN:6299 Thesis: Creative Writing 3 s.h.
Continuation of work on student manuscript. Requirements: admission to M.F.A. Spanish Creative Writing program.

SPAN:6300 Colonial Spanish American Literature 3 s.h.
Chronicles of the conquest: close reading with focus on role of writing and operations of "othering"; balance between critical secondary sources and primary sources.

SPAN:6310 Spanish American Narrative: Nineteenth Century 3 s.h.
Review of narrative, with emphasis on Romanticism.

SPAN:6320 Contemporary Spanish American Narrative 3 s.h.
Narrative from mid-20th century to present; emphasis on the Boom, post-Boom.
SPAN:6330 Spanish American Narrative: Modern and Regional 3 s.h.
SPAN:6390 Topics in Spanish American Literature 3 s.h.
SPAN:6600 Medieval Spanish Literature 3 s.h.
Critical reading of canonical medieval texts in their cultural context; application of modern theory to medieval texts; works such as El Poema del Cid, El Romancero Viejo, Milagros de Nuestra Señora, El Conde Lucanor, El Libro de Buen Amor.
SPAN:6620 Spanish Renaissance and Baroque Literature 3 s.h.
Critical analysis of social, moral, political function of literature in early modern Spain; Renaissance and Baroque poetry; La Celestina; pastoral literature; Don Quijote; narratives of the court; modern subjectivity; the question of genre.
SPAN:6660 Contemporary Spanish Fiction 3 s.h.
The post-Franco novel in Spain; literary "postmodernism" and relationships between Spanish literature, politics, and society since 1975; representative significant works.
SPAN:6670 Contemporary Spanish Poetry 3 s.h.
Poetry on the Spanish literary scene circa 1968; authors' reactions to predecessors, their connections with foreign traditions, metapoetry, the aesthetics of culturalism.
SPAN:6680 Contemporary Non-Castilian Narrative Spain 3 s.h.
Readings in Spanish of novels and short stories written in another language of the Spanish state or by a member of one of Spain's non-Castilian historic nationalities.
SPAN:6690 Topics in Spanish Literature 3 s.h.
SPAN:6850 Topics in Literary Studies 3 s.h.
SPAN:6860 Topics in Cultural Studies 3 s.h.
SPAN:6901 Second Language Acquisition Research and Theory 3 s.h.
Theories regarding success and failure in acquisition of second or subsequent languages; research, issues. Same as FREN:6901, ASIA:6901, JPNS:6901.
SPAN:6902 Second Language Acquisition Research and Theory II 3 s.h.
Continuation of SLA:6901. Prerequisites: SLA:6901. Same as ASIA:6903, SLA:6902.
SPAN:6903 Crossing Borders Proseminar arr.
SPAN:6904 Crossing Borders Seminar 2-3 s.h.
SPAN:6905 Introduction to Contemporary Literary Theory 3 s.h.
How major theories construct literary text; structuralist, semiotic, psychoanalytic, Marxist, reader response, Derridian criticism. Taught in English. Same as CL:6105.
SPAN:6920 Multimedia and Second Language Acquisition 3 s.h.
Foreign language multimedia in context of current second language acquisition theories and research; readings on interactivity, interface design, feedback, learner control; acquisition of vocabulary, grammar, and culture. Requirements: foreign language teaching methodology course. Same as SLA:6920, FREN:6920, GRMN:6920.
SPAN:6950 Topics in Second Language Acquisition: Speaking 3 s.h.
Theory, pedagogy, research, and assessment in second language speaking. Same as SLA:6950, FREN:6950.
SPAN:6965 Topics in Second Language Acquisition: Writing 3 s.h.
Theory, pedagogy, research, and assessment in second language writing. Taught in English. Same as RHET:6965, SLA:6965.
SPAN:6998 Special Work arr.
SPAN:6999 Thesis arr.
SPAN:7000 Seminar: Spanish Linguistics 3 s.h.
Same as LING:7000.
SPAN:7200 Seminar: Literary Studies 3 s.h.
Specific topics on aspects of Spanish and/or Spanish American literature.
SPAN:7300 Seminar: Cultural Studies 3 s.h.
Specific topics in Spanish and/or Spanish American cultural studies.
SPAN:7505 Readings: Latin American History arr.
Same as HIST:7505.

Portuguese, Lower-Level Undergraduate
PORT:1800 Contemporary Brazilian Narrative 3 s.h.
Novels, short stories, other narrative forms, beginning with neorealists of 1930s; cultural background of different periods, innovative literary approaches of writers through films, other media. Prerequisites: ENGL:1200. GE: Literary, Visual, and Performing Arts.
PORT:2000 Accelerated Elementary Portuguese 5 s.h.
First-year course in one semester; comprehending, speaking, reading, writing modern Portuguese; emphasis on speaking. GE: World Languages Second Level Proficiency.
PORT:2500 Accelerated Intermediate Portuguese 5 s.h.
Second-year course in one semester; reading comprehension, oral and writing skills; grammar review. Prerequisites: PORT:2000. GE: World Languages Fourth Level Proficiency.

**PORT:2700 Introduction to Latin American Studies**
Cultures of Latin American countries with emphasis on cultural history and cultural production; interdisciplinary survey. Same as SPAN:2700, LAS:2700, IS:2700.

**PORT:2800 Topics in Cultural Studies**
Specific topics; interdisciplinary approaches; cultural relations of different parts of Portuguese-speaking world, cross-regional or cross-national discourses. Taught in English.

**Portuguese, Upper-Level Undergraduate and Graduate**

**PORT:3050 Portuguese for Spanish Speakers**
Systematic differences and similarities between Spanish and Portuguese; emphasis on reading, writing. Requirements: nine courses numbered SPAN:2000 or above.

**PORT:3100 Composition and Conversation**
Speaking, writing skills through discussion and oral presentations, grammar and vocabulary review, composition; materials from current Brazilian newspapers, magazines, short fiction, telenovelas and films. Prerequisites: PORT:2500 or PORT:3050.

**PORT:3130 Business Portuguese**
Clear, concise business writing; emphasis on linguistic and cultural proficiency. Prerequisites: PORT:2500 or PORT:3050.

**PORT:3150 Topics in Portuguese Language**
Various aspects of Portuguese language use. Prerequisites: PORT:2500 or PORT:3050.

**PORT:3200 Introduction to Literary Analysis**
Basic concepts of genre, literary periods, narrative and literary analysis; close reading of literary texts in Portuguese; tools for improving reading and writing skills. Taught in Portuguese. Prerequisites: PORT:2500 or PORT:3050.

**PORT:3350 Brazilian Literature Before 1900**
Beginnings through end of 19th century; representative readings from all periods and genres; focus on works of major Brazilian authors such as Gonzaga, Alencar, Castro Alves, Machado de Assis, Cruz e Sousa. Taught in Portuguese. Prerequisites: PORT:2500 or PORT:3050.

**PORT:3400 Brazilian Literature After 1900**
Twentieth-century poetry, novels, short stories; modernism, regionalism, generation of 1945, concretism; works of principal figures behind these movements; focus on major writers of modern period, such as Lima Barreto, Mário de Andrade, Drummond, Jorge Amado, Cabral de Melo Neto, Guimarães Rosa, Lispector, and contemporary writers. Taught in Portuguese. Prerequisites: PORT:2500 or PORT:3050.

**PORT:3500 Introduction to Portuguese Literature**
Representative readings including Portuguese lyric and epic poetry, Renaissance theater, romantic and realist novels, 20th-century symbolist verse, neorealist prose. Taught in Portuguese. Prerequisites: PORT:2500 or PORT:3050.

**PORT:3800 Mapping Portuguese Cultures: Portugal and Africa**
Study of contemporary Portuguese society and its relations with Lusophone Africa through fictional and historiographical readings. Prerequisites: PORT:2500.

**PORT:4000 Topics in Luso-Brazilian Literature**
Genres, themes, movements. Taught in Portuguese. Prerequisites: PORT:2500 or PORT:3050. Requirements: one Portuguese or Brazilian literature course.

**PORT:4100 Topics in Luso-Brazilian Culture**
Comparative analysis of Brazil and Portuguese-speaking countries in Africa; colonization, independence, religion, music, language. Taught in Portuguese. Prerequisites: PORT:2500 or PORT:3050.

**PORT:4700 Latin American Studies Seminar**

**PORT:4998 Special Work**
1-3 s.h.

**PORT:4999 Honors Research and Thesis**
2-3 s.h. Requirements: honors standing.

**Portuguese, Graduate**

**PORT:6998 Special Work**
arr.
Statistics and Actuarial Science

Chair
- Joseph B. Lang

Undergraduate majors: statistics (B.S.); actuarial science (B.S.)
Undergraduate minor: statistics
Graduate degrees: M.S. in actuarial science; M.S. in statistics; Ph.D. in statistics
Faculty: http://www.stat.uiowa.edu/people
Web site: http://www.stat.uiowa.edu

The Department of Statistics and Actuarial Science offers undergraduate majors, an undergraduate minor, and graduate degree programs. The department partners with the Departments of Computer Science and Mathematics to offer the undergraduate Certificate in Large Data Analysis (p. 445) and with the Departments of Geographical and Sustainability Sciences, Political Science, and Sociology to offer the Certificate in Social Science Analytics (p. 571). It offers courses that undergraduate students in all majors may use to satisfy the General Education Program (p. 313) Quantitative or Formal Reasoning requirement.

Probability and statistics is an important scientific discipline essential to all fields of study that rely on information obtained from data. In a world bombarded with numerical information, informed decisions rely on the ability to separate fact from fiction by applying valid statistical analyses and visualizations. Statisticians can provide crucial guidance in determining what information is reliable and which predictions may be trusted. They often help search for clues to the solution of a scientific mystery and sometimes keep investigators from being misled by false impressions.

The work of a statistician may range from the theoretical (developing new methodologies and statistical theory) to the applied (working with scientists and decision makers to collect, analyze, and interpret data). Regardless of the areas in which they work, statisticians need strong mathematical, computational, and communication skills. Because uncertainty and data arise in many settings, statisticians have the opportunity to work on a variety of projects in industry, education, government, and research. Thousands of statisticians work in medicine, law, agriculture, public policy, marketing, manufacturing, engineering, and other fields in the social and natural sciences. The diversity of applications is an exciting aspect of the field and is one reason why the demand for well-trained statisticians continues to be strong.

An actuary is a business executive, professionally trained in the mathematical sciences. Actuaries specialize in the evaluation of financial risk—most often in the context of life, health, and casualty insurance, where they design, analyze, and refine varied programs to meet the insurance needs of society. Many actuaries are employed by insurance companies, where they have responsibilities for all phases of the development and maintenance of their company’s products. They have considerable influence on the financial soundness of their company through work in pricing insurance policies and in compiling data for financial statements.

Many actuaries are employed as consultants. Their actuarial services are used by smaller insurance companies and by individual employers who need actuarial guidance in establishing insurance and retirement programs for their employees. A growing number of actuaries work in the areas of asset/liability management and risk management. Some of these actuaries are employed by investment and consulting firms; others are employed by insurance companies.

Actuaries have been called financial architects and social mathematicians, because their combined analytical and business skills help solve a growing variety of financial and social problems. The actuarial profession is a demanding yet rewarding career choice.

Graduates of the Department of Statistics and Actuarial Science have enjoyed great success in finding employment at all levels of the profession’s fields.

Undergraduate Programs of Study
- Major in statistics (Bachelor of Science)
- Major in actuarial science (Bachelor of Science)
- Minor in statistics

Bachelor of Science: Statistics
The Bachelor of Science with a major in statistics requires a minimum of 120 s.h., including at least 47 s.h. of work for the major. Students must maintain a g.p.a. of at least 2.00 in all courses for the major and in all UI courses for the major. They also must complete the College of Liberal Arts and Sciences General Education Program (p. 313).

Students complete 10 core courses that provide essential instruction in statistical methods, applications, and theory. In addition, they concentrate on an area of interest by completing four courses in one of the major’s three emphasis tracks: statistics in business, industry, government, and research; statistical computing and data science; or mathematical statistics.

The major in statistics requires the following course work.

CORE COURSES
All students complete the following 10 core courses.

Computer science:
- CS:1210 Computer Science I: Fundamentals 4 s.h.
- Mathematics—all of these:
  - MATH:1850 & MATH:1860 Calculus I-II 8 s.h.
  - MATH:2700 Introduction to Linear Algebra 4 s.h.
  - MATH:2850 Calculus III 4 s.h.
- Statistics—all of these:
  - STAT:2010 Statistical Methods and Computing 3 s.h.
  - STAT:3200 Applied Linear Regression 3 s.h.
  - STAT:3210 Experimental Design and Analysis 3 s.h.

The department recommends that well-prepared students who elect the mathematical statistics track take STAT:4100 Mathematical Statistics I and STAT:4101 Mathematical Statistics II in place of STAT:3100
Introduction to Mathematical Statistics I and STAT:3101
Introduction to Mathematical Statistics II to satisfy the core
requirement in statistics.

**Emphasis Tracks**

Students choose one of the following tracks and must
complete at least four courses in that track.

**STATISTICS IN BUSINESS, INDUSTRY,
GOVERNMENT, AND RESEARCH TRACK**
The statistics in business, industry, government, and
research track emphasizes statistical applications and data
analysis. It is appropriate for students interested in careers
as applied statisticians.

This course:
STAT:5810 Research Data Management 3 s.h.

Three of these:
STAT:3620 Quality Control 3 s.h.
STAT:4520 Bayesian Statistics 3 s.h.
STAT:5400 Computing in Statistics 3 s.h.
STAT:6220 Statistical Consulting 3 s.h.
STAT:6510 Applied Generalized Regression 3 s.h.
STAT:6530 Environmental and Spatial
Statistics
STAT:6540 Applied Multivariate Analysis 3 s.h.
STAT:6560 Applied Time Series Analysis 3 s.h.
BIOS:5730 Biostatistical Methods in
Categorical Data
BIOS:6310/STAT:6550 Introductory
Categorical Data
STAT:6510 Applied Generalized Regression 3 s.h.
STAT:6530 Environmental and Spatial
Statistics
STAT:6540 Applied Multivariate Analysis 3 s.h.
STAT:6560 Applied Time Series Analysis 3 s.h.

Students who use STAT:4100 Mathematical Statistics I and
STAT:4101 Mathematical Statistics II to satisfy the core
requirements may not use those courses to satisfy the
track requirement.

**Bachelor of Science: Actuarial Science**
The Bachelor of Science with a major in actuarial science
requires a minimum of 120 s.h., including 59 s.h. of work
for the major. Students must maintain a g.p.a. of at least
2.00 in all courses for the major and in all UI courses for
the major. They also must complete the College of Liberal
Arts and Sciences General Education Program (p. 313).

The program prepares students for careers as actuaries.
It also helps them learn material that is included in
professional examinations administered by professional
organizations such as the Society of Actuaries and the
Casualty Actuarial Society.

Students take a variety of actuarial science courses. They
prepare for business aspects of the actuarial profession
by studying accounting, law, finance, insurance, and
economics. They also complete courses that enhance
important communication skills, such as writing and
speaking, as part of their General Education Program
requirements.

**ADMISSION TO THE MAJOR**

Due to the demanding nature of the actuarial science
major and the difficulty of the professional examinations,
the department maintains a selective admission program
for actuarial science. Students must apply and be admitted
to the major.

Students interested in becoming actuaries should declare
an interest in actuarial science as their major when
they enter the University of Iowa. Ordinarily, students
apply for admission to the actuarial science major in the
fall semester of their sophomore year, after they have
taken MATH:3770 Fundamental Properties of Spaces and
Functions I or MATH:2850 Calculus III, and STAT:3100
Introduction to Mathematical Statistics I. Students should
apply no later than the end of the spring semester of their
junior year.

Students admitted to the actuarial science major usually
have completed at least 40 s.h. at the University or at

**STATISTICAL COMPUTING AND DATA SCIENCE
TRACK**
The statistical computing and data science track
emphasizes statistical applications and requires additional
course work in computing. It prepares students for
statistical work that requires computing expertise for data
management, analysis, and reporting.

Both of these:
STAT:5810 Research Data Management 3 s.h.
CS:2230 Computer Science II: Data Structures 4 s.h.

Two of these:
STAT:4520 Bayesian Statistics 3 s.h.
STAT:5400 Computing in Statistics 3 s.h.
STAT:6220 Statistical Consulting 3 s.h.
STAT:6510 Applied Generalized Regression 3 s.h.
STAT:6530 Environmental and Spatial
Statistics
STAT:6540 Applied Multivariate Analysis 3 s.h.
STAT:6560 Applied Time Series Analysis 3 s.h.
BIOS:6310/STAT:6550 Introductory
Categorical Data
CS:3700 Elementary Numerical Analysis 3 s.h.

**MATHEMATICAL STATISTICS TRACK**
The mathematical statistics track provides a solid
foundation in statistical theory and applications. It requires
additional course work in mathematics and is good
preparation for graduate study in statistics.

This course:
MATH:3770 Fundamental Properties of Spaces and
Functions I 4 s.h.

Three of these:
STAT:4100-STAT:4101 Mathematical Statistics I-II
STAT:4520 Bayesian Statistics 3 s.h.
STAT:6220 Statistical Consulting 3 s.h.
STAT:6300-STAT:6301 Probability and
Stochastic Processes I-II
STAT:6510 Applied Generalized Regression 3 s.h.
STAT:6530 Environmental and Spatial
Statistics
STAT:6540 Applied Multivariate Analysis 3 s.h.
STAT:6560 Applied Time Series Analysis 3 s.h.

Students who use STAT:4100 Mathematical Statistics I and
STAT:4101 Mathematical Statistics II to satisfy the core
requirements may not use those courses to satisfy the
track requirement.
another postsecondary institution, including a three- or four-course calculus sequence, a course in linear algebra, and a calculus-based course in probability and statistics. The admission decision is based on the student's performance in these courses and other courses relevant to success in the major. The student's grades from semester to semester also are considered. ACT or SAT scores are considered in evaluating transfer students. Factors such as work ethic, enthusiasm, and commitment also may be considered. Students who do well in the prerequisite math courses tend to be the most successful in actuarial science.

For application forms and more information about selective admission, contact the Department of Statistics and Actuarial Science.

**COURSES REQUIRED FOR THE MAJOR**

The major in actuarial science requires the following course work. Permission to substitute course work taken at another institution for required courses at the University of Iowa is decided case by case; students should contact the department.

Computer science:

CS:1210 Computer Science I: Fundamentals 4 s.h.

Economics—both of these:

ECON:1100 Principles of Microeconomics 4 s.h.
ECON:1200 Principles of Macroeconomics 4 s.h.

Mathematics—all of these:

MATH:1850 & MATH:1860 Calculus I-II 8 s.h.
MATH:2700 Introduction to Linear Algebra 4 s.h.
MATH:2850 Calculus III 4 s.h.
MATH:3770 Fundamental Properties of Spaces and Functions I 4 s.h.

Statistics and actuarial science—all of these:

ACTS:3080 Mathematics of Finance I 3 s.h.
ACTS:4130 Quantitative Methods for Actuaries 3 s.h.
ACTS:4180 & ACTS:4280 Life Contingencies I-II 6 s.h.
ACTS:4380 Mathematics of Finance II 3 s.h.
STAT:3100-STAT:3101 Introduction to Mathematical Statistics I-II 6 s.h.
STAT:4100-STAT:4101 Mathematical Statistics I-II 6 s.h.

In exceptional cases, the advisor may grant permission to waive STAT:3100 Introduction to Mathematical Statistics I and/or STAT:3101 Introduction to Mathematical Statistics II.

Students may choose to complete ACTS:6580 Credibility and Survival Analysis and ACTS:6480 Loss Distributions (both courses) instead of ACTS:4380 Mathematics of Finance II, except honors students, who must complete all three courses.

**Joint B.S./M.S. in Statistics**

The joint Bachelor of Science/Master of Science in statistics is for eligible students who seek to complete both the B.S. and the M.S. at the University of Iowa in five years. Students in the joint program must complete all requirements for each degree. A traditional M.S. in statistics requires completion of 32 s.h. of graduate-level course work. The B.S./M.S. program permits students to count 12 s.h. of credit (four courses) toward the requirements for both degrees. To complete the M.S., an additional 20 s.h. of course work is required. The four courses that count toward both degrees must be taken during the fourth year of undergraduate study, after admission to the joint program, and must satisfy degree requirements of both the B.S. and the M.S. in statistics.

**Joint B.S./M.P.H. with Quantitative Methods Subprogram**

Bachelor of Science students majoring in statistics who are interested in earning a Master of Public Health degree with quantitative methods (biostatistics) subprogram may apply to the joint B.S./M.P.H. program offered by the College of Liberal Arts and Sciences and the College of Public Health. The program permits students to count 12 s.h. of credit toward the requirements for both degrees, enabling them to begin the study of public health before they complete the bachelor's degree. For information about the public health program, see “Quantitative Methods Subprogram" in the Master of Public Health Program (p. 1173) section of the Catalog.

**Four-Year Graduation Plan**

The following checkpoints list the minimum requirements students must complete by certain semesters in order to stay on the University's Four-Year Graduation Plan. (Courses in the major are those required to complete the major; they may be offered by departments other than the major department.)

Much of the course work in statistics and in actuarial science is sequential, so students must begin requirements for the major as soon as possible. Individual study plans must be made carefully. Students who first enroll for a spring semester must consult their advisor to confirm a four-year plan.

**B.S.: Statistics**

Courses must be taken in sequence, so students must begin work early.

**Before the fifth semester begins:** at least four courses in the major, including MATH:1850 Calculus I, MATH:1860 Calculus II, and STAT:2010 Statistical Methods and Computing

**Before the seventh semester begins:** seven or eight courses in the major and at least 90 s.h. earned toward the degree

**Before the eighth semester begins:** nine or ten courses in the major

**During the eighth semester:** enrollment in all remaining course work in the major, all remaining General Education courses, and a sufficient number of semester hours to graduate

**B.S.: Actuarial Science**

**Before the third semester begins:** MATH:1860 Calculus II and MATH:2700 Introduction to Linear Algebra

**Before the fifth semester begins:** MATH:2850 Calculus III, MATH:3770 Fundamental Properties of Spaces and Functions I, STAT:3100 Introduction to Mathematical

**Before the seventh semester begins:** STAT:4101 Mathematical Statistics II, ACTS:4130 Quantitative Methods for Actuaries, ACTS:4180 Life Contingencies I, ACTS:4380 Mathematics of Finance II, and at least 90 s.h. earned toward the degree

**Before the eighth semester begins:** ACTS:4280 Life Contingencies II

**During the eighth semester:** enrollment in all remaining course work in the major, all remaining General Education courses, and a sufficient number of semester hours to graduate

### Honors in the Major

Students majoring in statistics or in actuarial science have the opportunity to graduate with honors in the major. Departmental honors students must maintain a g.p.a. of at least 3.40 in their major and a cumulative University of Iowa g.p.a. of at least 3.33.

To graduate with honors in the statistics major, students must complete an honors project or a suitable alternative. Statistics honors students should consult with the statistics honors advisor.

To graduate with honors in the actuarial science major, students must complete the following five courses in addition to all courses required for the major.

- ACTS:6480 Loss Distributions 3 s.h.
- ACTS:6580 Credibility and Survival Analysis 3 s.h.
- STAT:4510 Regression, Time Series, and Forecasting (or STAT:3200 and STAT:6560) 3 s.h.
- MATH:3600 Introduction to Ordinary Differential Equations 3 s.h.
- FIN:3300 Corporate Finance 3 s.h.

Actuarial science honors students may not elect to complete ACTS:6580 Credibility and Survival Analysis and ACTS:6480 Loss Distributions instead of ACTS:4380 Mathematics of Finance II in fulfilling requirements for the actuarial science major. They must complete ACTS:4380 as part of the major, and they must complete ACTS:6580 and ACTS:6480 for honors credit.

In addition to honors in their majors, undergraduate students have a variety of opportunities for honors study and activities through membership in the University of Iowa Honors Program; visit Honors at Iowa to learn about the University’s honors program.

### Minor: Statistics

The minor in statistics requires a minimum of 15 s.h. in statistics courses taken at the University of Iowa. At least 12 s.h. must be taken in courses numbered 3000 or above (selected from the lists below). They must maintain a cumulative g.p.a. of at least 2.00 in all courses for the minor and in all UI courses for the minor. Course work in the minor may not be taken pass/nonpass.

The minor requires the following course work.

One of these:
- STAT:2010 Statistical Methods and Computing 3 s.h.
- STAT:4200 Statistical Methods and Computing 3 s.h.

### Related Certificate: Large Data Analysis

The Certificate in Large Data Analysis can be earned in addition to a B.S. degree in statistics. The certificate focuses on handling, processing, and extracting information from large data sets. As computers have become faster and smaller, more information can be gathered and used for a large range of applications, such as for weather forecasting; identifying people and trends utilizing Facebook or other social media; understanding the genome; and searching for disease causes and cures, as well as many other areas of study. The certificate is interdisciplinary, requiring courses from three areas of study—computer science, mathematics, and statistics. Computer science teaches students how to handle large amounts of data and how to implement the algorithms to process them while statistics helps students to understand what can and cannot be legitimately inferred from the data. Mathematics focuses on algorithms and methods for connecting these important areas of data collection.

### Related Certificate in Social Science Analytics

The Department of Statistics and Actuarial Science collaborates with the Departments of Geographical and Sustainability Sciences (p. 323), Political Science (p. 520), and Sociology (p. 585) to offer the undergraduate program in social science analytics; see Social Science Analytics (p. 571) in the Catalog.
Graduate Programs of Study

- Master of Science in statistics
- Master of Science in actuarial science
- Doctor of Philosophy in statistics

Master of Science: Statistics

The Master of Science in statistics requires 32 s.h. of graduate credit. The program prepares students for careers as professional statisticians or for entry into the Ph.D. program. It includes a solid foundation in statistical computing, statistical modeling, experimental design, and mathematical statistics plus electives in statistical methods and/or theory. Students have the opportunity to concentrate on theory or applications or a combination of the two.

In addition to required course work, students must pass the two-part graduate core examination and complete the M.S. creative component. The examination and creative component constitute the M.S. final (comprehensive) examination required by the Graduate College.

M.S. students in statistics must maintain a g.p.a. of at least 3.00 in all work toward the degree and in additional relevant course work. Students must take a computer programming proficiency test during the first semester of study; those who display inadequate programming skills are assigned activities to build their proficiency.

The Master of Science program in statistics requires the following work:

STATISTICS COURSES

All of these:

- STAT:5090 ALPHA Seminar 1 s.h.
- STAT:5100-STAT:5101 Statistical Inference I-II 6 s.h.
- STAT:5400 Computing in Statistics 3 s.h.
- STAT:6220 Statistical Consulting 3 s.h.
- STAT:6300 Probability and Stochastic Processes I 3 s.h.
- STAT:6990 Readings in Statistics (two consecutive enrollments) 2 s.h.

At least 7 s.h. from these:

- STAT:4520 Bayesian Statistics 3 s.h.
- STAT:5120 Mathematical Methods for Statistics 3 s.h.
- STAT:6301 Probability and Stochastic Processes II 3 s.h.
- STAT:6510 Applied Generalized Regression 3 s.h.
- STAT:6530 Environmental and Spatial Statistics 3 s.h.
- STAT:6540 Applied Multivariate Analysis 3 s.h.
- STAT:6547 Nonparametric Statistical Methods 3 s.h.
- STAT:6560 Applied Time Series Analysis 3 s.h.
- STAT:6970 Topics in Statistics 3 s.h.

A Ph.D.-level course numbered 7000 or above, including seminar courses 1-3 s.h.

M.S. students planning to enter the doctoral program may wish to include STAT:5120 Mathematical Methods for Statistics in their course selections, since it is part of the required Ph.D. core.

MASTER OF SCIENCE FINAL EXAMINATION


Final examinations are offered the week before classes begin in August and in January. Study guides are available in the department office. Students who do not succeed the first time they take the exam may repeat it once.

Students must complete all requirements and be granted the Master of Science degree within one calendar year of passing the M.S. final examination; those who do not meet this deadline are required to take the exam again.

Students entering the Ph.D. program, who will choose either biostatistics, probability/mathematical statistics, or statistical modeling and computing as their concentration area, and who already have taken the equivalent of the first-year courses, may take the M.S. final examination in statistics before beginning further studies.

CREATIVE COMPONENT

Students must also complete a creative component that is related to their application and career interests. Students wishing to qualify for the Ph.D. program are encouraged to write a research-oriented creative component. The creative component entails writing an 8-15 page report on a suitable topic, under an advisor's supervision (with two consecutive 1 s.h. enrollments in STAT:6990 Readings in Statistics, normally during the fall and spring semesters of the second year). A draft of the paper should be completed by the end of the first enrollment in STAT:6990, and polished by early- to mid-semester in the second enrollment. The paper is then presented orally in a public seminar. A faculty committee, in consultation with the creative component advisor, evaluates the work and the presentation, and assigns a grade of satisfactory or unsatisfactory.

For students wishing to qualify for the Ph.D. program, the creative component represents one piece of the body of work used to determine Ph.D. qualification. The creative component must be satisfactorily completed within one calendar year of passing the M.S. final examination; failure to meet this deadline requires reexamination of the student.

Master of Science: Actuarial Science

The Master of Science program in actuarial science requires 36 s.h. of graduate credit. The program prepares students for actuarial careers by emphasizing the theory that underlies risk processes and the application of this theory to practical problems of insurance pricing and management. It also helps them learn material that is included in professional examinations administered by professional organizations such as the Society of Actuaries and the Casualty Actuarial Society.
Students in the actuarial science Master of Science program complete required courses and a M.S. final examination.

The M.S. in actuarial science requires the following course work.

One of these sequences:

<table>
<thead>
<tr>
<th>Course Sequence</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>STAT:4100-STAT:4101 Mathematical Statistics I-II</td>
<td>6 s.h.</td>
</tr>
<tr>
<td>STAT:5100-STAT:5101 Statistical Inference I-II (for well-prepared students)</td>
<td>6 s.h.</td>
</tr>
</tbody>
</table>

All of these:

<table>
<thead>
<tr>
<th>Course Sequence</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACTS:3080 Mathematics of Finance I</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ACTS:4130 Quantitative Methods for Actuaries</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ACTS:4180 &amp; ACTS:4280 Life Contingencies I-II</td>
<td>6 s.h.</td>
</tr>
<tr>
<td>ACTS:4380 Mathematics of Finance II</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ACTS:6160 Topics in Actuarial Science</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ACTS:6480 Loss Distributions</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ACTS:6580 Credibility and Survival Analysis</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>STAT:4510 Regression, Time Series, and Forecasting</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>A course approved by the advisor</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

**Masters of Science Final Examination**

The M.S. final examination is offered the weekend before classes begin in January. The exam covers the material presented in ACTS:6160 Topics in Actuarial Science, ACTS:4180 Life Contingencies I, ACTS:4280 Life Contingencies II, and ACTS:4380 Mathematics of Finance II. Students who do not succeed the first time they take the exam may repeat it once.

**Doctor of Philosophy**

The Doctor of Philosophy program in statistics requires a minimum of 76 s.h. of graduate credit, including work completed for the M.S. degree. The program prepares students for careers in research, applications, and teaching.

Ph.D. students complete required course work, including four courses in one of four concentration areas: biostatistics, probability/mathematical statistics, statistical modeling and computing, or actuarial science/financial mathematics (see "Concentration Areas" below for area descriptions and course lists). They may take course work or seminars in other departments to relate an area of specialization to other fields of knowledge, to acquire the ability to use electronic digital computing equipment, or to learn non-English language skills necessary for reading scientific journals and communicating with scholars in other languages.

Students enter the Ph.D. program in one of two tracks:

(Statistics) After successfully passing both the M.S. final examination in statistics and the creative component, a student who will choose either biostatistics, probability/mathematical statistics, or statistical modeling and computing as his or her concentration area, can request, by notifying the department chair, to go through the Ph.D. qualifying procedure. Upon this request, the faculty evaluates the student’s body of work and assesses the student’s potential for research. The body of work will include the M.S. final examination in statistics, the creative component, and course work. This evaluation and assessment results in one of three decisions—the student is officially admitted into the Ph.D. program; the student must reapply to go through the Ph.D. qualifying procedure after accumulating a larger body of work for evaluation; or the student is not admitted into the Ph.D. program.

(Actuarial Science) After successfully passing the M.S. final examination in actuarial science, a student who will choose actuarial science/financial mathematics as his or her concentration area, can request, by notifying the director of graduate studies, to go through the Ph.D. qualifying procedure. Upon this request, the faculty evaluates the student’s body of work and assesses the student’s potential for research. The body of work will include the M.S. final examination in actuarial science, professional examinations passed, and course work. This evaluation and assessment results in one of two decisions—the student is officially admitted into the Ph.D. program in the actuarial science/financial mathematics concentration area, or the student is not admitted into the Ph.D. program.

Students complete the program by passing the Ph.D. final (comprehensive) examination and writing and defending a dissertation. Students usually complete the program three years after earning the M.S. degree.

A program that does not conform to the requirements described below but is of high quality may be approved by the department chair.

Ph.D. students in statistics must maintain a g.p.a. of at least 3.00 in all work toward the degree and in additional relevant course work. Each semester a Ph.D. student in statistics registers for at least 6 s.h., he or she must include at least one 2 s.h. course offered by the department, excluding STAT:6990 Readings in Statistics and STAT:7990 Reading Research.

The Doctor of Philosophy in statistics requires the following work.

**STATISTICS COURSES**

**Biostatistics, Probability/Mathematical Statistics, or Statistical Modeling and Computing Concentration Area**

Students in the biostatistics, probability/mathematical statistics, or statistical modeling and computing concentration area must complete the following core courses from the M.S. in statistics program.

All of these:

<table>
<thead>
<tr>
<th>Course Sequence</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>STAT:5090 ALPHA Seminar</td>
<td>1 s.h.</td>
</tr>
<tr>
<td>STAT:5100-STAT:5101 Statistical Inference I-II</td>
<td>6 s.h.</td>
</tr>
<tr>
<td>STAT:5200-STAT:5201 Applied Statistics I-II</td>
<td>7 s.h.</td>
</tr>
<tr>
<td>STAT:5400 Computing in Statistics</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>STAT:6220 Statistical Consulting</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>STAT:6300 Probability and Stochastic Processes I</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>STAT:6990 Readings in Statistics (two consecutive enrollments)</td>
<td>2 s.h.</td>
</tr>
</tbody>
</table>
Statistical modeling and computing emphasizes the theory and application of a broad array of statistical models, such as linear, generalized linear, nonlinear, categorical, spatial, correlated response, and nonparametric regression models. This concentration area prepares students to specify and choose appropriate models; fit the models using available statistical software; and make sound statistical conclusions and interpretive statements. It is excellent preparation for students interested in academic, industrial, or government positions that involve data analysis.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>STAT:6510</td>
<td>Applied Generalized Regression</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>STAT:6530</td>
<td>Environmental and Spatial Statistics</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>STAT:6540</td>
<td>Applied Multivariate Analysis</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>STAT:6560</td>
<td>Applied Time Series Analysis</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>STAT:6970</td>
<td>Topics in Statistics</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>STAT:7510</td>
<td>Analysis of Categorical Data</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

STAT:7520 Bayesian Analysis 3 s.h.
STAT:7560 Time Series Analysis 3 s.h.

Probability/Mathematical Statistics

Probability/mathematical statistics emphasizes a broad, solid foundation in techniques and underpinnings of mathematical statistics. It is excellent preparation for academic positions in mathematical statistics and industrial or government positions that require broadly trained statisticians with a strong understanding of statistical theory.

<table>
<thead>
<tr>
<th>Course Code</th>
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</tr>
</thead>
<tbody>
<tr>
<td>STAT:6301</td>
<td>Probability and Stochastic Processes II</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>STAT:7301</td>
<td>Foundations of Probability II</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>STAT:7520</td>
<td>Bayesian Analysis</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>STAT:7560</td>
<td>Time Series Analysis</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

Biostatistics

Biostatistics emphasizes exposure to various biostatistical methods, such as survival analysis, categorical data analysis, and longitudinal data analysis. It prepares students for consulting and other positions in industry.

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>STAT:6530</td>
<td>Environmental and Spatial Statistics</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>STAT:6540</td>
<td>Applied Multivariate Analysis</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>STAT:7510</td>
<td>Analysis of Categorical Data</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>BIOS:7310</td>
<td>Longitudinal Data Analysis</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

Actuarial Science/Financial Mathematics

Actuarial science/financial mathematics emphasizes the theory of actuarial science, finance, and risk management. It is excellent preparation for academic positions in universities that offer actuarial science programs and for positions in the insurance, pension, and financial industries. Most students who choose this concentration area are admitted after earning an M.S. in actuarial science at the University of Iowa.

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>STAT:6301</td>
<td>Probability and Stochastic Processes II</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>STAT:7560</td>
<td>Time Series Analysis</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>FIN:7110</td>
<td>Finance Theory I</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>FIN:7130</td>
<td>Finance Theory II</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

Ph.D. Final Examination

Students typically take the Ph.D. final (comprehensive) examination at the beginning of the third year of graduate study, during the week before fall classes begin. Students who do not succeed the first time they take the exam may repeat it once.

The comprehensive examination consists of a written core examination and an oral examination in two of the following four areas:

- Statistical inference (topics in STAT:5100 Statistical Inference I, STAT:5101 Statistical Inference II, and STAT:7100 Advanced Inference I);
- Linear models (topics in STAT:7200 Linear Models);
probability (topics in STAT:6300 Probability and Stochastic Processes I and STAT:7300 Foundations of Probability I); and

Ph.D. students in the actuarial science/financial mathematics concentration area have the option of taking only one of the four examinations listed above and an actuarial science/financial mathematics examination designed by their advisor and approved by the director of graduate studies.

**Ph.D. COMMITTEE**

Upon passing the Ph.D. final examination, the candidate chooses a committee of at least five members, which is approved by the advisor. At least four of the faculty members must be University of Iowa tenure-track faculty members. At least two of the faculty members must be from the major department (defined as faculty members who hold any appointment in the major department), and University of Iowa tenure-track faculty members.

The department may request the Graduate College dean's permission to replace one of the five committee members by a recognized scholar of professorial rank from another academic institution.

**PROSPECTUS**

Within 12 months of passing the Ph.D. final exam, the candidate presents a written and oral prospectus to the committee. The prospectus describes the problems the student is considering for the thesis, relevant background material, ideas for solving the problems, and any preliminary results.

**Financial Support**

Funds are available to help support outstanding Ph.D. applicants. Fellowships, teaching assistantships, and research assistantships provide an attractive stipend plus resident tuition status and tuition scholarships for students who are appointed at least one-quarter time. In most cases, full tuition waivers are granted.

Students who wish to be considered for financial assistance for their third year in the program should request to go through the Ph.D. qualifying process no later than the spring semester of their second year.

**Admission**

Applicants must meet the admission requirements of the Graduate College; see the Manual of Rules and Regulations of the Graduate College.

**Facilities**

The Department of Statistics and Actuarial Science is housed in Schaeffer Hall, adjacent to Old Capitol, a National Historic Landmark and the center of campus. The department operates two computer labs in Schaeffer Hall. One, which also is used as an electronic classroom, contains 28 Windows PCs. The second houses 18 high-end UNIX workstations. Students use these labs for class work and research.

**Courses**

**Undergraduate Duplication and Regression Policy**

Undergraduate students should be aware of the duplication and regression policies concerning the following courses.

Students may earn credit for only two of these:

- STAT:1010 Statistics and Society,
- STAT:1020 Elementary Statistics and Inference (same as PSQF:1020),
- STAT:1030 Statistics for Business, and

Credit for STAT:1010 Statistics and Society may be earned only if the course is taken before any of these:

- STAT:1020 Elementary Statistics and Inference (same as PSQF:1020),
- STAT:1030 Statistics for Business, or

Students may receive credit for only one course from each of these pairs:

- STAT:2010 Statistical Methods and Computing and STAT:4200 Statistical Methods and Computing,

Students may not take STAT:3101 Introduction to Mathematical Statistics II and STAT:4101 Mathematical Statistics II at the same time and get credit for both (nor go back to STAT:3101 Introduction to Mathematical Statistics II after taking STAT:4101 Mathematical Statistics II).

**Lower-Level Undergraduate**

**Actuarial Science**

**ACTS:1001 Introductory Seminar on Actuarial Science** 1 s.h.

Introduction to actuarial science; U.S. actuarial organizations and actuarial qualification process; program requirements and tips for academic success; career center, actuarial club, and internships; actuarial career; ethics; communication; introduction to actuarial computing. Requirements: actuarial science interest major and first-year standing.

**Statistics**

**STAT:1000 First-Year Seminar** 1 s.h.

Small discussion class taught by a faculty member; topics chosen by instructor; may include outside activities (e.g., films, lectures, performances, readings, visits to research facilities). Requirements: first- or second-semester standing.

**STAT:1010 Statistics and Society** 3 s.h.

Statistical ideas and their relevance to public policy, business, and the social, health, and physical sciences; focus on critical approach to statistical evidence. Requirements: one year of high school algebra or MATH:0100. GE: Quantitative or Formal Reasoning.
STAT:1020 Elementary Statistics and Inference 3 s.h.
Graphing techniques for presenting data, descriptive statistics, correlation, regression, prediction; logic of statistical inference, elementary probability models, estimation and tests of significance. Requirements: one year of high school algebra or MATH:0100. GE: Quantitative or Formal Reasoning. Same as PSQF:1020.

STAT:1030 Statistics for Business 4 s.h.
Descriptive statistics, graphical presentation, elementary probability, estimation and testing, regression, correlation; statistical computer packages. Prerequisites: MATH:1005. GE: Quantitative or Formal Reasoning.

STAT:2010 Statistical Methods and Computing 3 s.h.
Methods of data description and analysis using SAS; descriptive statistics, graphical presentation, estimation, hypothesis testing, sample size, power; emphasis on learning statistical methods and concepts through hands-on experience with real data. Prerequisites: MATH:1005. Recommendations: undergraduate standing. GE: Quantitative or Formal Reasoning.

STAT:2020 Probability and Statistics for the Engineering and Physical Sciences 3 s.h.
Probability, random variables, important discrete and continuous distributions, joint distributions, transformations of random variables, descriptive statistics, point and interval estimation, tests of hypotheses, regression. Prerequisites: MATH:1560.

Upper-Level Undergraduate and Graduate

Actuarial Science

ACTS:3080 Mathematics of Finance I 3 s.h.
Mathematics of compound interest; annuities certain, amortization schedules, yield rates, sinking funds, bonds; introduction to financial derivatives. Offered fall and spring semesters. Prerequisites: STAT:3100. Requirements: grade of B- or higher in STAT:3100 or graduate standing.

ACTS:3085 Introduction to Mathematics of Finance 4 s.h.
Mathematics of compound interest, including annuities certain, amortization schedules, yield rates, sinking funds, bonds, introduction to financial derivatives. Offered spring semesters. Prerequisites: STAT:3100. Requirements: grade of B- or higher in STAT:3100.

ACTS:3110 Actuarial Exam P Preparation 1 s.h.
Preparation for the Society of Actuaries exam P.

ACTS:3210 Actuarial Exam FM Preparation 1 s.h.
Preparation for the Society of Actuaries exam FM. Corequisites: ACTS:3080 or ACTS:3085, if not taken as a prerequisite.

ACTS:4110 Actuarial Exam MLC Preparation 1 s.h.

ACTS:4130 Quantitative Methods for Actuaries 3 s.h.
Survival distributions, life tables, and mathematics of derivatives. Offered fall and spring semesters. Corequisites: (ACTS:3080 or ACTS:3085) and (STAT:4100 or STAT:5100). Requirements: multivariate calculus and linear algebra.

ACTS:4180 Life Contingencies I 3 s.h.
Life insurance, life annuities, benefit premiums and reserves. Offered spring semesters. Prerequisites: ACTS:4130 and (ACTS:3080 or ACTS:3085) and (STAT:4100 or STAT:5100). Requirements: grade of C+ or higher in ACTS:4130, and grade of C+ or higher in ACTS:3080 or ACTS:3085.

ACTS:4280 Life Contingencies II 3 s.h.
Continuation of ACTS:4180; net and gross premium reserves, multistate models, universal life insurance, interest rate risk. Offered fall semesters. Prerequisites: ACTS:4180. Requirements: grade of C+ or higher in ACTS:4180.

ACTS:4380 Mathematics of Finance II 3 s.h.
Derivatives markets, options on stocks and interest rates, financial applications. Offered spring semesters. Prerequisites: ACTS:4130 and (ACTS:3080 or ACTS:3085) and (STAT:4100 or STAT:5100). Requirements: grade of C+ or higher in ACTS:4130, and grade of C+ or higher in ACTS:3080 or ACTS:3085.

Statistics

STAT:3100 Introduction to Mathematical Statistics I 3 s.h.
Descriptive statistics, probability, discrete and continuous distributions, sampling, sampling distributions. Prerequisites: MATH:1560 or MATH:1860.

STAT:3101 Introduction to Mathematical Statistics II 3 s.h.
Estimation, testing statistical hypotheses, linear models, multivariate distributions, nonparametric methods. Prerequisites: STAT:3100.

STAT:3120 Probability and Statistics 4 s.h.
Models, discrete and continuous random variables and their distributions, estimation of parameters, testing statistical hypotheses. Prerequisites: MATH:1560 or MATH:1860.

STAT:3200 Applied Linear Regression 3 s.h.
Regression analysis with focus on applications; model formulation, checking, selection; interpretation and presentation of analysis results; simple and multiple linear regression; logistic regression; ANOVA; hands-on data analysis with computer software. Prerequisites: STAT:2010 or STAT:2020. Same as IE:3760.

STAT:3210 Experimental Design and Analysis 3 s.h.
Single- and multifactor experiments; analysis of variance; multiple comparisons; contrasts; diagnostics; fixed, random, and mixed effects models; designs with blocking and/or nesting; two-level factorials and fractions thereof; use of statistical computing packages. Prerequisites: STAT:3200.

**STAT:3510 Biostatistics** 3 s.h.
Statistical concepts and methods for the biological sciences; descriptive statistics, elementary probability, sampling distributions, confidence intervals, parametric and nonparametric methods, one-way ANOVA, correlation and regression, categorical data. Prerequisites: MATH:0100.

**STAT:3620 Quality Control** 3 s.h.
Basic techniques of statistical quality control; application of control charts for process control variables; design of inspection plans and industrial experimentation; modern management aspects of quality assurance systems. Offered fall semesters. Prerequisites: STAT:2020. Same as IE:3600, CEE:3142.

**STAT:4100 Mathematical Statistics I** 3 s.h.
Probability, conditional probability, random variables, distribution and density functions, joint and conditional distributions, various families of discrete and continuous distributions, mgf technique for sums, convergence in distribution, convergence in probability, central limit theorem. Prerequisites: MATH:2700 and MATH:2850.

**STAT:4101 Mathematical Statistics II** 3 s.h.
Transformations, order statistics, point estimation, sufficient statistics, Rao-Blackwell Theorem, delta method, confidence intervals, likelihood ratio tests, applications. Prerequisites: STAT:4100.

**STAT:4143 Introduction to Statistical Methods** 3 s.h.
Analysis, interpretation of research data; descriptive statistics; introduction to probability, sampling theory, statistical inference (binomial, normal distribution, t-distribution models); linear correlation, regression. Same as PSQF:4143.

**STAT:4200 Statistical Methods and Computing** 3 s.h.
Methods of data description and analysis using SAS; descriptive statistics, graphical presentation, estimation, hypothesis testing, sample size, power; emphasis on learning statistical methods and concepts through hands-on experience with real data. Prerequisites: MATH:1005. Recommendations: graduate standing in non-statistics or less quantitative major.

**STAT:4510 Regression, Time Series, and Forecasting** 3 s.h.
Regression analysis, forecasting, time series methods; use of statistical computing packages. Prerequisites: STAT:4101 or STAT:5101. Requirements: grade of C+ or higher in STAT:4101 or STAT:5101.

**STAT:4520 Bayesian Statistics** 3 s.h.
Bayesian statistical analysis, with focus on applications; Bayesian and frequentist methods compared; Bayesian model specification, choice of priors, computational methods; hands-on Bayesian data analysis using appropriate software; interpretation and presentation of analysis results. Prerequisites: STAT:3200 and (STAT:3100 and STAT:3101) or STAT:3120 or (STAT:4100 and STAT:4101). Same as PSQF:4520.

**STAT:4740 Large Data Analysis** 3 s.h.
Current areas that deal with problem of Big Data; techniques from computer science, mathematics, statistics; high performance and parallel computing, matrix techniques, cluster analysis, visualization; variety of applications including Google PageRank, seismology, Netflix-type problems, weather forecasting; fusion of data with simulation; projects. Prerequisites: CS:1210 and MATH:2700 and (STAT:2010 or STAT:2020). Same as CS:4740, MATH:4740.

## Graduate

### Actuarial Science

**ACTS:6160 Topics in Actuarial Science** arr.
Prerequisites: ACTS:4180 and ACTS:4380. Requirements: grades of C+ or higher in ACTS:4180 and ACTS:4380.

**ACTS:6480 Loss Distributions** 3 s.h.
Severity, frequency, and aggregate models and their modifications; risk measures; construction of empirical models. Offered spring semesters. Prerequisites: STAT:4101 or STAT:5101. Corequisites: ACTS:6580. Requirements: grade of C+ or higher in ACTS:4101 or ACTS:5101.

**ACTS:6580 Credibility and Survival Analysis** 3 s.h.
Construction and selection of parametric models; credibility; simulation. Offered spring semesters. Prerequisites: STAT:4101 or STAT:5101. Corequisites: ACTS:6480. Requirements: grade of C+ or higher in ACTS:4101 or ACTS:5101.

**ACTS:7730 Advanced Topics in Actuarial Science/Financial Mathematics** arr.

### Statistics

**STAT:5090 ALPHA Seminar** 1 s.h.
Resources available to students, program requirements, tips for academic success, professional statistical organizations, library and career center resources, statistical computing, scientific document preparation, history of statistics. Requirements: graduate standing in statistics.

**STAT:5100 Statistical Inference I** 3 s.h.
Review of probability, distribution theory (multiple random variables, moment-generating functions, transformations, conditional distributions), sampling distributions, order statistics, convergence concepts, generating random samples. Prerequisites: MATH:2850 and STAT:3101.
STAT:5101 Statistical Inference II 3 s.h.
Continuation of STAT:5100; principles of data reduction, point estimation theory (MLE, Bayes, UMVU), hypothesis testing, interval estimation, decision theory, asymptotic evaluations. Prerequisites: STAT:5100.

STAT:5120 Mathematical Methods for Statistics 3 s.h.
Real numbers, point set theory, limit points, limits, metric spaces, continuity, sequences and series, Taylor series (multivariate), uniform convergence, Riemann-Stieltjes integrals. Requirements: statistics graduate standing.

STAT:5200 Applied Statistics I 4 s.h.
Introduction to computing environments and statistical packages, descriptive statistics, basic inferential methods (confidence intervals, chi-square tests); linear models (regression and ANOVA models—specification and assumptions, fitting, diagnostics, selection, testing, interpretation). Prerequisites: STAT:3101. Corequisites: STAT:4100 or STAT:5100. Requirements: facility with matrix algebra.

STAT:5201 Applied Statistics II 3 s.h.
Design of experiments and analysis of designed experiments; models for fixed and random effects; mixed models; design and analysis of complex plans; sample-size methods. Prerequisites: STAT:5200.

STAT:5400 Computing in Statistics 3 s.h.
R; database management; graphical techniques; importing graphics into word-processing documents (e.g., LaTeX); creating reports in LaTeX; SAS; simulation methods (Monte Carlo studies, bootstrap, etc.). Prerequisites: STAT:3200, and STAT:3120 or STAT:3210 or STAT:4101. Corequisites: STAT:5100 and STAT:5200, if not taken as prerequisites.

STAT:5610 Design and Analysis of Biomedical Studies 3 s.h.
Simple and multiple linear regression and correlation; one- and two-way layout considerations in planning experiments; factorial experiments; multiple comparison techniques; orthogonal contrasts. Offered spring semesters. Prerequisites: BIOS:5110. Same as BIOS:5120.

STAT:5810 Research Data Management 3 s.h.
Overview of problems encountered in gathering and processing data from biomedical investigations; introduction to data management techniques useful in biomedical studies; introduction to Microsoft Access. Offered fall semesters. Requirements: Python or Java or C programming capability. Same as BIOS:5310.

STAT:6220 Statistical Consulting 3 s.h.
Realistic supervised data analysis experiences, including statistical packages, statistical graphics, writing statistical reports, dealing with complex or messy data. Offered spring semesters. Prerequisites: (STAT:3200 and STAT:3210) or (STAT:5200 and STAT:5201). Requirements: for undergraduate majors — major g.p.a. of 3.00 or above, and grades of B or higher in STAT:3200 and STAT:3210.

STAT:6300 Probability and Stochastic Processes I 3 s.h.
Conditional expectations; Markov chains, including random walks and gambler's ruin; classification of states; stationary distributions; branching processes; Poisson processes; Brownian motion. Prerequisites: STAT:4100.

STAT:6301 Probability and Stochastic Processes II 3 s.h.
Markov chains with continuous state space, Martingales, random walks, Brownian motion and other continuous-time Markov chains, simulation methods. Prerequisites: STAT:6300.

STAT:6510 Applied Generalized Regression 3 s.h.
Applications of semiparametric models, generalized linear models, nonlinear normal errors models, correlated response models; use of statistical packages, especially SAS. Requirements: introductory statistics and applied linear models.

STAT:6513 Intermediate Statistical Methods 4 s.h.

STAT:6514 Correlation and Regression 4 s.h.

STAT:6516 Design of Experiments 4 s.h.

STAT:6530 Environmental and Spatial Statistics 3 s.h.
Methods for sampling environmental populations, sampling design, trend detection and estimation, geostatistics, kriging, variogram estimation, lattice data analysis, analysis of spatial point patterns. Prerequisites: STAT:3200 and STAT:4101.

STAT:6540 Applied Multivariate Analysis 3 s.h.

STAT:6547 Nonparametric Statistical Methods 3 s.h.
Selected nonparametric methods; one- and two-sample location tests and estimation methods, measures of association, analyses of variance; emphasis on relationships to classical parametric procedures. Prerequisites: PSQF:6243 or STAT:3120. Same as PSQF:6247.

**STAT:6550 Introductory Longitudinal Data Analysis** 3 s.h.
Statistical models and estimation methods used to analyze correlated data (e.g., same subject measured repeatedly); emphasis on use of statistical software. Offered fall semesters of odd years. Prerequisites: STAT:3200 or STAT:6510 or BIOS:5730 or BIOS:6110. Same as BIOS:6310.

**STAT:6560 Applied Time Series Analysis** 3 s.h.
General stationary, nonstationary models, autocovariance autocorrelation functions; stationary, nonstationary autoregressive integrated moving average models; identification, estimation, forecasting in linear models; use of statistical computer packages. Offered spring semesters. Prerequisites: STAT:3101 and (STAT:3200 or STAT:5200).

**STAT:6970 Topics in Statistics** 3 s.h.

**STAT:6990 Readings in Statistics** arr.

**STAT:7100 Advanced Inference I** 3 s.h.
Concepts of convergence, asymptotic methods including the delta method, sufficiency, asymptotic efficiency, Fisher information and information bounds for estimation, maximum likelihood estimation, the EM-algorithm, Bayes estimation, decision theory. Prerequisites: STAT:5101 and STAT:5120.

**STAT:7101 Advanced Inference II** 3 s.h.
Hypothesis testing, asymptotics of the likelihood ratio test, asymptotic efficiency, statistical functionals, robustness, bootstrap and jackknife, estimation with dependent data. Prerequisites: STAT:7100.

**STAT:7190 Seminar: Mathematical Statistics** arr.

**STAT:7200 Linear Models** 4 s.h.
Linear spaces and selected topics in matrix algebra, multivariate normal distribution and distributions of quadratic forms, full-rank and non-full-rank linear models, estimability, least squares and best linear unbiased estimator, interval estimation, hypothesis testing, random and mixed models, best linear unbiased prediction, variance component estimation. Prerequisites: STAT:5101 and STAT:5200 and STAT:5201.


**STAT:7300 Foundations of Probability I** 3 s.h.
Probability theory, with emphasis on constructing rigorous proofs; measure spaces, measurable functions, random variables and induced measures, distribution functions, Lebesque integral, product measure and independence, Borel Cantelli lemma, modes of convergence. Prerequisites: STAT:5120.

**STAT:7301 Foundations of Probability II** 3 s.h.
Laws of large numbers, characteristic functions and properties, central limit theorem, Radon-Nikodym derivatives, conditional expected value and martingales. Prerequisites: STAT:7300.

**STAT:7390 Seminar: Probability** arr.

**STAT:7400 Computer Intensive Statistics** 3 s.h.
Computer arithmetic; random variate generation; numerical optimization; numerical linear algebra; smoothing techniques; bootstrap methods; cross-validation; MCMC; EM and related algorithms; other topics per student/instructor interests. Prerequisites: STAT:3101 and (STAT:5200 or BIOS:5710). Requirements: proficiency in Fortran or C or C++ or Java.

**STAT:7510 Analysis of Categorical Data** 3 s.h.
Models for discrete data, distribution theory, maximum likelihood and weighted least squares estimation for categorical data, tests of fit, models selection. Offered spring semesters. Prerequisites: (STAT:4101 or STAT:5101) and (STAT:5200 or BIOS:5720). Same as BIOS:7410.

**STAT:7520 Bayesian Analysis** 3 s.h.
Decision theory, conjugate families, structure of Bayesian inference, hierarchical models, asymptotic approximations for posterior distributions, Markov chain Monte Carlo methods and convergence assessment, model adequacy and model choice. Prerequisites: STAT:5101 and STAT:5200 and STAT:5400.

**STAT:7560 Time Series Analysis** 3 s.h.
Stationary time series, ARIMA models, spectral representation, linear prediction inference for the spectrum, multivariate time series, state space models and processes, nonlinear time series. Prerequisites: STAT:4101 and STAT:6560.

**STAT:7570 Survival Data Analysis** 3 s.h.
Types of censoring and truncation; survival function estimation; life tables; parametric inference using exponential, Weibull, and accelerated failure time models; nonparametric tests; sample size calculation; Cox regression with stratification and time-dependent covariates; regression diagnostics; competing risks; analysis of correlated survival data. Offered fall semesters. Prerequisites: BIOS:5720 and (STAT:4101 or STAT:5101). Same as BIOS:7210.

**STAT:7990 Reading Research** arr.
Theatre Arts

Director, Division of Performing Arts
• Alan MacVey

Chair, Department of Theatre Arts
• Alan MacVey

Undergraduate major: theatre arts (B.A.)
Undergraduate minor: theatre arts
Graduate degree: M.F.A. in theatre arts
Faculty: http://theatre.uiowa.edu/people
Web site: http://theatre.uiowa.edu/

The Department of Theatre Arts offers academic programs for undergraduate and graduate students. It also stages live performances throughout the academic year and during the summer.

The department is one of three academic units in the Division of Performing Arts (p. 227). Students have the opportunity to earn a major in theatre arts and a second major in one of the other units within the division—dance or music. It also participates in offering the division's Certificate in Performing Arts Entrepreneurship (p. 498).

Undergraduate Programs of Study

• Major in theatre arts (Bachelor of Arts)
• Minor in theatre arts

The undergraduate program in theatre arts is based on the philosophy that the best way to develop future artists is to expose them to rigorous professional practice within the framework of a liberal arts and sciences education.

Department of Theatre Arts students take workshop courses in acting, directing, design, technical theatre, stage management, and playwriting and complement them with classes in dramatic literature, history, and criticism. Students also are encouraged to explore a range of courses throughout the University. Around 25 public productions are staged each year, providing additional opportunities to learn the theatre craft and to develop a personal artistic vision.

The department also educates students who plan to enter other fields in which understanding of the arts and experience with theatre skills are useful. Some earn a major in theatre arts, occasionally with a second major in another discipline. Others take theatre classes as nonmajors or earn a minor; see "Minor" and "Courses for Nonmajors" in this section of the Catalog.

Bachelor of Arts

The Bachelor of Arts with a major in theatre arts requires a minimum of 120 s.h., including 33 s.h. of work for the major. Students must maintain a g.p.a. of at least 2.00 in all courses for the major and in all UI courses for the major. They also must complete the College of Liberal Arts and Sciences General Education Program (p. 313).

The curriculum for the theatre arts major listed below constitutes the basic experience for all undergraduate theatre arts students. Registration in some courses for the major requires special permission. Contact the Department of Theatre Arts for details.

Students who transfer to the University from other accredited two- or four-year institutions must demonstrate that they have successfully completed course work equivalent to the basic requirements of the Department of Theatre Arts and the University of Iowa before they may take advanced-level electives. If a student completes the courses listed for the approved 2 Plus 2 theatre arts program at Kirkwood Community College, Iowa Central Community College, or Indian Hills Community College in Iowa, those courses are automatically counted toward requirements for the theatre arts major at the University of Iowa. Consult the department's director of undergraduate studies for more information.

In planning course work, especially electives, students should be guided by the College of Liberal Arts and Sciences maximum hours rule: students earning a B.A. or B.S. may apply a maximum of 56 s.h. earned in one department to the minimum 120 s.h. required for graduation, whether or not the course work is accepted toward requirements for the major; students who earn more than 56 s.h. from one department may use the additional semester hours to satisfy requirements for the major (if the department accepts them), and the grades they earn become part of their grade-point average; but they cannot apply the additional semester hours to the minimum 120 s.h. required for graduation.

Students majoring in theatre arts may count a maximum of 23 s.h. earned in Department of Theatre Arts elective courses (prefix THTR) toward the Bachelor of Arts. Theatre arts elective credit beyond 23 s.h. is listed on the transcript but does not count toward the 120 s.h. required for graduation.

Students must complete a course's prerequisites before registering for the course. They normally complete the following required courses (from the "Theatre Foundation Courses" list below) within their first four semesters in the major:

- THTR:2140 Acting I
- THTR:2402 Script Analysis
- THTR:2410 History of Theatre and Drama I, and
- THTR:2411 History of Theatre and Drama II.

Students who complete THTR:1400 Theatre and Society: Ancients and Moderns or THTR:1401 Theatre and Society: Romantics and Rebels before declaring a major in theatre arts must consult the undergraduate director before they may register for THTR:2410 History of Theatre and Drama I or THTR:2411 History of Theatre and Drama II.

The theatre arts major requires the following course work.

THEATRE FOUNDATION COURSES

All of these:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>THTR:2140 Acting I</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>THTR:2215 Theatre Technology</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>THTR:2402 Script Analysis</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>THTR:2410 History of Theatre and Drama I</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>THTR:2411 History of Theatre and Drama II</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

Elective theatre arts courses (approved courses include THTR:2301 and all courses numbered 3000 or above) 6 s.h.

Design—one of these:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>THTR:2200 Elements of Design</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>THTR:3230 Scene Design I</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>
Student Auditions for Theatre Arts Productions

Theatre arts majors are encouraged to audition for the department's productions in general auditions at the beginning of the fall semester. Students normally present a three-minute audition consisting of two contrasting pieces. From this audition, callback lists are posted for major productions offered during the first semester. Additional general auditions normally are scheduled in early November and in March.

Students in other majors are welcome to audition for the department's productions, as are community members (see "Productions and Auditions" later in this section). For academic considerations, theatre arts majors are given first consideration for roles.

Materials and information about the general auditions are available from the Department of Theatre Arts office in August. Notices of auditions for all subsequent productions are posted on the department's call board.

Four-Year Graduation Plan

The following checkpoints list the minimum requirements students must complete by certain semesters in order to stay on the University's Four-Year Graduation Plan.

Before the fifth semester begins: three courses in the major chosen from THTR:2140 Acting I, THTR:2402 Script Analysis, THTR:2410 History of Theatre and Drama I, and THTR:2411 History of Theatre and Drama II

Before the seventh semester begins: three more courses in the major, two semesters of production credit, and at least 90 s.h. earned toward the degree

Before the eighth semester begins: two more courses in the major and one more semester of production credit

During the eighth semester: enrollment in all remaining course work in the major, all remaining General Education courses, and a sufficient number of semester hours to graduate

Iowa Degree in Three

University of Iowa majors who are strongly motivated can graduate with a degree in three years under the Iowa Degree in Three. The program is available to students who can complete more semester hours each term than they would on the Four-Year Graduation Plan.

Students sign an agreement during their first semester of enrollment; meet with an advisor at least once a semester to review their plans and progress; take courses during summer sessions, if necessary; meet specific course checkpoints; and maintain the grade-point average required for the major.

Students are allowed to bring Advanced Placement (AP), College Level Examination Program (CLEP), or transfer credit upon admission to reduce the number of semester hours required for their degree. They should consult their advisor about the program.

Honors in the Major

Students majoring in theatre arts have the opportunity to graduate with honors in the major. Students who wish to graduate with honors should declare their intention to the department's honors advisor. To graduate with
honors in the major, students must maintain a g.p.a. of at least 3.33 in the major; complete at least 12 s.h. of work in Department of Theatre Arts honors courses, which must include THTR:4692 Honors Theatre Arts; and give a creative presentation or performance or write an honors thesis.

Students who elect to give a creative presentation or performance must have senior standing and must complete at least one honors course before their proposed project may be approved. They must apply to the director of theatre for approval of their project by April 1 of the year before the project is to be scheduled (projects are not guaranteed a production slot). They also must enroll in THTR:4692 Honors Theatre Arts during the semester in which they complete their presentation or performance.

For more information about theatre arts honors requirements, contact the Department of Theatre Arts office.

In addition to honors in their majors, undergraduate students have a variety of opportunities for honors study and activities through membership in the University of Iowa Honors Program; visit Honors at Iowa to learn about the University’s honors program.

Minor

The minor in theatre arts requires a minimum of 15 s.h. in theatre arts courses, including 12 s.h. in courses considered advanced for the minor taken at the University of Iowa. Students must maintain a cumulative g.p.a. of at least 2.00 in all courses for the minor and in all UI courses for the minor. Course work in the minor may not be taken pass/nonpass. Students must complete all prerequisites for the courses they choose for the minor.

All theatre courses are open to students minoring in theatre arts except THTR:2140 Acting I, which is normally reserved for students earning the theatre arts major.

Theatre arts minors who are interested in acting usually take THTR:1140 Basic Acting and THTR:1141 Basic Acting II. Then they may request permission to enroll in THTR:3140 Acting II. When enrollment allows, they also may request permission to take THTR:2140 Acting I.

The following courses are considered advanced for the minor.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>THTR:1141</td>
<td>Basic Acting II</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>THTR:2140</td>
<td>Acting I</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>THTR:2200</td>
<td>Elements of Design</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>THTR:2215</td>
<td>Theatre Technology</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>THTR:2301</td>
<td>Playwriting I</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>THTR:2402</td>
<td>Script Analysis</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>THTR:2410</td>
<td>History of Theatre and Drama I</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>THTR:2411</td>
<td>History of Theatre and Drama II</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

Courses numbered 3000 or above, excluding THTR:3220 and THTR:3287 (some courses require special permission)

Contact the Department of Theatre Arts for more information about how to meet the requirements for the minor.

Courses for Nonmajors

Most theatre arts courses are open to all students, regardless of their majors, and are appropriate for nonmajors interested in theatre. The following courses are designed specifically for nonmajors.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>THTR:1141</td>
<td>Basic Acting II</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>THTR:1410</td>
<td>Musical Theatre</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>THTR:1412</td>
<td>The Arts in Performance</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>THTR:2120</td>
<td>Movement: Special Topics</td>
<td>2-3 s.h.</td>
</tr>
<tr>
<td>THTR:3150</td>
<td>Public Speaking</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>THTR:3210</td>
<td>Makeup Design for the Stage</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>THTR:3301</td>
<td>Playwriting II</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>THTR:3510</td>
<td>Introduction to Arts Management</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>THTR:3520</td>
<td>New Ventures in the Arts</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>THTR:3521</td>
<td>Acting for Singers and for Dancers</td>
<td>2 s.h.</td>
</tr>
</tbody>
</table>

For a complete list of theatre arts courses, see "Courses" below.

Several of the department’s courses are approved for General Education; look for courses with the prefix THTR in the area lists under "Culture, Society, and the Arts" in the General Education Program (p. 313) section of the Catalog.

Graduate Program of Study

• Master of Fine Arts in theatre arts

Master of Fine Arts

The Master of Fine Arts program in theatre arts requires 61-82 s.h. of graduate credit, depending on the student’s specialty area. Students normally must complete six semesters in residence (internships may be substituted).

The graduate program is dedicated to creative development of theatre artists. Graduates have a solid background in major performance theories, dramatic literature, and practices of the past and present as well as in the craft of their chosen specialties.

Special attention is given to understanding the role and importance of live theatre in society. Interactions among the various theatre disciplines are emphasized, both in classes and through the department’s extensive production program. Particular emphasis is placed on the development of new works for the theatre.

Students must make normal progress toward completion of the degree requirements to remain in the program: they must maintain a g.p.a. of at least 3.00 overall and in all course work within the primary area of concentration, and they must build a record of substantial creative work of high quality. Students who fail to make normal progress are placed on academic probation and given one additional semester to demonstrate their qualifications for earning the degree.

Contact the Department of Theatre Arts for specific information on any of the M.F.A. specialty areas.

Admission

Students who demonstrate exceptional ability in acting, directing, dramaturgy, playwriting, design, or stage management may apply for admission to the program of study and production leading to the M.F.A. Admission is based on an interview, audition, and/or a portfolio of relevant work, the undergraduate record or other proof of artistic accomplishment, and letters of recommendation.

Submission of playscripts is the most important element in gaining admission to the Playwrights Workshop.
Applicants must meet the admission requirements of the Graduate College; see the Manual of Rules and Regulations of the Graduate College.

Productions and Auditions

The Department of Theatre Arts presents around 25-30 public productions each year. These include a subscription series of five plays, a festival of new works by students, and other productions, many of them new plays.

Special attention is given to the process of developing new works and to the collaborative process that involves writers, directors, designers, dramaturgs, stage managers, and actors. Graduate and undergraduate students, faculty, and visiting guest artists work together on large and small projects throughout the year.

Auditions for Theatre Arts Productions

Auditions for theatre arts productions are open to everyone, including all University of Iowa students and members of the local community. Theatre arts students are given first priority for roles, but many roles are available throughout the year, so many students in other majors and nonstudent actors are cast each season. Occasionally, professional actors are employed.

General auditions are held at the beginning of the fall semester, and callback lists are posted during the semester. Additional general auditions usually are scheduled in early November and in March. Information about auditions is available from the Department of Theatre Arts office in August. Notices of auditions are posted on the department's call board.

Facilities

The University of Iowa has one of the finest educational theatre complexes in the country. The Theatre Building offers four theatres and up-to-date facilities for classroom, laboratory, shop, and performance work.

The E.C. Mabie Theatre, a continental-style, 457-seat proscenium playhouse, is one of the finest theatres of its type in the United States. The David Thayer Theatre is a "black box" production space; its flexible seating units accommodate from 140 to 225 people and allow modification of space and audience relationships. Theatre B, which seats 144, is an open-stage theatre dedicated primarily to the production of new and experimental works. The flexible studio theatre seats 50.

In addition to classrooms for acting and directing, several spaces are designed for teaching particular aspects of dramatic studies. The Cosmo Catalano Acting Studio is for study of movement and motion by acting students. The Arnie Gillette Design Studio serves as classroom and studio workshop for design students.

To support its production schedule and to provide students with an appropriate range of experience, the department maintains shops for building, painting, maintaining, and storing scenery, costumes, and properties. Using these shops, students learn to work in metal, plastics, canvas, and wood.

Courses

Lower-Level Undergraduate

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>THTR:1000</td>
<td>First-Year Seminar</td>
<td>1 s.h.</td>
</tr>
<tr>
<td>THTR:1010</td>
<td>Art of the Theatre</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>THTR:1120</td>
<td>Basic Acting for Language Learners</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>THTR:1140</td>
<td>Basic Acting</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>THTR:1141</td>
<td>Basic Acting II</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>THTR:1400</td>
<td>Theatre and Society: Ancients and Moderns</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>THTR:1401</td>
<td>Theatre and Society: Romantics and Rebels</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

Small discussion class taught by a faculty member; topics chosen by instructor; may include outside activities (e.g., films, lectures, performances, readings, visits to research facilities). Requirements: first- or second-semester standing.

Exploration of a single topic in a series of lectures by faculty presenting divergent perspectives; illuminates intellectual adventure inherent in liberal arts and sciences; encourages discovery of majors and other areas of study within the College of Liberal Arts and Sciences. Same as CLAS:1001, RELS:1010, CS:1001, CSD:1001, PHIL:1001, ENGL:1001, BIOL:1001, ARTS:1001.


Development of theatrical creativity to enhance English language skills through acting games, monologues, and scene work; exercises in concentration, relaxation, communication, imagination, observation, sensory awareness. Same as ESL:1950.

Concentration, relaxation, imagination, observation, communication, sensory awareness; development of theatrical creativity through objectives, obstacles, action, conflict, spontaneity; development of a scene from scripts. Requirements: non-theatre arts major. GE: Literary, Visual, and Performing Arts.

Continuation of THTR:1140; emphasis on development of scenes. Prerequisites: THTR:1140. Requirements: non-theatre arts major.

Representative plays as performed in social contexts of ancient Egypt; classical Greece, Rome, India, and Japan; and medieval and early modern Europe. Duplicates THTR:2410. GE: Historical Perspectives; Literary, Visual, and Performing Arts.

Representative plays as performed in social contexts of revolutionary and modern Europe and postwar United States. Duplicates THTR:2411. GE: Historical Perspectives; Literary, Visual, and Performing Arts.
**THTR:1410 Musical Theatre** 3 s.h.
American musical theatre's form, function, evolution; major composers (Berlin, Gershwin, Rodgers and Hammerstein, Sondheim), lesser-known and contemporary writers; roots of the rock musical, future of musical theatre, how musicals reflect their own eras and cultural attitudes of their times; readings, recordings, videos. Ability to read music not required.

**THTR:1411 Comedy and Society** 3 s.h.
How comedy reflects, comments upon, and intersects with western culture, society, and identity; roots of western comedy, satire, censorship; stand-up comedians, improv and sketch troupes, satirists; race, gender and sexuality, class perception; how portrayals of African Americans in popular culture evolved from 19th century to present; videos, readings, live performances. GE: Values, Society, and Diversity.

**THTR:1412 The Arts in Performance** 3 s.h.

**THTR:2120 Movement: Special Topics** 2-3 s.h.
Specialized study in movement techniques and movement styles for body conditioning; development of yoga techniques; varied topics.

**THTR:2140 Acting I** 3 s.h.
Development of creativity, imagination, and openness through exercises to engage mind, body, and voice in theatrical play and scene work. Requirements: theatre arts major, or theatre arts minor and THTR:1140.

**THTR:2200 Elements of Design** 3 s.h.
Development of visual literacy; manipulation of line, shape, color, value, texture, form; development of designs for theatre through techniques explored in class.

**THTR:2215 Theatre Technology** 3 s.h.
Theatrical production; technology and backstage operations including sound, projections, lighting, scenery, costumes, stage management.

**THTR:2220 Production Lab** 1-3 s.h.
Practical experience in physical construction and operation of live theatre; theatre department productions provide lab experiences for applied learning in technical theatre and run crew opportunities in scenery, costumes, lighting, sound, and stage management.

**THTR:2301 Playwriting I** 3 s.h.
Elements of playwriting; emphasis on analysis and discussion of original student writing. GE: Literary, Visual, and Performing Arts.

**THTR:2402 Script Analysis** 3 s.h.
Basic skills in critical reading and close analysis of dramatic texts, with focus on dramatic structure, challenges of putting texts into production.

**THTR:2405 Staging Americans: U.S. Cultures Through Theatre and Performance** arr.
Role of American theatre as a complex tapestry of race, gender, sexuality, and disability; examination of plays and performance outside primarily white-male canon; contemporary social practice and cultural politics in local and national contexts. GE: Values, Society, and Diversity.

**THTR:2410 History of Theatre and Drama I** 3 s.h.
Major developments in Anglo-European, Indian, Asian, and African theatre and drama, 3000 B.C.E. to C.E. 1700; sociopolitical, economic, and cultural circumstances of original productions. Offered spring semesters. GE: Historical Perspectives; Literary, Visual, and Performing Arts.

**THTR:2411 History of Theatre and Drama II** 3 s.h.
Continuation of THTR:2410, 1700 to 1960; revolutionary and modern European theatre and culturally diverse postwar U.S. theatre. Offered fall semesters. GE: Historical Perspectives; Literary, Visual, and Performing Arts.

**THTR:2610 Acting for Success** 3 s.h.
How skills learned by actors in the theatre world can be applied to presentations and interactions in business, education, and beyond; business world reliance on technology for communication; ability to connect and communicate on a personal level with others as the x-factor to stand out as a team player and a leader; acting techniques traditionally used in theatre to open up communication in office and interviews; presentations and elevator pitches (armed with techniques to avoid stage fright); how to connect and bring authentic self to everything you do. Same as RHET:2610.

**Upper-Level Undergraduate and Graduate**

**Acting and Directing**

**THTR:3070 Dance Kinesiology** 3 s.h.
Body science related to demands of dance; structural and muscular analysis for efficient, effective dance training and prevention of injuries; investigation of skeletal and ligamentous structure for working knowledge of how the body produces movement; joint actions and restrictions, common injuries to those sites; attachments of the voluntary muscles, pathways and potential actions; neuromuscular analysis of an action; functional skeletal alignment; how individual differences may affect movement performance. Prerequisites: HHP:1100. Same as DANC:3070.

**THTR:3110 Voice for the Actor** 3 s.h.
Progressive development of voice and speech for theatre; physical awareness, relaxation, breathing, freeing the sound channel, resonance, articulation; application of voice work through prose, poetry, text. Prerequisites: THTR:1141 or THTR:2140.

**THTR:3120 Theatre Movement** 3 s.h.
The body as a tool for dramatic expression; basic principles and practices of stage movement; approaches to physical technique. Prerequisites: THTR:2140. Requirements: theatre arts major.
THTR:3130 Singing for Actors 2 s.h.
Skill development for healthy, effective singing in the musical theatre style; techniques of vocal production through breath management, resonance, articulation, flexibility; song interpretation and repertoire. Recommendations: for MUS:3520 — concurrent registration in MUS:1020. Same as MUS:3520.

THTR:3140 Acting II 3 s.h.
Extension of work begun in THTR:2140; scene study, with focus on contemporary realism and development of collaborative dynamic. Prerequisites: THTR:1141 or THTR:2140.

THTR:3150 Public Speaking 3 s.h.
How to be an effective and confident communicator; exercises designed to develop and improve vocal sound, vocal strength, clarity of speech; appropriate interpretation of text.

THTR:3151 Accents and Dialects 3 s.h.
Varied topics on a rotational basis, may include vocal study of classical text including Shakespeare, dialects, and voice in classical and contemporary comedy. Prerequisites: THTR:3110.

THTR:3160 Movement Styles 3 s.h.
Intensive study of a selected movement style (e.g., mask, clown, commedia dell'arte). Prerequisites: THTR:3120.

THTR:3162 Movement: Special Topics II 3 s.h.
Specialized study in movement techniques and movement styles for body conditioning; intermediate development of yoga techniques; varied topics. Prerequisites: THTR:2120.

THTR:3315 Standup Comedy Practicum 3 s.h.
Writing and performing standup comedy; emphasis less on creating a comic persona and more on pulling from and articulating personal truth; analysis of contemporary comedians and joke structure; performing original work for multiple audiences in classroom and out in community. Prerequisites: THTR:1140 or THTR:2140 or THTR:2301.

THTR:3421 Performing Autobiography 3 s.h.
Write and perform original pieces stemming from personal experiences and interests; readings and videos; genre of contemporary autobiographical performance as established artists have developed it; improvisational performance and writing exercises to foster deeper reflection on personal experiences; final staging of students' original work. Same as GWSS:3421.

THTR:3521 Acting for Singers and for Dancers 2 s.h.
Fundamentals of acting technique, with attention to demands on performers in opera, musical theater, and dance. Same as MUS:3521, DANC:3521.

THTR:3601 Theatre for Social Outreach arr.
Use of improvisation, storytelling, readers' theatre to explore complex social issues; participation in Darwin Turner Action Theatre; experience creating works that examine social issues, especially those related to cultural diversity; performances in Iowa schools and communities.

THTR:3605 Inclusive Theatre 3 s.h.
Introduction to implementation of performance opportunities for special populations (defined as those with cognitive or physical disability) and underrepresented populations. Same as EDTL:3963.

THTR:3610 Drama in the Classroom 3 s.h.
Theories of community, culture, identity in relation to language arts teaching and learning; emphasis on incorporating multiple literacies, both oral and print, into language arts curricula; action research involving oral literacy. Same as EDTL:3180.

THTR:3850 Introduction to Laban Movement Studies 2-3 s.h.
Introduction to Bartenieff Fundamentals (BF) and Laban Movement Analysis (LMA) as methods of organizing and integrating movement to support artistic goals and expanding expressive range; BF teaches body awareness, breath support, developmental patterns, ergonomically-efficient alignment, balancing of muscular strength and stretch, and coordination; LMA teaches vocabulary of expressive movement and nonverbal communication, including effort (use of energy/dynamics for expression, stamina, stress relief) and shape (how posture and gesture communicate); quality of movement that supports individual goals in artistic expression, sound production, and wellness. Same as MUS:3850, DANC:3850, DPA:3850.

THTR:3851 Introduction to the Alexander Technique 3 s.h.
The Alexander Technique and "self-use"—how movement choices affect results achieved; improvement of physical skills and presence; principles in support of performing arts (e.g., speaking, singing, playing an instrument, dancing, acting); application to skills in daily life, addressing underpinnings of movement; physical participation (e.g., lying down, rolling, sitting, standing, locomotion). Same as DPA:3851, MUS:3851, DANC:3851.

THTR:4144 Acting: Special Topics 3 s.h.
Specialized study in a specific aspect or theory of acting.

THTR:4180 Directing I 3 s.h.
Basic elements of stage direction; exercises in composition, emphasis, movement, rhythm, directorial analysis; director's role in production process; short scenes, projects, papers. Prerequisites: (THTR:1140 or THTR:2140) and (THTR:2402 or CINE:1601).

THTR:4182 Directing II 3 s.h.
Continuation of THTR:4180; practical work in stage direction culminating in a larger directing project. Prerequisites: THTR:4180.

THTR:6140 Advanced Acting 3 s.h.
Preprofessional training; may include psychophysical training in impulse, openness and the "mask," individual and group dynamics, improvisation, repetition, characterization and scene work, Shakespeare and style, on-camera, development of professional work habits and skills, audition and interview. Requirements: admission to M.F.A. program.
**THTR:6150 Vocal Technique** 3 s.h.
Skills training; voice and speech for the actor, phonetics, dialects, sound exploration, contemporary and classical text analysis. Requirements: admission to M.F.A. program.

**THTR:6160 Movement Technique** 3 s.h.
Fundamental principles and practices required for physical acting technique; basic stage movement, stage combat, mime technique, Lecoq-based improvisation; a new works project. Requirements: admission to M.F.A. program.

**THTR:6170 Graduate Acting: Special Topics** 3 s.h.
Specialized study in one aspect or theory of acting. Requirements: admission to M.F.A. program.

**THTR:6180 Director's Seminar** 1-3 s.h.
Preprofessional training in stage direction; the art and craft of directing; research, practical experience; development of new pieces; approaches to a variety of theatrical materials through concept, type, style. Requirements: admission to M.F.A. program.

**THTR:6525 Voice for Performers** 2 s.h.
Comparison of Kinesthetic techniques for singing and acting voice; relaxation, posture, breathing, tone quality, diction, interpretation. Same as CSD:6204, MUS:6525.

**Design and Technical Theatre**

**THTR:3202 Graphic Design and Identity** 3 s.h.
Series of projects focusing on creating strong graphic design and graphic identity using Adobe Creative Suite.

**THTR:3203 Computer Visualization** 3 s.h.
Creation of virtual design using Adobe Photoshop and Google SketchUp.

**THTR:3205 Concepts in Drawing** 3-4 s.h.
Intermediate-level topics; observation, theory, media, form, content; emphasis on personal direction. Prerequisites: DRAW:2310. Same as DRAW:3310.

**THTR:3206 Furniture Design I** 4 s.h.
Human interaction with interior and exterior environment. Prerequisites: TDSN:2210. Same as TDSN:3210.

**THTR:3208 Mask and Puppet Crafts** 3 s.h.
Mask and puppet design; paper mache, plaster gauze, thermal plastics, and soft sculpture techniques.

**THTR:3210 Makeup Design for the Stage** 3 s.h.
Same as DPA:3210.

**THTR:3211 Period Styles** 3 s.h.
Survey of design and motifs spanning history of western civilization through development of interior and exterior architecture, furniture, decorative themes, fashion, and fine art.

**THTR:3220 Construction Technology for New Works** 3 s.h.
Production of scenic and prop elements for the Department of Theatre Arts annual Iowa New Play Festival; basic construction and painting skills in a lab environment; weekly design and production meetings to include each student in the entire production process; run crew assignments, projects.

**THTR:3221 Technology for the Entertainment Industry** 3 s.h.
Introduction to technology skills that are at the center of the entertainment industry; programming and operating digital lighting and sound consoles, intelligent lighting systems, projection hardware and software; outdoor event rigging, metal construction, and fabrication. Same as DPA:3221.

**THTR:3223 Introduction to Lighting Technology** 3 s.h.
Training for a career as a touring or resident stage electrician in the entertainment industry; plot organization/shop orders, digital fixtures, power distribution, personal management, console configuration/control, and electrical troubleshooting/maintenance.

**THTR:3225 Makeup Design: Body Art** 3 s.h.
Advanced techniques in stage makeup design and application through analysis of forms, research, and hands-on projects.

**THTR:3230 Scene Design I** 3 s.h.
Development of theatre scenery; how to research, conceptualize, and express ideas in 3-D models, simple sketches, and drafting. Same as ARTS:3230.

**THTR:3240 Costume Design I** 3 s.h.
Introduction to theatre costumes; how to conceptualize and express ideas through rendering and 3-D mannequin projects. May be taken after THTR:4240.

**THTR:3250 Lighting Design I** 3 s.h.
How to research, conceptualize, and express ideas through light plots, other design paperwork, and theatre lighting design projects.

**THTR:3260 Sound Design for the Theatre** 3 s.h.
Introduction to digital sound recording and live sound reinforcement techniques for a variety of entertainment venues (theatre, dance, concerts, and industrial projects); creation of soundscapes using Pro Tools software; implementation of designs through the use of SFX/QLab playback systems; documentation of sound design for theoretical or realized production. Offered every other year.

**THTR:3270 Entertainment Design** 3 s.h.
Introduction to entertainment design and technology; primary focus on contemporary approaches to design and delivery of content in entertainment industry; assignment of practical projects using media servers, projection, LED arrays, video editing software, and moving light technologies. Offered every other year.
THTR:3876 Video for Performance 4 s.h.
Introduction to making video for use in a performance; how video can unlock new artistic possibilities for performance in theater, dance, and performing arts in general; focus on acquiring basic skills necessary to shoot and edit video, and project it during a performance; practices of animation, found or archival footage work, and live performance. No previous knowledge of cameras or editing equipment required. Same as CINE:3876.

THTR:4230 Scene Design II 3 s.h.
Design and execution of increasingly complex projects in a variety of formats, including perspective sketching, detailed drafting, and color models. Prerequisites: THTR:3230.

THTR:4240 Costume Design II 3 s.h.
Conceptual and analysis skills in costuming; fashion history and dress related to individual, cultural, and artistic expression. May be taken before THTR:3240.

THTR:4250 Lighting Design II 3 s.h.
Production styles and venues; skills developed through increasingly complex light plots, more precise paperwork. Prerequisites: THTR:2402 and THTR:3250.

THTR:4270 Scenic Art 3 s.h.
Techniques in scenic art for the theatre; classical trompe l’oeil scene painting, sculpting with nontraditional materials, finishing. Offered every other year.

THTR:5200 Graduate Design Seminar arr.
Graduate design in set, lighting, and costume design; teamwork; meetings with design faculty in specific disciplines; short-term projects in the theatre department; long-term projects, including summer design work, internships, and other professional opportunities during the three-year program and beyond. Prerequisites: THTR:4230 or THTR:4240 or THTR:4250.

THTR:5230 Scene Design III 3 s.h.
Complex assignments; documentation skills, scenic design preparation. Prerequisites: THTR:3230 and THTR:4230.

THTR:5240 Costume Design III 3 s.h.
Advanced projects in costume design and portfolio development. Prerequisites: THTR:4240.

THTR:5250 Lighting Design III 3 s.h.
Advanced projects in venues such as dance, opera, industrials; preparation of lighting designs for production. Prerequisites: THTR:4250.

THTR:7260 Internship in Design 1-6 s.h.
Experience as designer or assistant designer with a professional theatre, dance, or opera company or with a professional design studio. Requirements: theatre design M.F.A. enrollment.

Stage Management and Arts Management

THTR:3501 Stage Management I 3 s.h.
Duties and procedures of stage management; focus on development of production from preparatory work through performance; role of stage manager in collaboration.

THTR:3510 Introduction to Arts Management 3 s.h.
Nonprofit performing arts management and administrative principles; practical applications, trends in the field; focus on arts organizations and their key administrative positions. Same as INTD:3510, DPA:3510.

THTR:3520 New Ventures in the Arts 3 s.h.

THTR:3550 Stage Management II 3 s.h.
Duties and procedures of stage management; focus on development and understanding of leadership role of stage manager; examination of stage manager’s role in a professional theatre; topics may include equity contracts and stage managing for opera. Prerequisites: THTR:3501.

THTR:4510 Arts Leadership Seminar 3 s.h.
Performing arts management and administrative principles, practical applications, trends in arts leadership and advocacy. Prerequisites: THTR:3510 or THTR:3520 or ENTR:2000. Same as ENTR:4510, INTD:4510, DPA:4510.

THTR:5500 Stage Management: Special Topics 3 s.h.
Topics in stage management, arts production, and their professional practice. Requirements: admission to M.F.A. stage management program.

THTR:5510 Production Management 3 s.h.
Organization and supervision of theatre productions; resources, procedures for successfully mounting a theatre production or season; personnel, equipment, facility and budget management, scheduling, communication. Requirements: stage management M.F.A. enrollment.

THTR:6500 Stage Management Seminar 1-2 s.h.
Practice and techniques of stage management. Requirements: graduate stage management major.

Playwriting

THTR:3300 Advanced Playwriting 3 s.h.
Continuation of THTR:3301; original student writing, extensive rewriting; may focus on specific style, genre, or approach. Prerequisites: THTR:3301.

THTR:3301 Playwriting II 3 s.h.
Application of fundamental skills learned in THTR:2301 to more advanced study of dramatic structure and style; reading of plays, weekly writing assignments; focus on writing one-act play. Prerequisites: THTR:2301.

THTR:3310 Undergraduate Playwriting Workshop 1-3 s.h.
Workshop discussion of original full-length plays, collaborative creation of new plays, work with guest artists. Prerequisites: THTR:2301 and THTR:3301. Requirements: submission of writing sample.
THTR:3320 Writing for Film 3 s.h.
Rigorous writing for film; focus on feature-length screenplay; for students with experience in dramatic writing, fiction, or screenwriting. Requirements: completion of at least 60 s.h. or graduate standing.

THTR:3403 Free-Style Writing: Poetry, Plays, and Performances 3 s.h.
Creative writing lab experience in reading, writing, and performing poetry and short plays; expansion of students' horizons of the self; arc of innovation in African American literature from Harlem Renaissance to present, with texts from Langston Hughes and Zora Neale Hurston to Saul Williams and Jill Scott; role of the artist in society and as outsider and insider; shifting perspectives on race, gender, class; musical influences and models, from blues to house music; sensuality, spirituality; artistic reflections on the cultural moment; effects of these on literary form and performance style; students create and perform a work for an audience. Same as AFAM:3840.

THTR:5300 The Collaborative Process 3 s.h.
Development of new plays, collaboratively created works.

THTR:5600 Orientation to Graduate Studies 1-2 s.h.
Requirements: theatre arts M.F.A. enrollment.

THTR:5610 Collaborative Performance 1-4 s.h.
Collaborative experience with advanced artists from varied disciplines that culminates in a final performance; emphasis on sharing and investigating ideas, artistic intent, personal vision, and creating collaborative projects. Same as DANC:5550, DPA:5550.

THTR:6300 Guest Seminar arr.

THTR:6310 Special Topics in Playwriting 3 s.h.

THTR:7300 Playwrights Workshop 3 s.h.
Development of works by Iowa Playwrights Workshop members. Requirements: playwriting or dramaturgy M.F.A. enrollment.

Dramatic Literature, Theory, and Dramaturgy

THTR:3180 Topics in Digital Media 3 s.h.
English majors may apply this course to the following area and/or period requirement. AREA: Literary Theory and Interdisciplinary Studies. PERIOD: 20th/21st-Century Literature. Same as ENGL:3180.

THTR:3276 Medieval Drama 3 s.h.
English majors may apply this course to the following area and/or period requirement. AREA: Medieval and Early Modern Literature and Culture. PERIOD: Early Literatures Through 17th Century. Same as ENGL:3276.

THTR:3277 English Renaissance Drama 3 s.h.
English majors may apply this course to the following area and/or period requirement. AREA: Medieval and Early Modern Literature and Culture. PERIOD: Early Literatures Through 17th Century. Same as ENGL:3277.

THTR:3287 Shakespeare 3 s.h.
English majors may apply this course to the following area and/or period requirement. AREA: Medieval and Early Modern Literature and Culture. PERIOD: Early Literatures Through 17th Century. Same as ENGL:3287.

THTR:3410 African American Theatre I 3 s.h.
Works by African American playwrights and relevant historical documents, Africa through Black Renaissance; themes, history, sociopolitical context; artists forging theatrical paths under oppressive conditions; exploration through discussion, performance; literature-based course, workshop approach. Same as AFAM:3810.

THTR:3411 African American Theatre II 3 s.h.
Works by African American playwrights and relevant historical documents, Black Renaissance to present; themes, history, sociopolitical context; artists forging theatrical paths under oppressive conditions; exploration through discussion, performance; literature-based course, workshop approach. Same as AFAM:3811.

THTR:3415 Cultural Diversity and Identity 3 s.h.
Nature of personal and cultural identity within a pluralistic society; race, ethnicity, national identity, class, sexuality, and gender as categories of cultural difference. Same as GWSS:3415.

THTR:3420 Sex and Gender in Performance 3 s.h.
Relationship between sex and gender in the performing body across a range of public venues, including stage, film, athletic events, and social spaces; articles, texts, plays, films, television, and videos; attendance at live performances of theatre, sports, and other events scheduled in the University and local community; discussion format. Same as GWSS:3420.

THTR:3440 American Drama Since 1900 3 s.h.
American playwrights and plays after 1900. English majors may apply this course to the following area and/or period requirement. AREA: American Literature and Culture. PERIOD: 20th/21st-Century Literature. Same as ENGL:3440.

THTR:3462 African American Drama 3 s.h.
English majors may apply this course to the following area and/or period requirement. AREA: American Literature and Culture. PERIOD: 18th/19th-Century Literature, or 20th/21st-Century Literature. Same as ENGL:3462, AFAM:3462.

THTR:4401 American Women Playwrights: 1776-Present 3 s.h.
How women in the United States have expressed themselves in theatre since 1776; diversity of voices in works by African American, Asian American, Latina, Native American, European American, lesbian playwrights; female-authored drama and production in relation to concurrent male-authored traditions and socioeconomic, political, cultural phenomena. Same as AMST:4401.
THTR:4402 Dramas of the Spirit 3 s.h.
Western and nonwestern dramatic texts that enact or describe journeys of the human spirit; textual analysis, investigation of the notion of spirit and its relation to dramatic form. Prerequisites: THTR:2402 and THTR:2410 and THTR:2411.

THTR:4403 Studies in Drama 3 s.h.
Exploration of a specific period of dramatic literature, or the work of specific authors, or dramatic principles central to playwrighting.

THTR:4410 Shakespeare the Dramatist 3 s.h.
Exploration of a number of Shakespeare's greatest works; close textual analysis supplemented with historical, theoretical, theatrical, and philosophical considerations; special attention given to Shakespeare's dramatic method and relation of his dramaturgy to profession of theater-making.

THTR:4420 Dramatic Theory 3 s.h.
Theoretical questions of interest to dramatists and philosophers in western and nonwestern traditions; metaphysics of play; theories of character, psyche, self; narrative and nonnarrative dramatic forms. Prerequisites: THTR:2402 and THTR:2410 and THTR:2411.

THTR:5420 Dramaturgy Practicum arr.
Exploration of theoretical, creative, and practical issues that arise in working dramaturgically on both established and new plays, and in a variety of collaborative processes; practical dramaturgical exercises in script reporting, dramaturgical research, educational programming, season planning, production documentation, and writing of critical and dramaturgical essays for a general audience. Requirements: admission to M.F.A. dramaturgy program.

THTR:6400 Classical to Romantic Theatre 3 s.h.
Representative plays from the Classical to the Romantic periods—in historical context of their original productions, contemporary production potential. Requirements: theatre arts M.F.A. enrollment.

THTR:6401 Modern Drama 3 s.h.
Questions of dramatic form and content examined in-depth through close readings of modern plays.

THTR:6402 Postmodern Theatre 3 s.h.
Diverse postmodern traditions; emphasis on questions of relation of text.

THTR:6403 Shakespeare 3 s.h.
Same as ENGL:6220.

Workshops, Performances, Special Studies

THTR:4630 London Performance Study 3 s.h.
English majors may apply this course to the following area and/or period requirement. AREA: Literary Theory and Interdisciplinary Studies. PERIOD: 20th/21st-Century Literature. Same as ENGL:4172.

THTR:4690 Senior Seminar 3 s.h.
Theatre arts capstone seminar; how personal aesthetic relates one's work to great theatrical visionaries of the past and present-day practitioners; research culminating in a collaborative theatre piece. Requirements: senior standing and theatre arts major.

THTR:4691 Projects in Theatre arr.

THTR:4692 Honors Theatre Arts arr.
Development and production of a new work for film or television by writers, directors, actors.

THTR:4693 Independent Study arr.

THTR:4694 Design: Special Topics 1-3 s.h.
Specialized study in a specific aspect or theory of theatrical design.

THTR:4695 Performance Practicum 1-2 s.h.
Perform as an actor or serve as an assistant stage manager in a production of at least an hour's length, rehearsed for at least four weeks, directed by a faculty member or guest artist or graduate student, and produced by the Department of Theatre Arts.

THTR:6510 Internship in Stage Management 1-6 s.h.
Experience as stage manager or assistant stage manager with a professional theatre, dance, or opera company. Requirements: stage management M.F.A. enrollment.

THTR:6691 Projects in Theatre Advanced arr.
Create a special project under the mentorship of a faculty member; projects may include performing in a main stage production, writing, directing, or designing a play performed in the department, developing a research project that intersects production.

THTR:7601 M.F.A. Thesis 0-3 s.h.
Work related to M.F.A. thesis projects in theatre arts.
Translation

Director, Division of World Languages, Literatures, and Cultures
- Russell Ganim

Director, Translation Program
- Aron Aji (Asian and Slavic Languages and Literatures)

Graduate degree: M.F.A. in comparative literature—translation
Faculty: http://clas.uiowa.edu/dwllc/mfa-literary-translation/faculty
Web site: http://clas.uiowa.edu/dwllc/mfa-literary-translation

Translation has been an integral part of the curriculum and conversation about writing at the University of Iowa for more than 40 years. The Translation Program is committed to the idea that translation is much more than carrying work from one language to another; it also involves the linguistic, aesthetic, and ideological dimensions of works as well as the literary, cultural, and historical contexts from which those works arise.

The Translation Program enjoys close relationships with the University’s program in comparative literature; M.F.A. programs in creative writing (fiction and poetry), nonfiction writing, and playwriting; and the International Writing Program. Faculty members from departments in the Division of World Languages, Literatures, and Cultures provide resources for the Translation Program and often serve as language mentors and committee members for M.F.A. students in translation.

Graduates of the program have gone on to work in the world of professional publishing as editors and reviewers or as free-lance translators; to become university professors after earning a Ph.D.; and to pursue other careers involving cross-cultural and artistic exchange. In recent years, publishers of works by Translation Program alumni have included Greywolf, Seven Stories, Autumn Hill Books, Melville House, Word Without Borders, The Iowa Review, 91st Meridian, TWO LINES Online, Circumference, The Literary Review, Passport, Absinthe, and others.

The Translation Program is administered by the Division of World Languages, Literatures, and Cultures (p. 228).

Graduate Program of Study
- Master of Fine Arts in comparative literature—translation

Master of Fine Arts

The Master of Fine Arts program in comparative literature—translation requires 48 s.h. of graduate credit, including a thesis. Students typically complete the program and graduate in two to three years.

Translators in the program focus on creating works that can convey the timelessness of the classics or the immediacy of new poetry, fiction, and drama. Students consider ideas of literariness, style, cultural politics, authority, and how these come into play in the relationships between authors and their texts, authors and translators, translations and readers, and in the media landscapes in which these all circulate.

The core of the M.F.A. program is TRNS:7460 Translation Workshop, which every student must take at least four times (minimum of 16 s.h. of credit). Depth in the literature and culture of the source language, creative writing (translation is considered a writing art), translation theory and history, and contemporary literary theory are basic curricular requirements, supplemented with elective courses in which students may develop an area of special interest in consultation with their advisors.

During the first year, each student has an advisory committee of two faculty members: one from the translation program, who is the student’s primary advisor; and one from comparative literature, or from one of the M.F.A. writing programs, or from a department in the Division of World Languages, Literatures, and Cultures. A third member joins the committee during the second year, when the student submits his or her thesis proposal. At least one member of the committee should be competent in the student’s source language.

The M.F.A. in comparative literature—translation requires the following work.

REQUIRED COURSES
Students complete all of these (37 s.h.):

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>TRNS:6459</td>
<td>Issues in Translation</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>TRNS:7460</td>
<td>Translation Workshop (taken at least four times)</td>
<td>16 s.h.</td>
</tr>
<tr>
<td>Courses in literature and culture of the source language</td>
<td>9 s.h.</td>
<td></td>
</tr>
<tr>
<td>Courses in contemporary literary theory (chosen in consultation with advisor)</td>
<td>3 s.h.</td>
<td></td>
</tr>
<tr>
<td>Courses in creative writing (chosen in consultation with advisor)</td>
<td>6 s.h.</td>
<td></td>
</tr>
</tbody>
</table>

ELECTIVES
Students earn 5-8 s.h. from these:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>TRNS:3480</td>
<td>Literature and Translation</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>TRNS:4497</td>
<td>Techniques of Translation</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>TRNS:5205</td>
<td>International Translation Workshop</td>
<td>1-3 s.h.</td>
</tr>
<tr>
<td>TRNS:5491</td>
<td>Translation Internship</td>
<td>1-2 s.h.</td>
</tr>
<tr>
<td>Independent study course(s)</td>
<td>arr.</td>
<td></td>
</tr>
<tr>
<td>Book arts course(s) offered by the Center for the Book (prefix UICB)</td>
<td>arr.</td>
<td></td>
</tr>
</tbody>
</table>

THESIS AND EXAMINATION
Students earn 3-6 s.h. for the thesis, which is a translated collection of poems, literary essays, short stories, a short novel, or a drama with an introduction that sets the work in appropriate context. The introduction should include a critical discussion of issues and problems related to the translation; it should present a rationale for the translator’s approach and strategies, based on interpretation, analysis of the leading features, structure, style, or authorial objectives of the source text. The source text should be a work that has not been translated previously or, at the discretion of the advisory committee, a work whose previous translation is judged to be outdated or inadequate in some respect. An oral defense of the thesis examines the student’s translation and the introductory essay in detail.
Admission

Applicants to the M.F.A. program are evaluated mainly on a writing portfolio. The portfolio should include translations, including source texts, and an original critical literary essay or literary writing in English; a statement of purpose; and three letters of recommendation. Applicants should provide evidence of advanced competence in their source language—normally at least three years of college-level work or the equivalent—and substantial preparation in English literature. Availability of faculty expertise in the applicant’s source language and culture is considered in admission decisions.

All applicants must submit their scores on the Graduate Record Examination (GRE) General Test and transcripts from previous college-level study. Individuals whose first language is not English should provide scores on the Test of English as a Foreign Language (TOEFL).

Applicants must meet the admission requirements of the Graduate College; see the Manual of Rules and Regulations of the Graduate College.

Financial Support

The program nominates up to two newly admitted, qualified students for the Iowa Arts Fellowship, a full-support fellowship awarded by the Graduate College each year. In addition, qualified students may receive teaching assistantships or part-time graduate assistantships. Students must apply for assistantships and other support; contact the Translation Program and the Office of Student Financial Aid for information.

Resources

Student translators in the M.F.A. program publish exchanges: a journal of literary translation. A vibrant source of international writing in translation, the journal provides hands-on editing and online publishing experience as well as an occasional venue for the editors’ own works. The M.F.A. program regularly hosts and cohosts conferences, invites speakers from around the world for readings and short-term residences, and is a constituent unit of the Virtual Writing University.

Courses

The Translation Program offers courses for undergraduates as well as graduate students. See “Courses” in the Division of World Languages, Literatures, and Cultures (p. 228) section of the Catalog for course descriptions and prerequisites for enrollment.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>TRNS:1017</td>
<td>Workshop in Literary Magazine Publishing</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>TRNS:1018</td>
<td>Workshop in Literary Review Writing</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>TRNS:2179</td>
<td>Undergraduate Translation Workshop</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>TRNS:2499</td>
<td>Undergraduate Translation Seminar</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>TRNS:3201</td>
<td>Workshop in Japanese Literary Translation</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>TRNS:3202</td>
<td>Workshop in Chinese Literary Translation</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>TRNS:3480</td>
<td>Literature and Translation</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>TRNS:4100</td>
<td>Approaches to Critical Theory</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>TRNS:4481</td>
<td>Introduction to Computer-Assisted Translation</td>
<td>1 s.h.</td>
</tr>
<tr>
<td>TRNS:4497</td>
<td>Techniques of Translation</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>TRNS:5205</td>
<td>International Translation Workshop</td>
<td>1-3 s.h.</td>
</tr>
<tr>
<td>TRNS:5491</td>
<td>Translation Internship</td>
<td>arr.</td>
</tr>
<tr>
<td>TRNS:5500</td>
<td>Advanced Translation Practice</td>
<td>1-3 s.h.</td>
</tr>
<tr>
<td>TRNS:6050</td>
<td>Independent Study</td>
<td>arr.</td>
</tr>
<tr>
<td>TRNS:6400</td>
<td>Thesis</td>
<td>arr.</td>
</tr>
<tr>
<td>TRNS:6459</td>
<td>Issues in Translation</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>TRNS:7460</td>
<td>Translation Workshop</td>
<td>4 s.h.</td>
</tr>
</tbody>
</table>
Translation for Global Literacy

Director, Division of World Languages, Literatures, and Cultures
- Russell Gamin

Coordinator, Translation for Global Literacy
- Aron Aji (Asian and Slavic Languages and Literatures)

Undergraduate minor: translation for global literacy
Literally every form of global exchange—from material goods and natural resources to knowledge, values, ideologies, and cultures—depends on translation across languages. Aided by the range of human migration, globalization has led to rich syntheses between and among cultures, languages, and sensibilities. Borders between countries have become tenuous in relation to transnational, multicultural, and multilingual realities.

The minor in translation for global literacy introduces undergraduate students to translation as a field and provides some basic course work and practice in translation from a world language to English. It encourages students to explore the topic and practice of translation as a crucial dimension of global literacy.

The minor in translation for global literacy is administered by the Division of World Languages, Literatures, and Cultures (p. 228).

Undergraduate Program of Study
- Minor in translation for global literacy

Minor
The minor in translation for global literacy requires a minimum of 18 s.h., including a minimum of 12 s.h. in courses taken at the University of Iowa. Students must maintain a cumulative g.p.a. of at least 2.00 in all courses for the minor and in all UI courses for the minor. Course work in the minor may not be taken pass/nonpass. At least 12 s.h. of course work must be taken in courses numbered 2000 or above.

Students are encouraged to declare the minor after satisfying the General Education Program (p. 313) World Languages requirement or during more advanced language study. Most students who successfully complete the minor will need at least 6 s.h. of additional course work beyond the General Education requirement in language study. Students may count a maximum of 6 s.h. of course work taken for another major, minor, or certificate program toward the requirements for the minor.

All students can tailor their plan of study to their experience and objectives. Students interested in the minor should meet with a faculty member associated with the minor program as soon as possible to develop an individualized plan of study.

Courses listed in two or more categories may only be used toward one requirement.

The minor in translation for global literacy requires the following course work.

**CORE COURSE**
This course:
A translation and global society gateway course (consult advisor) 3 s.h.

**TRANSLATION COURSES**
A total of 6 s.h. from these:
- ENGL:3724 Writers’ Seminar: Literary Translation 2 s.h.
- FREN:4890 Techniques of Translation 3 s.h.
- JPNS:3201 Workshop in Japanese Literary Translation 3 s.h.
- SPAN:3030 Translation Workshop: English to Spanish 3 s.h.
- SPAN:3050 Translation Workshop: Spanish to English 3 s.h.
- TRNS:2179 Undergraduate Translation Workshop 3 s.h.
- TRNS:3202 Workshop in Chinese Literary Translation 3 s.h.
- TRNS:4497 Techniques of Translation 3 s.h.

**LANGUAGE, LINGUISTICS, LITERATURE, AND CULTURE COURSES**
A total of 6 s.h. from these:
- CL:2531 Topics in Russian, East European, and Eurasian Studies arr.
- CL:3203 Modern Japanese Fiction in Translation 3 s.h.
- FREN:3060 Introduction to Reading and Writing in Literature 3 s.h.
- GRMN:3501 Introduction to German Literature 3 s.h.
- GRMN:3550 The Politics of Remembrance in German Multicultural Literature and Film 3 s.h.
- JPNS:3204 Topics in Japanese Literature in Translation 3 s.h.
- SPAN:2300 Introduction to Reading Literature 3 s.h.
- TRNS:3480 Literature and Translation 3 s.h.

Other courses approved by advisor (students can select from a wide range of options)

**CAPSTONE COURSE**
This course:
- TRNS:2499 Undergraduate Translation Seminar 3 s.h.

A departmental capstone course in which a project on translation is completed (must be approved by advisor) 3 s.h.
Writing

Director, Division of Interdisciplinary Programs
• Helena R. Dettmer

Director, Writing
• Helena R. Dettmer (Classics)

Associate director, Writing
• Daniel Khalastchi

Undergraduate certificate: writing
Faculty: http://magidcenter.uiowa.edu/certificate/faculty
Web site: http://magidcenter.uiowa.edu/about

The University of Iowa is known nationally and internationally for its writing programs, particularly for its top-ranked Master of Fine Arts programs in creative writing (p. 212) (Iowa Writers' Workshop) and nonfiction writing (p. 244) (Department of English). It also offers a creative writing track for undergraduate English (p. 244) majors and numerous discipline-based programs that emphasize writing. Several of the University's colleges have their own writing centers.

The undergraduate Certificate in Writing enables students in all majors to benefit from the University's wide-ranging writing programs and resources by pursuing a concentration in writing related to their majors, their career goals, or their personal interests.

Writing is one of the academic units in the Division of Interdisciplinary Programs (p. 226). The certificate is offered through the Frank N. Magid Center for Undergraduate Writing and administered by the College of Liberal Arts and Sciences (p. 24).

Learn more about the University's wealth of writing resources by visiting The Writing University web site, and read about the University's central role in Iowa City's designation as a UNESCO City of Literature.

Undergraduate Program of Study
• Certificate in Writing
Certificate in Writing students explore writing and develop their own writing skills in a wide range of genres and for varied purposes, including creative writing (fiction, nonfiction, poetry); writing for the professions, such as the arts, business, journalism, or science; writing for organizations; and writing related to personal interests.

Certificate
The Certificate in Writing requires a minimum of 21 s.h. The certificate program is open to current University of Iowa undergraduate students and to all individuals who hold a bachelor's degree and are not enrolled in a graduate or professional degree program. Students must maintain a g.p.a. of at least 2.00 in work for the certificate.

Students who complete the certificate develop:
• skills in planning and using strategies to begin writing, overcome obstacles, obtain feedback, revise their work, and present their writing in public venues;
• skills in the craft of writing, such as the ability to write clearly and concisely, control of mechanics and style, and the ability to communicate with particular audiences for specific purposes; and
• competence in discussing writing.

Course work for the certificate includes a minimum of 11 s.h. in core courses, a minimum of 9 s.h. in focused electives, and a minimum of 1 s.h. in a capstone independent study course that results in a project and/or portfolio of work. Students may count a maximum of 6 s.h. earned for a major, a minor, or another certificate toward the Certificate in Writing.

Certificate students have the opportunity to participate in the Iowa City writing community through activities such as attending readings and lectures; presenting their own work in public; working with professional journals, newspapers, or other publications; and repeated registrations in WRIT:1500 Writing Commons: A Community of Writers.

The Certificate in Writing requires the following work.

CORE COURSES
Students earn a minimum of 11 s.h. in core courses.

All students complete this core course:

WRIT:1500 Writing Commons: A Community of Writers 2 s.h.

Students complete the remaining 9 s.h. in the core requirements, with courses selected from the following lists:

CNW:3632 Prose Style 3 s.h.
CW:4745 The Sentence: Strategies for Writing 3 s.h.
CW:4760 The Art of Revision: Rewriting Prose for Clarity and Impact 3 s.h.
LING:1003 English Grammar 3 s.h.
LING:3080 History of the English Language 3 s.h.

May include one of these:

CLSA:1740 Writing Strategies: Word Origins and Word Choice 3 s.h.
CLSA:3742 Word Power: Building English Vocabulary 3 s.h.
LING:1030 English Words 3 s.h.

May include this course:

WRIT:1600 Fast Fixes: Improving Your Writing in Six Short Weeks (must be taken three times for 1 s.h. each with different subtitles) 3 s.h.

FOCUSED ELECTIVES
Students earn a total of at least 9 s.h. in focused electives, which they select from courses in at least two of the following categories (maximum of 6 s.h. from any one category).

• Writing for the professions
• Writing and the literary arts
• Writing and the media
• Writing in context
• Student-designated writing-intensive courses

Each focused elective course may be used to fulfill only one certificate requirement, even if the course is listed in more than one category below. Some of these courses have prerequisites and other requirements for registration; students must complete a course's prerequisites and meet...
its registration requirements before they may register for
the course.

**Writing for the Professions**

**Art**

ARTH:1080 Writing About the Visual Arts 3 s.h.
ARTS:3400 Grant Writing in the Arts 3 s.h.

**Book Arts**

UICB:2100 Creative Writing for Book Arts 3 s.h.

**Business**

BUS:3000 Business Communication and Protocol 3 s.h.
BUS:3800 Business Writing 3 s.h.
INTD:3005/CW:3005 Professional and Creative Business Communication 3 s.h.

Business may include one of these:

CNW:3640 Writing for Business and Industry 3 s.h.
ENNM:3640 Writing for Business and Industry for Non-English Majors 3 s.h.

**Grant Writing**

ARTS:3400 Grant Writing in the Arts 3 s.h.
EALL:4130/MUSM:4150 Introduction to Grant Writing 3 s.h.

**Journalism**

CNW:2780 The Art and Craft of Writing About Sports 3 s.h.
CNW:2830 The Art and Craft of Immersion Journalism 3 s.h.
JMC:2010 Journalistic Reporting and Writing 4 s.h.
JMC:3405 Depth Reporting and Writing 4 s.h.
JMC:3412 Strategic Communication Writing 4 s.h.
JMC:3415 Writing Across Cultures 4 s.h.
JMC:3470 Narrative Journalism 4 s.h.
SPAN:3020 Journalistic Writing in Spanish 3 s.h.

**Literature, Language, and Translation**

SPAN:2000 Spanish Language Skills: Writing 3 s.h.
SPAN:3000 Writing Skills for Heritage Speakers 3 s.h.
SPAN:3010 Advanced Spanish Speaking and Writing 3 s.h.
SPAN:3030 Translation Workshop: English to Spanish 3 s.h.
SPAN:3050 Translation Workshop: Spanish to English 3 s.h.
SPAN:3060 Introductory Workshop on Creative Writing in Spanish 3 s.h.
SPAN:4950 Advanced Workshop on Creative Writing in Spanish 3 s.h.
TRNS:2179/ENGL:2810 Undergraduate Translation Workshop 3 s.h.
TRNS:2499 Undergraduate Translation Seminar 3 s.h.
TRNS:3480/SLAV:3480 Literature and Translation 3 s.h.

**Political Science**

CNW:2850 The Art and Craft of Writing About Politics 3 s.h.
POLI:3107 Writing in Political Science: Writing for "Science" and for "Politics" 3 s.h.

**Sciences**

CNW:2730 The Art and Craft of Science Writing 3 s.h.

**Undergraduate Research**

BUS:3999/ECON:3999 Honors Seminar 1-3 s.h.
BUS:4999 Honors Thesis in Business 3 s.h.
HONR:3400 Honors Writing Workshop 1-3 s.h.

An undergraduate thesis related to any undergraduate discipline

**Writing and the Literary Arts**

**Creative Writing**

CW:3003 Writing and Reading Science Fiction 3 s.h.
CW:3107/INTD:3107 Creative Writing for the Health Professions 3 s.h.
CW:3215/INTD:3300 Creative Writing and Popular Culture 3 s.h.
CW:3218/INTD:3200 Creative Writing for New Media 3 s.h.
CW:4751 Creative Writing for the Musician 3 s.h.
CW:4894 Undergraduate Project in Creative Writing arr.
INTD:3005/CW:3005 Professional and Creative Business Communication 3 s.h.

Creative writing may include one of these:

CW:1800 Creative Writing Studio Workshop 3 s.h.
CW:2100 Creative Writing 3 s.h.

**Fiction**

CW:2870 Fiction Writing 3 s.h.
CW:3870 Advanced Fiction Writing 3 s.h.
CW:4870 Undergraduate Writers' Workshop: Fiction arr.

**Nonfiction**

CNW:1620 Introduction to Creative Nonfiction 3 s.h.
CNW:2680 The Art and Craft of Creative Nonfiction 3 s.h.
CNW:2690 The Art and Craft of Writing About Business 3 s.h.
CNW:2700 The Art and Craft of Personal Writing 3 s.h.
CNW:2790 The Art and Craft of Humor Writing 3 s.h.
CNW:2840 The Art and Craft of Travel Writing 3 s.h.
CNW:2850 The Art and Craft of Writing About Politics 3 s.h.
CNW:2910 Writing for Applications and Awards 3 s.h.
CNW:3630 Advanced Nonfiction Writing 3 s.h.
CNW:3662 Graphic Writing 3 s.h.
CNW:4631 Undergraduate Essay Workshop 3 s.h.
CNW:4690 Undergraduate Project in Nonfiction Writing arr.
ENNM:2100 Nonfiction Writing for Non-English Majors 3 s.h.
ENNM:3633 Personal Writing for Non-English Majors 3 s.h.

**Playwriting**
- THTR:2301 Playwriting I 3 s.h.
- THTR:3301 Playwriting II 3 s.h.
- THTR:3310 Undergraduate Playwriting Workshop 1-3 s.h.
- THTR:3403/AFAM:3840 Free-Style Writing: Poetry, Plays, and Performances 3 s.h.
- THTR:3421/GWSS:3421 Performing Autobiography 3 s.h.

**Poetry**
- CW:2875 Poetry Writing 3 s.h.
- CW:4875 Undergraduate Writers' Workshop: Poetry arr.

**Writing and the Media**

**Cinema**
- CINE:2861 Screenwriting: Short Form 3 s.h.
- CINE:2867 Screenwriting: Long Form 3 s.h.
- CINE:3877 Screenwriting: Short Form 4 s.h.
- CINE:4836 Advanced Screenwriting 4 s.h.
- CNW:3661 Film and Writing 3 s.h.
- THTR:3320 Writing for Film 3 s.h.

**Other Media**
- CL:1019 Media Matters 3 s.h.
- CNW:2770 The Art and Craft of Writing for New Media 3 s.h.
- CNW:3660 Multimedia Writing 3 s.h.
- CNW:3663 Radio and Writing 3 s.h.
- CW:3218/INTD:3200 Creative Writing for New Media 3 s.h.
- JMC:3600 Topics in Media Production 4 s.h.

**Writing in Context**
Students select from the following courses. They also may select internships, service learning opportunities, or other relevant experiences offered through the Pomerantz Career Center or other University units. All selections, except the courses listed below, must have prior approval of the certificate coordinator in the student's own undergraduate college.

- WRIT:3100 Writing with Purpose: Arts Outreach and Reflection with the Iowa Youth Writing Project 3 s.h.
- WRIT:3900 Writing: Undergraduate Internship 1-3 s.h.
- CNW:2710 The Art and Craft of Food Writing 3 s.h.
- CNW:2720 The Art and Craft of Writing About Culture 3 s.h.
- CNW:2740 The Art and Craft of Writing about the Environment 3 s.h.
- CNW:2760 The Art and Craft of Writing for Social Change 3 s.h.
- CNW:2800 The Art and Craft of Writing Across Genres 3 s.h.
- CNW:3644 Dublin Writing Workshop 3 s.h.
- CW:3107/INTD:3107 Creative Writing for the Health Professions 3 s.h.
- CW:3215/INTD:3300 Creative Writing and Popular Culture 3 s.h.
- CW:4751 Creative Writing for the Musician 3 s.h.
- EDTO:4355/CNW:4355 Approaches to Teaching Writing 3 s.h.
- GWSS:3138 Writing to Change the World 3 s.h.
- HONR:3220 Honors Writing Fellows: Writing Theory and Practice 3 s.h.
- INTD:3005/CW:3005 Professional and Creative Business Communication 3 s.h.
- IWP:3191/ENGL:3595/WLLC:3191 International Literature Today 1, 3 s.h.
- UICB:2100 Creative Writing for Book Arts 3 s.h.

**Student-Designated Writing-Intensive Courses**
Students may request permission to count a maximum of 3 s.h. earned in a course of their choice numbered 3000 or above as credit toward the focused elective requirement. They propose a writing-related project that extends the writing focus of their chosen course. They must have the approval of the faculty member teaching the course and the writing certificate advisor.

**CAPSTONE: INDEPENDENT WRITING PROJECT**
Each student must earn at least 1 s.h. in an independent writing project course that serves as a capstone experience and results in a substantial project and/or portfolio of the student's own writing. Students must have a faculty mentor for the independent writing project and must register for the course. Visit the Frank N. Magid Center for Undergraduate Writing for more information related to registering for the capstone course.

- WRIT:4000 Writing: Independent Project 1-3 s.h.

**Courses**

**WRIT:1500 Writing Commons: A Community of Writers**
Varied topics focused on building community and enhancing writing skills through generative exercises, long-form essay and hybrid assignments, workshops, sharing work in public, reading and discussing works of published authors.

**WRIT:1600 Fast Fixes: Improving Your Writing in Six Short Weeks**
Varied topics focused on improving common writing problems or specific aspects of craft.

**WRIT:2600 Science Communication I: Fundamentals of Science Communication**
Bringing science to varied audiences; focus on writing and presenting research story, analogies, connecting with audiences, collaborating with others from science and film/writing disciplines; first of a two-course sequence culminating in a group outreach project and print product.

**WRIT:2601 Science Communication II: Science Outreach and Engagement**
Bringing science to varied audiences; focus on writing and presenting research story, analogies, connecting with audiences, collaborating with others from science and film/writing disciplines; second of a two-course sequence culminating in a group outreach project and print product. Prerequisites: WRIT:2600.

**WRIT:3100 Writing with Purpose: Arts Outreach and Reflection with the Iowa Youth Writing Project**

Service-learning course offered in coordination with Iowa Youth Writing Project (IYWP); students create lesson plans, lead creative writing workshops in area schools and after-school programs, and collaborate to publish a final chapbook of writing from their teaching sites; assigned readings on creative writing pedagogy, teaching life, community outreach, social justice; relationships between self and community enhance interdisciplinary perspectives; weekly written reflections on teaching experiences featured on IYWP blog.

**WRIT:3101 Writers in the Community**

Experiential, hands-on learning opportunities organized by the Iowa Youth Writing Project; introduction to the community at large; fun and meaningful activities with elementary and junior high school students; designing creative writing lessons, discussion of teaching tips and tricks, leading creative writing workshops for children in the Iowa City community, writing reflective essays about experiences; for those interested in education, creative writing, volunteerism, nonprofit work, or community engagement.

**WRIT:3200 Writing for the Earth and Environmental Sciences**

Practical methods of content creation across curriculum; effective communication to lay and academic audiences; methods of planning, drafting, revising, and editing everything from general articles of interest to scientific papers. Same as EES:3040.

**WRIT:3900 Writing: Undergraduate Internship**

Professional and/or creative experience; students arrange faculty-approved internship. Requirements: undergraduate standing and minimum of 24 s.h. of course work with at least 12 s.h. in University of Iowa courses.

**WRIT:4000 Writing: Independent Project**

Completion of writing capstone requirement for the Certificate in Writing. Requirements: junior or higher standing.

**WRIT:4100 Iowa Youth Writing Project Mentorship Practicum**

Mentor new volunteers on a weekly basis at Iowa Youth Writing Project (IYWP) program sites; work one-on-one with volunteers, write and review lesson plans, provide resources and feedback for volunteers, lead workshops for children. Requirements: WRIT:3100 or completion of Iowa Youth Writing Project internship.
Tippie College of Business

Dean
- Sarah Fisher Gardial

Senior associate dean
- Kurt M. Anstreicher

Associate dean, School of Management
- David W. Frasier

Associate dean, undergraduate programs
- Kenneth G. Brown

Undergraduate major: B.B.A.
Undergraduate minor: business administration
Undergraduate certificates: entrepreneurial management; international business; risk management and insurance
Graduate degrees: M.Ac.; M.B.A.; M.S.; Ph.D.
Professional minors: finance; marketing management; strategic management of innovation; supply chain and analytics
Graduate certificate: business analytics
Web site: http://tippie.uiowa.edu/

The Henry B. Tippie College of Business is composed of six academic departments: accounting, economics, finance, management and organizations, management sciences, and marketing.

The college's undergraduate and graduate programs are accredited by AACSB International—the Association to Advance Collegiate Schools of Business.

Research, executive development, and education activities are supported by these centers and institutes: Emmett J. Vaughan Institute of Risk Management and Insurance, Entrepreneurial Management Institute, Hawkinson Institute of Business Finance, Institute for International Business, Iowa Electronic Markets Institute, John Pappajohn Entrepreneurial Center, Judith R. Frank Business Communication Center, Marketing Institute, McGladrey Institute of Accounting Education and Research, Pomerantz Career Center, Small Business Development Center, and Tippie Business Solutions Center.

HONOR CODE
Integrity and honesty are essential to success in all facets of life. The purpose of the Tippie College Undergraduate Honor Code and the Tippie MBA Honor Code is to promote honorable and ethical behavior. Students admitted to the college or enrolled in courses offered by the college are required to uphold the honor code.

Undergraduate Programs of Study

The Tippie College of Business offers the Bachelor of Business Administration (B.B.A.) with majors in accounting, business analytics and information systems, economics, finance, management (includes a distance education option), and marketing, and it collaborates with the College of Liberal Arts and Sciences to offer an undergraduate major in economics for Bachelor of Arts and Bachelor of Science students in economics. See Bachelor of Business Administration (p. 654) for information about B.B.A. requirements common to all of the majors as well as admission and academic rules and procedures for the B.B.A.; see the Tippie College of Business department sections in the Catalog for information about the individual majors. The college also offers joint undergraduate degrees with the College of Engineering and the College of Liberal Arts and Sciences; see "Joint Degrees" in the Bachelor of Business Administration section. The John Pappajohn Entrepreneurial Center also collaborates with the College of Liberal Arts and Sciences to offer the Bachelor of Arts in Enterprise Leadership (p. 273).

The college offers the undergraduate Certificate in Entrepreneurial Management (p. 673) and Certificate in Risk Management and Insurance (p. 702). It collaborates with the College of Engineering to offer the Certificate in Technological Entrepreneurship (p. 914) and with the College of Liberal Arts and Sciences to offer the Certificate in International Business (p. 408). The John Pappajohn Entrepreneurial Center collaborates with the College of Liberal Arts and Sciences to offer the Certificate in Performing Arts Entrepreneurship (p. 498).

The college also offers a minor in business administration for non-business students; see "Minor" below.

Minor

The minor in business administration is open to all University of Iowa undergraduates except those majoring in business (Tippie College of Business) and interdepartmental studies majors in the business studies track (College of Liberal Arts and Sciences).

The minor in business administration requires 36 s.h., including at least 12 s.h. taken in the Tippie College of Business. Students must maintain a g.p.a. of at least 2.00 in the minor overall and in all courses in the minor taken at the University of Iowa. Course work in the minor may not be taken pass/nonpass.

The following courses, or their equivalents, satisfy all requirements for the minor. Some of these courses have prerequisites and other requirements for registration; students must complete a course’s prerequisites and meet its registration requirements before they may register for the course.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT:2100</td>
<td>Introduction to Financial Accounting</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ACCT:2200</td>
<td>Managerial Accounting</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ECON:1100</td>
<td>Principles of Microeconomics</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>ECON:1200</td>
<td>Principles of Macroeconomics</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>FIN:3000</td>
<td>Introductory Financial Management</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>MATH:1380</td>
<td>Calculus and Matrix Algebra for Business</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>MGMT:2000</td>
<td>Introduction to Law</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>MGMT:2100</td>
<td>Introduction to Management</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>MKTG:3000</td>
<td>Introduction to Marketing Strategy</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>MSCI:1500</td>
<td>Business Computing Essentials</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>STAT:1030</td>
<td>Statistics for Business</td>
<td>4 s.h.</td>
</tr>
</tbody>
</table>

Students who will have completed all requirements for the minor when they graduate should indicate a business administration minor on the Application for Degree. Contact the Undergraduate Program Office for more information about the business administration minor.
Graduate Programs of Study

The Tippie College of Business offers five graduate degree programs: the Master of Accountancy (M.Ac.), the Master of Business Administration (M.B.A.), the Master of Science in business analytics, the Doctor of Philosophy (Ph.D.) in business administration, and the Doctor of Philosophy in economics. For information about the M.Ac. and the Ph.D. in economics, see Accounting (p. 648) and Economics (p. 664) in the Catalog.

The Certificate in Business Analytics is administered by the Department of Management Sciences. The Graduate College awards the certificate; see Business Analytics (p. 662) in the Catalog.

The M.B.A. program is offered by the Tippie School of Management; see Master of Business Administration Program (p. 696) in the Catalog.

For a description of the Ph.D. in business administration, see Doctor of Philosophy (p. 663) in the Catalog. The Ph.D. is an interdepartmental degree; programs leading to the degree are offered by the Departments of Accounting (p. 648), Finance (p. 677), Management and Organizations (p. 682), Management Sciences (p. 687), and Marketing (p. 692).

Study Abroad

CIMBA Italy offers semester and summer programs for undergraduate and graduate students in Paderno del Grappa, Italy, northwest of Venice. Students who attend the programs come from a variety of public and private universities worldwide.

At CIMBA, students immerse themselves in a wide range of rigorous courses, including innovative leadership and development programming, while living amidst the Venetian countryside in one of the most popular travel and study destinations in the world. Business and cultural immersions begin for students the minute they arrive on campus. All courses are taught by English-speaking professors from top universities throughout the United States and Europe.

Centers and Institutes

Emmett J. Vaughan Institute of Risk Management and Insurance

The Tippie College of Business, in partnership with the Iowa insurance industry, has established the Emmett J. Vaughan Institute of Risk Management and Insurance to provide innovative education and research in modern risk management and insurance.

The institute collaborates with the Department of Finance to offer the Certificate in Risk Management and Insurance. The certificate program provides undergraduate students with a foundation for careers in corporate risk management, risk management consulting, employee benefits management, insurance brokerage, underwriting, personal banking and asset management, financial analysis, claims adjustment, and auditing. See Risk Management and Insurance (p. 702) in the Catalog.

Entrepreneurial Management Institute

The Entrepreneurial Management Institute works with top entrepreneurial management track students in the B.B.A. management major and with Certificate in Entrepreneurial Management students to help them develop career advancement skills. Experienced business professionals and entrepreneurial leaders provide strategic career development training. Activities include seminars on developing professional résumés, creating extensive personal networks, networking with successful Iowa CEOs and business leaders, and making connections for internships and job placement.

Hawkinson Institute of Business Finance

The Hawkinson Institute of Business Finance facilitates career opportunities in investment banking, sales and trading, and related areas for students in the Tippie College of Business. The institute sponsors the Hawkinson Scholars Program, which trains high-achieving undergraduates for interviews, internships, and full-time jobs in the financial services industry. Criteria for admission to the institute include a strong academic record, involvement in campus and community activities, high motivation, good interpersonal skills, and demonstrated interest in business, markets, and corporate finance.

Hawkinson scholars participate in a class that is taught by former investment bankers and features guest speakers from investment banking, private equity, hedge funds, start-ups, and other sectors. Hawkinson scholars also receive intensive education in equity valuation, financial market dynamics, and more. An extensive network of dedicated Hawkinson alumni serve as mentors.

The Institute has worked to broaden entry-level employment opportunities for Iowa graduates, who land jobs at prestigious firms such as Goldman Sachs, Credit Suisse, Barclays, Merrill Lynch, JP Morgan, and UBS. Graduating Hawkinson scholars typically enjoy a placement rate of 100 percent.

Institute for International Business

The Institute for International Business (IIB) is dedicated to advancing knowledge and skills in international business and education through research, education, and consultation. Using students as consultants, IIB works in partnership with the Entrepreneurial Management Institute to provide international business consulting services to small- and medium-sized Iowa companies who wish to pursue business opportunities globally.

Iowa Electronic Markets Institute

The Iowa Electronic Markets Institute supports scholarship in prediction markets and experimental economics. It operates the Iowa Electronic Markets (IEM), online futures markets where contract payoffs are based on real-world events such as political outcomes, companies’ earnings per share, and stock price returns. Known internationally as the genesis of modern prediction markets, the Iowa Electronic Markets are used as tools for research and teaching.

John Pappajohn Entrepreneurial Center

The John Pappajohn Entrepreneurial Center (JPEC) has developed a comprehensive, interdisciplinary program that combines advanced course work with experiential learning for University of Iowa students. The program prepares students to launch new ventures, manage growing companies, and apply entrepreneurship concepts
in their careers. It is designed to empower students to accelerate their careers and pursue their dreams.

The entrepreneurship curriculum incorporates experiential learning opportunities in which students apply their knowledge and skills in their own ventures or in emerging or growing Iowa companies. JPEC's Bedell Entrepreneurship Learning Laboratory is dedicated to student entrepreneurs creating new businesses. Students also may participate in a wide variety of extracurricular programs such as business plan competitions, lecture series, conferences, workshops, a living-learning community, and the I-Envision student organization.

B.B.A. students in the Tippie College of Business who are majoring in management (p. 682) may complete the major's entrepreneurial management track, and University of Iowa students working toward a bachelor's degree may earn the Certificate in Entrepreneurial Management (p. 673). Both programs are offered on campus at the business college as well as online through the Division of Continuing Education. Graduate and professional students across the University may enroll in advanced entrepreneurship courses; see Master of Business Administration Program (p. 696) in the Catalog.

Students in the College of Liberal Arts and Sciences may earn a Bachelor of Arts degree with a major in Enterprise Leadership (p. 273). This program offers a combination of business and liberal arts approaches and allows students to hone their skills in innovation, entrepreneurship, communication, critical thinking, and leadership. The major in enterprise leadership is offered jointly by the John Pappajohn Entrepreneurial Center and the College of Liberal Arts and Sciences. The degree is awarded by the College of Liberal Arts and Sciences.

JPEC offers several programs for entrepreneurial businesses and individuals, including student field study projects, training, consulting, seminars, and conferences. In partnership with the Jacobson Institute for Youth Entrepreneurship, it provides training and a specialized curriculum to Iowa high school teachers in an effort to foster the development of innovative, creative, and entrepreneurial young Iowans. The center also partners with Iowa community colleges to deliver entrepreneurship training statewide.

**Judith R. Frank Business Communication Center**

The Judith R. Frank Business Communication Center provides one-on-one tutoring to Tippie College of Business undergraduates for writing assignments, projects, and case studies. The center's staff includes graduate students with expertise in writing and undergraduate peer tutors who have completed a semester-long peer tutor training course. Communication consultants are available on staff to help students with speech presentations or other oral communication assignments.

The center serves as a resource for the college's international students. It offers targeted programming that promotes fluency in written and spoken English. It also provides programming to support cross-cultural sensitivity and communication, including English Language Discussion Circles and sessions for staff and faculty on how to pronounce Chinese names.

The center's course-dedicated consulting program helps faculty and students plan and prepare for required writing projects. Center staff members work closely with faculty members to study assignment requirements, develop handouts and assessment rubrics, and deliver class or workshop presentations to students on how to meet the expectations of the assignment. Staff members work with departmental Ph.D. program directors to prepare second-year doctoral students for dissertation writing during the summer term. They also provide ongoing training and mentoring to the center's undergraduate peer tutors.

The Frank Business Communication Center oversees the B.B.A. core course BUS:3000 Business Communication and Protocol; the peer tutor training courses BUS:3900 Business Communication Internship I and BUS:3910 Business Communication Internship II; and the elective BUS:3800 Business Writing. In addition, the center's staff adjudicates the annual Mary Thomas Prappas Business Ethics Essay Competition and helps prepare Tippie College of Business undergraduates for national case competitions.

**Marketing Institute**

The Marketing Institute prepares students for today's diverse and competitive job market in the areas of marketing, market research, and sales. Each year, the institute invites around 15 top undergraduate students to become members. Students are selected on the basis of their academic performance, leadership, interpersonal skills, and executive potential. Field Immersion Projects are a major component of the three-semester program. In the immersion projects, students work as consultants for a variety of clients, including multimillion- or billion-dollar businesses, gaining hands-on experience in identifying and solving marketing-related issues and problems. Students are advised and mentored by an advisory board of top executives from companies such as Kraft Foods, Hormel, Pella, HON, Frank Magid & Associates, and Target. The Marketing Institute and its advisory board work together to foster internship opportunities and provide career guidance that helps students use their skills and talents to develop rewarding careers.

**Pomerantz Career Center**

Career development and on-campus recruiting services are provided by the Marvin A. and Rose Lee Pomerantz Career Center. The center's career advisors and online resources provide University undergraduate students and alumni with help on résumés, cover letters, internship and job searches, employer research, interviewing skills, negotiation of job offers, community involvement through volunteerism, and more. The center's Find Your Focus program helps students choose a major and identify careers related to specific majors. The center also presents several fall and spring semester career fairs. Campus recruitment is facilitated through HireaHawk.com. Students may participate in mock interviews and in actual on-campus interviews for full-time positions and internships during the academic year. The center also offers career-related and professional development courses such as CCP:3102 Job Search Strategies, LS:2002 Career Leadership Academy Part 1, and leadership studies courses numbered LS:2002 through LS:3002. Contact the Pomerantz Career Center for more information.

**McGladrey Institute of Accounting Education and Research**

The McGladrey Institute of Accounting Education and Research fosters educational excellence in accounting at
the University of Iowa, encourages high-quality research by Iowa accounting faculty members, and fosters the development of doctoral students in accounting. The institute sponsors varied educational initiatives and activities, including an annual national speaker series, the biennial Sidney Winter Lecture Series, and the PricewaterhouseCoopers Accounting Research Workshop.

**Small Business Development Center**
Since 1981, the University of Iowa Small Business Development Center has played an important role in helping enterprising Iowans manage or start their own successful businesses. The center provides support for small business owners and entrepreneurs. Its personnel are trained to meet the varied needs of small business management, including market, business, financial, and human resource planning; cash flow analysis; product commercialization; market research and analysis; strategic planning; international trade; and advertising and public relations.

**Tippie Business Solutions Center**
The Tippie Business Solutions Center provides M.B.A. students with opportunities to engage in strategic consulting projects with companies ranging from mid-sized firms to Fortune 500 companies in Iowa and around the world. The center brings together diverse teams possessing a variety of skills, knowledge, and experience. The teams apply rigorous business tools and techniques in order to research circumstances surrounding a business problem for a real-world client. Students meet with representatives from the client company, analyze the situation, and present recommendations and action plans for the client to pursue.

**Facilities and Resources**
The Henry B. Tippie College of Business is located in the John Pappajohn Business Building, at the heart of the campus. The Pappajohn Business Building contains seminar and conference rooms, a computer laboratory, two auditoriums, two computer classrooms, a behavioral laboratory, a restaurant (Pat's Diner), the Marvin A. Pomerantz Business Library, and a variety of classroom facilities.

The computer laboratory in the John Pappajohn Business Building serves the instructional programs of the college, and the staff maintains a current library of computational programs to accommodate users' needs. Business students also have access to the full range of services offered by the University's Information Technology Services and the extensive research materials and other resources of the University of Iowa Libraries.

**Alumni Relations**
The Tippie College of Business alumni network numbers more than 46,000 graduates worldwide. Alumni have access to the college's wide array of resources, including the in-house Office of Alumni Relations. The college's director of alumni relations and staff in the Undergraduate Program Office and the Tippie School of Management maintain relationships with alumni. Tippie Magazine is mailed to alumni who support the college.

The alumni office hosts individual visits, receptions, speakers, and other events on campus and in cities nationwide and around the world. Members of the Business Student Ambassadors, an undergraduate student organization, often serve as hosts and guides for alumni who visit the college, and the Young Alumni Board works to strengthen ties between the college and younger alumni.

Learn more about staying in touch at Alumni and Friends on the college's web site.

**Nondepartmental Courses**
Most Tippie College of Business courses are offered by the college's departments and programs. They are listed and described in the corresponding Catalog sections; see the links under "Index: Academic Programs" on this page.

The college also offers the following nondepartmental courses for undergraduate students.

**Lower-Level Undergraduate**

**BUS:1200 Tippie College Direct Admit Seminar**
Facilitates a more seamless transition to the University of Iowa and Tippie College of Business; weekly lectures from notable faculty and business executives, small group discussions; weekly topics include leadership, civic engagement, major and career exploration, and building a personal brand. Requirements: admitted to the direct admission program.

**BUS:2150 Tippie College Admission Writing Workshop**
Development and refinement of macro-level writing skills; focus on thesis statement and topic sentence construction, paragraph organization, and precision in language choices. Requirements: application to Tippie College of Business and eligible to enroll in workshop.

**BUS:2300 Searching for Business Information**
Search concepts and sources specific to business information; subscription and government online research sites.

**BUS:2450 Business and Culture in China**
Business and cultural environment of China; lectures, readings, case studies, company visits, and immersion in cultural experiences; Chinese history, politics, business, economics, and culture; topics may include Chinese business culture and relationships, local companies going global, business strategies of multinational companies in Chinese market; United States-China trade relations, entrepreneurship, Chinese consumer, sustainability and social responsibility; two-week study program in China. Prerequisites: ECON:1100 and ECON:1200. Requirements: UI and cumulative g.p.a. of 2.75.

**BUS:2500 International Perspectives**

**Program I**
First in a two-course sequence; orientation to International Perspectives Program (IPP) community; introduction to the concept of an academic study map; development of an individual strategy towards academic study maps; begin foundational introduction to materials covered in BUS:2510, including an introduction to concepts of identity and culture from macro and micro perspectives; required seminar for all first-year IPP students. Requirements: admission to the International Perspectives Program.

BUS:2510 International Perspectives Program II 1 s.h.
Continuation BUS:2500; exploration of concepts of identity and culture from both a macro and micro perspective; how culture and background impact how students think about and understand the world; exploration of having built-in assumptions about the world and why in some circumstances the ability to challenge those assumptions can be useful; study of cross-cultural communication. Prerequisites: BUS:2500. Requirements: admission to the International Perspectives Program.

BUS:2520 IPP Capstone Project 2 s.h.
Enhancement of foreign language studies and study abroad experiences; students select a topic of interest to explore an aspect of a study abroad country and culture in greater depth; creation of real-world interactions with people in host communities to utilize and develop language skills. Prerequisites: BUS:2500 and BUS:2510. Requirements: admission to the International Perspectives Program.

Upper-Level Undergraduate and Graduate

BUS:3000 Business Communication and Protocol 3 s.h.
Foundation in business communication and protocol; composing business messages, organizing and reporting workplace data, developing business presentation and team-building skills, exploring issues pertaining to professional behavior. Prerequisites: RHET:1030. Requirements: admission to Tippie College of Business and 30 s.h. earned.

BUS:3050 Business, Culture, and Society 3 s.h.
International business environment and interpersonal traits and skills expected of successful international businessperson; interdisciplinary overview of issues related to business in Western Europe; important cultural differences, the code of business and professional etiquette, business protocol, Italian business history, cultural appreciation, and executive legal/ethical concerns in the workplace; series of lectures, workshops, speakers, plant tours, and cultural events.

BUS:3100 Academic Internship or Cooperative Education 0 s.h.
Participation in an internship or cooperative education; fulfills Tippie College of Business experiential learning requirement.

BUS:3400 Business Student Ambassador Seminar 1 s.h.
Experiences as a Business Student Ambassador providing tours of the John Pappajohn Building, acting as hosts at college functions, providing information and assistance to visiting groups, assisting student recruitment activities. Requirements: admission to Tippie College of Business and acceptance as a Business Student Ambassador.

BUS:3500 Tippie Senate 1 s.h.
For elected student representatives on the Tippie Senate.

BUS:3600 Mentored Research arr.
Business research conducted by undergraduate students under faculty supervision.

BUS:3800 Business Writing 3 s.h.
Series of practical projects; development of effective and persuasive business communication and analytical skills in public relations context.

BUS:3850 Global Business Perspectives 3 s.h.
Virtual classroom component of summer internships in London, Dublin, or Hong Kong; value of international work assignments, work as part of cross-cultural teams, skills and perspectives for living and working in a culturally diverse world; students set goals and complete professional development assignments, and analyze cultural and political environment of their internship sites.

BUS:3900 Business Communication Internship I 3 s.h.
Opportunity for students to earn academic credit for serving as a peer tutor, an orientation and training assistant, or an administrative intern in the Judith R. Frank Business Communications Center.

BUS:3910 Business Communication Internship II 1-3 s.h.
Continuation of BUS:3900; opportunity for students to earn academic credit for serving as a peer tutor, an orientation and training assistant, or an administrative intern in the Judith R. Frank Business Communications Center. Prerequisites: BUS:3900.

BUS:3999 Honors Seminar 1-3 s.h.

BUS:4900 Academic Internship arr.
Professional internship experience with associated academic content (e.g., paper, course work).

BUS:4999 Honors Thesis in Business 3 s.h.
Independent student project directed by faculty or staff advisor; culminates in thesis that conforms to University Honors Program guidelines; may include empirical research, library research, applied projects. Prerequisites: BUS:3999 or ECON:3999. Requirements: admission to the Tippie College of Business honors program.

Interdepartmental Degrees
Bachelor of Business Administration (p. 654)
Master of Business Administration Program (p. 696)
Doctor of Philosophy (p. 663)

Departments and Programs
Accounting (p. 648)
Economics (p. 664)
Finance (p. 677)
Management and Organizations (p. 682)
Management Sciences (p. 687)
Marketing (p. 692)

**Certificate Programs**
Business Analytics (p. 662)
Entrepreneurial Management (p. 673)
International Business (p. 408)
Risk Management and Insurance (p. 702)
PROFESSIONAL PROGRAM IN ACCOUNTING

The Professional Program in Accounting draws on curricula that provide a strong base of traditional technical subject matter and the skills needed for solving complex business problems. This framework of study enables students to continue professional growth over the entire span of their careers. The program emphasizes communication skills and provides the academic background required for leadership positions in business, government, and public accounting. It also qualifies students to take the Certified Public Accountant (CPA) examination.

The Professional Program in Accounting leads to a Bachelor of Business Administration with a major in accounting, which requires 120 s.h. of credit (see "Undergraduate Program of Study" below), and the Master of Accountancy, which requires 30 s.h. of graduate credit (see "Graduate Programs of Study" later in this section). Students are granted the B.B.A. upon successful completion of the third and fourth years of the Professional Program in Accounting; they are granted the M.Ac. after successful completion of 30 s.h. beyond the B.B.A.

Undergraduate Program of Study

• Major in accounting (Bachelor of Business Administration)

Students who wish to earn the Bachelor of Business Administration with a major in accounting must be admitted to the Professional Program in Accounting. Undergraduate accounting majors are subject to the probation and dismissal rules described in the Bachelor of Business Administration (p. 654) section of the Catalog and are governed by the Tippie College Undergraduate Honor Code.

The B.B.A. is not sufficient preparation for CPA licensure in states that have passed a 150-hour law, including Iowa.

Bachelor of Business Administration

The Bachelor of Business Administration with a major in accounting requires a minimum of 120 s.h., including at least 25 s.h. of work for the major. Students must be admitted to the Professional Program in Accounting in order to major in accounting. Course work in the program provides concentrated coverage of professional accounting subjects and closely related topics in commercial law, business, and information systems.

To enter the Professional Program in Accounting, undergraduates must be admitted to the Tippie College of Business. They must have a University of Iowa g.p.a. of at least 3.00 and a cumulative g.p.a. of at least 3.00; a g.p.a. of at least 2.67 (B-minus average) in ACCT:2100 Introduction to Financial Accounting and ACCT:2200 Managerial Accounting; and a passing score on the Department of Accounting writing assessment. Students who wish to declare accounting as a major but do not satisfy the automatic admission requirements may still apply to the professional program; applications are reviewed case-by-case.

Students must complete the following B.B.A. prerequisite courses before admission to the Professional Program in Accounting.

ACCT:2100 Introduction to Financial Accounting 3 s.h.
ACCT:2200 Managerial Accounting 3 s.h.
ECON:1100 Principles of Microeconomics 4 s.h.
ECON:1200 Principles of Macroeconomics 4 s.h.
MATH:1380 Calculus and Matrix Algebra for Business 4 s.h.
STAT:1030 Statistics for Business 4 s.h.

Students usually spend the first and second year taking prerequisites and other course work required for all B.B.A. students; for B.B.A. common requirements, see Bachelor of Business Administration (p. 654) in the Catalog.

The major in accounting requires the following work during the third and fourth years.

THIRD YEAR

Fall Semester

ACCT:3100 Professional Accounting Seminar (must be taken by the second semester in the professional program) 1 s.h.
ACCT:3200 Income Measurement and Asset Valuation 3 s.h.
ACCT:3400 Introduction to Taxation 3 s.h.
BUS:3000 Business Communication and Protocol (taken first year after admission to the college) 3 s.h.
One business core requirement 3 s.h.
Elective 3 s.h.

The business core requirements (FIN:3000 Introductory Financial Management, MGMT:2000 Introduction to Law, MGMT:2100 Introduction to Management, MSCI:3000 Operations Management, and MKTG:3000 Introduction to Marketing Strategy) may be taken in any sequence, preferably before the fourth year; MGMT:2000 Introduction to Law is a prerequisite to ACCT:4300 Business Law,
so it should be taken before spring semester of the fourth year. Students must complete BUS:3000 Business Communication and Protocol during their first year after admission to the Tippie College of Business.

Due to overlap in course content, accounting majors may not count ACCT:3020 Financial Accounting and Reporting toward the B.B.A. degree.

**Spring Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT:3300 Valuation of Financial Claims</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ACCT:3600 Applied Information Systems</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>Two business core requirements</td>
<td>6 s.h.</td>
</tr>
<tr>
<td>Elective</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

**SUMMER: GMAT AND ADMISSION TO THE M.AC.**

Students who intend to continue in the Professional Program in Accounting after receiving the B.B.A. should take the Graduate Management Admission Test (GMAT) during the summer before their senior year, as preparation for applying to the Master of Accountancy program.

**FOURTH YEAR**

Students must choose one of the following accounting electives during their fourth year.

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT:3500 Advanced Tax Topics (offered fall only)</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ACCT:4400 Advanced Financial Accounting (offered spring only)</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

**Fall Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT:4100 Auditing</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>One accounting elective</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>One business core requirement</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>Two electives</td>
<td>6 s.h.</td>
</tr>
</tbody>
</table>

**Spring Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT:4200 Accounting for Management Analysis and Control</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ACCT:4300 Business Law</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>One accounting elective (if not taken fall semester)</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>Two or three electives</td>
<td>6-9 s.h.</td>
</tr>
</tbody>
</table>

**OPTIONAL ACCOUNTING ELECTIVE**

All undergraduates, whether admitted to the M.Ac. program or not, may take ACCT:4900 Academic Internship for 1 s.h. in fall, spring, or summer. Department consent is required.

**Graduate Programs of Study**

- Master of Accountancy
- Accounting subprogram for the Doctor of Philosophy in business administration

The department collaborates with the College of Law to offer the joint M.Ac./J.D. program; see "Joint M.Ac./J.D." below. It also participates in the M.B.A. program, which is offered by the Tippie School of Management; see Master of Business Administration Program (p. 696) in the Catalog.

Graduate students in accounting are subject to the probation and dismissal rules of the Graduate College and are governed by the full-time M.B.A. honor code.

**Master of Accountancy**

The Master of Accountancy requires 30 s.h. beyond the B.B.A. The program permits students to specialize in accounting areas according to their interests and objectives. It builds on the technical skills acquired in the undergraduate program, broadens students' perspectives on the role of accounting in organizations and decision making, and further develops written and oral communication skills.

Students from a variety of academic backgrounds enter the M.Ac. program. Those who enter with an undergraduate degree in accounting can expect to complete the degree in 12 months. Those who enter with a non-accounting undergraduate degree typically require four semesters to complete the M.Ac. Study plans are adjusted to reflect each student's particular academic background; see "Students Without Undergraduate Accounting Degrees" later in this section.

The M.Ac. is a nonthesis program. Course work focuses on the conceptual and economic foundations of accounting with applications to current and emerging problems of professional practice. M.Ac. students also have the opportunity to acquire expertise in one of four specialization areas: financial accounting/auditing, business analytics, taxation, and managerial accounting.

The 30 s.h. required for the M.Ac. must include at least 12 s.h. in graduate-level accounting courses and at least 21 s.h. in courses numbered 5000 or above. Some work for the specialization areas is cross-disciplinary, with courses from other departments as well as accounting.

The M.Ac. requires the following course work. Students complete the requirements for their chosen specialization or for the core program.

**SPECIALIZATION IN FINANCIAL ACCOUNTING/ AUDITING**

**Accounting Courses**

Total of 12 s.h.

- All of these:
  - ACCT:9040 Financial Information and Capital Markets 3 s.h.
  - ACCT:9140 Advanced Auditing 3 s.h.

  One of these:
  - ACCT:9050 Taxes and Business Strategy 3 s.h.
  - ACCT:9120 Design and Use of Cost Management Systems 3 s.h.

**Business Analytics Courses**

Total of 6 s.h.

- MSCI:9210 Introduction to Modeling with VBA 3 s.h.
- MSCI:9230 Database Systems 3 s.h.

**Finance Courses**

Total of 6 s.h.

- MBA:8180 Managerial Finance (requires consent of M.B.A. office) 3 s.h.
One additional finance course numbered above 5000 3 s.h.

**General Electives**
Total of 6 s.h.

**SPECIALIZATION IN BUSINESS ANALYTICS**

**Accounting Courses**
Total of 12 s.h.

- ACCT:9120 Design and Use of Cost Management Systems 3 s.h.
- Two of these:
  - ACCT:9050 Taxes and Business Strategy 3 s.h.
  - ACCT:9140 Advanced Auditing 3 s.h.

One of these (not already taken):
- ACCT:9040 Financial Information and Capital Markets 3 s.h.
- ACCT:9050 Taxes and Business Strategy 3 s.h.
- ACCT:9140 Advanced Auditing 3 s.h.
- ACCT:9150 Tax Research 3 s.h.

**Business Analytics Courses**
Total of 12 s.h.

- MSCI:9210 Introduction to Modeling with VBA 3 s.h.
- Three business analytics courses (prefix CS or MSCI) numbered above 5000 9 s.h.

**General Electives**
Total of 6 s.h.

**SPECIALIZATION IN TAXATION**

**Accounting Courses**
Total of 9 s.h.

- ACCT:9120 Design and Use of Cost Management Systems 3 s.h.
- Two of these:
  - ACCT:9050 Taxes and Business Strategy 3 s.h.
  - ACCT:9140 Advanced Auditing 3 s.h.

One of these (not already taken):
- ACCT:9040 Financial Information and Capital Markets 3 s.h.
- ACCT:9050 Taxes and Business Strategy 3 s.h.
- ACCT:9140 Advanced Auditing 3 s.h.
- ACCT:9150 Tax Research 3 s.h.

**Taxation Courses**
Total of 12 s.h.

- ACCT:9050 Taxes and Business Strategy 3 s.h.
- ACCT:9150 Tax Research 3 s.h.

**College of Law tax courses** 6 s.h.

**General Electives**
Total of 9 s.h.

College of Law courses (prefix LAW) follow a different academic calendar schedule than do business courses. Some courses may require consent of instructor.

**SPECIALIZATION IN MANAGERIAL ACCOUNTING**

**Accounting Courses**
Total of 12 s.h.

- ACCT:9120 Design and Use of Cost Management Systems 3 s.h.
- Two of these:
  - ACCT:9050 Taxes and Business Strategy 3 s.h.
  - ACCT:9140 Advanced Auditing 3 s.h.

One of these (not already taken):
- ACCT:9040 Financial Information and Capital Markets 3 s.h.
- ACCT:9050 Taxes and Business Strategy 3 s.h.
- ACCT:9140 Advanced Auditing 3 s.h.
- ACCT:9150 Tax Research 3 s.h.

**Business Analytics Courses**
Total of 6 s.h.

- MSCI:9210 Introduction to Modeling with VBA 3 s.h.
- MSCI:9230 Database Systems 3 s.h.

**Business Electives Outside Accounting**
Two business electives numbered above 5000 6 s.h.

**General Electives**
Total of 6 s.h.

**CORE PROGRAM**
Students who do not wish to pursue a specialization area must complete 30 s.h. beyond the B.B.A. At least 15 s.h. must be earned in graduate-level accounting courses and at least 21 s.h. must be earned in courses numbered 5000 or above. The following courses are required.

**Accounting Courses**
Total of 15 s.h.

- ACCT:9050 Taxes and Business Strategy (taken fall semester) 3 s.h.
- ACCT:9120 Design and Use of Cost Management Systems (taken spring semester) 3 s.h.
- ACCT:9130 Financial Reporting: Theory and Practice (taken fall semester) 3 s.h.
- ACCT:9140 Advanced Auditing (taken spring semester) 3 s.h.

One of these (not already taken):
ACCT:9040 Financial Information and Capital Markets 3 s.h.
ACCT:9150 Tax Research 3 s.h.

**Business Analytics Courses**

Total of 6 s.h.
MSCI:9210 Introduction to Modeling with VBA 3 s.h.
MSCI:9230 Database Systems 3 s.h.

**General Electives**

Total of 9 s.h.

**Students Without Undergraduate Accounting Degrees**

Course work for students who enter the program with a non-accounting bachelor's degree is determined by each student's background and interest area. In addition to meeting the core program requirements for the M.Ac., students typically take a combination of undergraduate and M.B.A. courses to remove academic deficiencies in quantitative methods, business, and accounting. Students with a bachelor's degree in another area of business typically are required to take 45-51 s.h. in order to complete the M.Ac. program. Those with degrees outside of business and with no accounting courses typically are required to take 57-60 s.h.

**CPA Examination and the Iowa Accountancy Act**

The Iowa Accountancy Act requires individuals who wish to take the CPA examination to have a bachelor's degree, 24 s.h. of business course work, and 24 s.h. of accounting course work beyond ACCT:2100 Introduction to Financial Accounting.

**Admission**

Admission to the M.Ac. program is competitive. The admissions committee reviews applications individually, considering quantitative aspects (grade-point average and GMAT scores) and qualitative aspects of each applicant's background and professional experience (if applicable) to assess an applicant's potential for academic success and professional growth.

Applicants must meet the admission requirements of the Graduate College; see the Manual of Rules and Regulations of the Graduate College.

Application materials must include the following: the Application for Graduate Admission; official transcripts of all undergraduate and graduate course work submitted by each institution an applicant has attended; official scores on the Graduate Management Admission Test (GMAT); a supplemental application form with essay responses; a résumé and cover letter; and at least three letters of reference from former instructors or employers. (B.B.A. accounting students at the University of Iowa are not required to provide letters of reference.)

Applicants whose first language is not English must score at least 100 (Internet-based) on the Test of English as a Foreign Language (TOEFL).

University of Iowa undergraduate accounting students are encouraged to take the Graduate Management Admission Test (GMAT) the summer before their senior year. They may apply to the M.Ac. after December 1 of their fourth year. See "Application Deadlines" below.

For complete information about application procedures, contact the Department of Accounting.

**APPLICATION DEADLINES**

The Department of Accounting admissions committee reviews completed M.Ac. application files (which must include official GMAT scores) on five dates: March 1, April 15, July 15, October 1, and December 1. Applications are reviewed on these dates regardless of whether the applicant plans to begin the M.Ac. program in the fall semester (August), spring semester (January), or summer session (June). Final Graduate College application deadlines are as follows.

- Fall semester entry: July 15 (April 15 for international students)
- Spring semester entry: December 1 (October 1 for international students)
- Summer session entry: April 15 (March 1 for international students)

Students who wish to apply for a teaching assistantship must apply to the M.Ac. program no later than March 1.

**Joint M.Ac./J.D.**

The Department of Accounting and the College of Law offer the joint Master of Accountancy/Juris Doctor program. The joint M.Ac./J.D. requires a minimum of 18 s.h. of graduate course work in accounting. Students in the program may count up to 12 s.h. of College of Law courses as electives for the M.Ac. and up to 12 s.h. of graduate accounting courses as electives for the J.D. Separate application to each degree program is required; applicants must be admitted to each program before they may be admitted to the joint program.

For information about the J.D. degree, see the College of Law (p. 969) section of the Catalog.

**Doctor of Philosophy**

Graduate students in accounting may earn a Doctor of Philosophy in business administration. For a description of the Ph.D. program and requirements, see Doctor of Philosophy (p. 663) (Tippie College of Business) in the Catalog and visit the Department of Accounting web site.

Applicants must meet the admission requirements of the Graduate College; see the Manual of Rules and Regulations of the Graduate College. Application materials must include the applicant's score on the Graduate Management Admission Test (GMAT).

**Faculty**

The department's faculty members stay current in their discipline by producing and disseminating accounting-related knowledge. They keep abreast of the latest developments in the field of education and the profession by participating in educational conferences and seminars and publishing in leading academic journals.
Courses
Lower-Level Undergraduate
ACCT:1300 First-Year Seminar 1 s.h.
Small discussion class taught by faculty member; topics chosen by instructor; may include outside activities (e.g., films, readings, visits to research facilities).

ACCT:2100 Introduction to Financial Accounting 3 s.h.
Accounting and financial reporting procedures used by business and not-for-profit entities; emphasis on accounting concepts and use of accounting information in making economic decisions. Requirements: sophomore or higher standing.

ACCT:2200 Managerial Accounting 3 s.h.
Basic topics in cost behavior, measurement, accumulation; use of cost data for relevant analysis, budgeting, performance evaluation. Prerequisites: ACCT:2100 and ECON:1100 and MATH:1380.

Upper-Level Undergraduate and Graduate
ACCT:3020 Financial Accounting and Reporting 3 s.h.
External financial reporting practices in context of decisions by management, current and potential stockholders, financial analysts; emphasis on interpretation, use of financial statements. Prerequisites: ACCT:2200. Requirements: non-accounting major.

ACCT:3100 Professional Accounting Seminar 1 s.h.
Seminar topics, including accounting careers, curriculum, M.Ac. program, internships, CPA examination and other professional certificates, Beta Alpha Psi, ethics, and global standards. Offered fall semesters. Corequisites: ACCT:2200 or ACCT:3200.

ACCT:3200 Income Measurement and Asset Valuation 3 s.h.
Accounting rules that determine how economic events and transactions are described in published financial reports; emphasis on revenue and expense recognition, asset valuation, accrual accounting model. Corequisites: ACCT:3400. Requirements: admission to Professional Program in Accounting.

ACCT:3300 Valuation of Financial Claims 3 s.h.

ACCT:3400 Introduction to Taxation 3 s.h.
Federal income taxation of individuals and businesses, including corporations, partnerships, and sole proprietorships; emphasis on developing a broad perspective on structure, administration, and rationale of federal income tax system. Corequisites: ACCT:3200. Requirements: admission to Professional Program in Accounting.

ACCT:3450 Advanced Tax Topics 3 s.h.
Taxation of corporations and partnerships from organization through liquidation; relative merits of conducting business as C corporation, partnership, S corporation; the alternative minimum tax; introduction to tax research. Prerequisites: ACCT:3400. Requirements: senior standing.

ACCT:3550 Financial Statement Analysis 3 s.h.
How to analyze published financial statements; practical experience using financial statement information to assess accounting quality, historical performance, forecasted performance, credit risk, firm value. Prerequisites: ACCT:3020.

ACCT:3600 Applied Information Systems 3 s.h.
Application of computer technology to accounting and transaction processing systems; information systems infrastructure and trends; problem solving with microcomputer spreadsheets, databases; accounting cycle operations. Prerequisites: ACCT:2100 and ACCT:2200 and MSCI:3005. Same as MSCI:3100.

ACCT:4000 Special Topics in Accounting 1-3 s.h.
Independent study topics determined by faculty member.

ACCT:4001 Continuing Education: Special Topics in Accounting 1-3 s.h.
Independent study topics determined by faculty member.

ACCT:4050 Directed Readings in Accounting 1-3 s.h.
Individual guided readings in accounting topics. Requirements: admission to Professional Program in Accounting.

ACCT:4100 Auditing 3 s.h.
General framework underlying auditing, role of audit standards in planning and conduct of audits, effect of regulation, ethics, liability on audit practices. Prerequisites: ACCT:3100 and ACCT:3300 and ECON:2800 and MSCI:3100. Requirements: senior standing.

ACCT:4200 Accounting for Management Analysis and Control 3 s.h.
Advanced topics in cost estimation, measurement, accumulation; use of cost data for decision making, performance evaluation in multi-unit organizations. Prerequisites: ECON:2800. Requirements: admission to Professional Program in Accounting.

**ACCT:4300 Business Law** 3 s.h.
Contracts, sales, debtor-creditor relations, business organizations, other aspects of law applied to business. Prerequisites: MGMT:2000. Requirements: senior standing.

**ACCT:4400 Advanced Financial Accounting** 3 s.h.
Accounting and reporting standards for business combinations, including mergers, consolidations, and multinational enterprises; accounting for partnerships, business segments, transactions denominated in foreign currency, including hedges using foreign currency derivate instruments; reporting standards for interim financial statements and fund accounting applied to government and nonprofit entities. Prerequisites: ACCT:3300. Requirements: senior standing.

**ACCT:4500 Accounting Measurement: Research and Analysis** 3 s.h.
How uncertainty and risk influence accounting judgments, estimates, and forecasts that underlie reported financial statement amounts; applications drawn from familiar accounting measurement challenges and those unique to industries (e.g., airline transportation, healthcare, insurance, gaming, oil and gas exploration). Prerequisites: ACCT:3300. Corequisites: ACCT:4100.

**ACCT:4900 Academic Internship** 1 s.h.
Professional internship experience.

**ACCT:4999 Honors Thesis in Accounting** 3 s.h.
Independent student project directed by faculty or staff advisor; culminates in thesis that conforms to University Honors Program guidelines; may include empirical research, library research, applied projects. Prerequisites: BUS:3999 or ECON:3999. Requirements: admission to the Tippie College of Business honors program.

**Graduate**

**ACCT:7850 Seminar in Accounting Research** arr.
Forum on current research in accounting, related disciplines; faculty, student, guest papers, Ph.D. dissertation proposals. Requirements: Ph.D. enrollment.

**ACCT:7900 Seminar in Selected Accounting Topics** arr.
Individual study, research paper preparation. Requirements: Ph.D. enrollment.

**ACCT:7975 Thesis: Accounting** arr.
Requirements: Ph.D. enrollment.

**ACCT:9020 Strategic Cost Analysis** 3 s.h.
Introduction to cost accumulation, reporting, cost management systems; managerial and divisional performance evaluation; appropriate use of cost data for short- and long-run decisions; product costing in manufacturing and service industries. Prerequisites: MBA:8140.

**ACCT:9030 Financial Accounting Standards and Analysis** 3 s.h.
Accounting model, underlying measurement concepts, valuation rules for assets, liabilities, related issues of income determination; emphasis on economic substance of transactions, evaluation and interpretation of financial data. Prerequisites: MBA:8140.

**ACCT:9040 Financial Information and Capital Markets** 3 s.h.
Use of corporate financial statements for investment and lending decisions; emphasis on financial analysis techniques, valuation, business analysis, cash flow projections, credit scoring, related research evidence. Prerequisites: MBA:8180 and ((ACCT:3200 and ACCT:3300) or MBA:8140).

**ACCT:9050 Taxes and Business Strategy** 3 s.h.
Effect of taxes on business decisions, including investment strategies, capital structure decisions, compensation policies, international business, mergers and acquisitions, and financial reporting. Prerequisites: ACCT:3500 or MBA:8140 or LAW:8194. Requirements: graduate standing in business.

**ACCT:9120 Design and Use of Cost Management Systems** 3 s.h.
Development of cost accumulation and reporting systems that complement a firm’s strategy and structure; how activity-based cost management systems increase competitiveness by helping a firm manage its costs, processes, people. Prerequisites: ACCT:4200 or ACCT:9020.

**ACCT:9130 Financial Reporting: Theory and Practice** 3 s.h.

**ACCT:9140 Advanced Auditing** 3 s.h.
Advanced issues such as ethics, internal control audits, forensic auditing, and fair value auditing. Prerequisites: ACCT:4100. Requirements: graduate standing in business.

**ACCT:9150 Tax Research** 3 s.h.
Understanding the validity and use of various tax law sources; performing tax research using printed and electronic tax materials; evaluation of tax law provisions and application to specific facts and circumstances; preparing tax memorandums. Prerequisites: ACCT:3500. Requirements: admission to M.Ac. program.
Bachelor of Business Administration

**Undergraduate major:** B.B.A.

**Web site:** [http://tippie.uiowa.edu/](http://tippie.uiowa.edu/)

**Undergraduate Program of Study**

- Bachelor of Business Administration
  The Bachelor of Business Administration is offered with majors in accounting, business analytics and information systems, economics, finance, management, and marketing. The major in management with the entrepreneurial management track includes a distance education option.

This Catalog section provides information about requirements that all B.B.A. students must fulfill, regardless of their major, as well as admission information and academic rules and procedures for the B.B.A. For information about the individual majors, see Accounting (p. 648), Economics (p. 664), Finance (p. 677), Management and Organizations (p. 682), Management Sciences (p. 687), and Marketing (p. 692) in the Catalog.

Students may earn double majors in the B.B.A.; they also may earn joint degrees in the College of Engineering or the College of Liberal Arts and Sciences. See "Double Majors in Business" and "Joint Degrees" below. Many business students earn one or more certificates and minors offered in disciplines across the University; see "Minors" and "Certificates" below.

The Tippie College of Business's undergraduate and graduate programs are accredited by AACSB International—the Association to Advance Collegiate Schools of Business.

**UNDERGRADUATE ADVISING**

All business students are advised at the business college's Undergraduate Program Office. Pre-business students are advised at the University's Academic Advising Center or the college's Undergraduate Program Office. Assignment to the Undergraduate Program Office for advising depends on a student's grade-point average, completion of calculus and statistics, and/or the number of semester hours completed. Walk-in hours and scheduled appointments are available at both offices. For more information on advising, contact the college's Undergraduate Program Office or the UI Academic Advising Center.

**HONOR CODE**

Integrity and honesty are essential to success in all facets of life. The purpose of the Tippie College Undergraduate Honor Code is to promote honorable and ethical behavior. Students admitted to the college or enrolled in courses offered by the college are required to uphold the honor code.

**Bachelor of Business Administration**

The Bachelor of Business Administration requires a minimum of 120 s.h. of credit, including at least 48 s.h. earned in business courses and at least 60 s.h. earned in nonbusiness courses.

B.B.A. students must earn 30 s.h. in residence following admission to the Tippie College of Business. At least 24 s.h. in courses offered by the business college and at least two-thirds of the semester hours in the student's major must be earned at the University of Iowa. Nonresident instruction includes course work at colleges and universities other than the University of Iowa.

To graduate, B.B.A. students must have a cumulative g.p.a. of at least 2.00 in all college course work attempted, all college course work attempted in business, all college course work attempted in the major, all course work attempted at the University of Iowa, all business course work attempted at the University of Iowa, and all course work in the major attempted at the University of Iowa.

**Common B.B.A. Requirements**

B.B.A. students must satisfy the following minimum common requirements or approved equivalents. For approved equivalents, consult the college's Undergraduate Program Office.

**GENERAL EDUCATION REQUIREMENTS**

<table>
<thead>
<tr>
<th>Subject</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>Rhetoric</td>
<td>4</td>
</tr>
<tr>
<td>Interpretation of Literature</td>
<td>3</td>
</tr>
<tr>
<td>World Languages</td>
<td>0-10</td>
</tr>
<tr>
<td>Natural Sciences</td>
<td>3</td>
</tr>
<tr>
<td>Social Sciences, excluding ECON:1100 and ECON:1200</td>
<td>3</td>
</tr>
<tr>
<td>Historical Perspectives</td>
<td>3</td>
</tr>
<tr>
<td>Values, Society, and Diversity</td>
<td>3</td>
</tr>
<tr>
<td>International and Global Issues</td>
<td>3</td>
</tr>
</tbody>
</table>

Tippie College of Business students may complete the World Languages requirement using one of two options. One year of high school language study is generally equivalent to one semester of college language study.

Option one: attain fourth-level proficiency in a single world language, usually by completing four years of that language in high school or four semesters in college or an equivalent combination of high school and college course work; or pass an achievement test or evaluation at fourth-level proficiency.

Option two: attain second-level proficiency in each of two world languages, usually by completing two years of each language in high school or two semesters of each language in college or an equivalent combination of high school and college course work; or pass achievement tests and/or evaluations at second-level proficiency in each language. Option two does not fulfill the World Languages requirement for the College of Liberal Arts and Sciences or qualify students to earn credit under the Furthering Language Incentive Program (FLIP).

Students may not count courses taken to fulfill General Education Program requirements toward other requirements for the B.B.A.

**PREREQUISITES FOR ADMISSION TO THE COLLEGE**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT:2100 Introduction to Financial Accounting</td>
<td>3</td>
</tr>
<tr>
<td>ECON:1100 Principles of Microeconomics</td>
<td>4</td>
</tr>
</tbody>
</table>
**MATH:1380 Calculus and Matrix Algebra for Business** 4 s.h.
**STAT:1030 Statistics for Business** 4 s.h.

**PREREQUISITES FOR DECLARING THE BUSINESS MAJOR**

- **ACCT:2200 Managerial Accounting** 3 s.h.
- **ECON:1200 Principles of Macroeconomics** 4 s.h.
- **MSCI:1500 Business Computing Essentials** 2 s.h.

**BUSINESS CORE**

- **BUS:3000 Business Communication and Protocol** 3 s.h.
- **ECON:2800 Statistics for Strategy Problems** 3 s.h.
- **FIN:3000 Introductory Financial Management** 3 s.h.
- **MGMT:2000 Introduction to Law** 3 s.h.
- **MGMT:2100 Introduction to Management** 3 s.h.
- **MKTG:3000 Introduction to Marketing Strategy** 3 s.h.
- **MSCI:3000 Operations Management** 3 s.h.
- **MSCI:3005 Information Systems** 3 s.h.

**EXPERIENTIAL LEARNING REQUIREMENT: TIPPIE RISE**

All Tippie College of Business students directly admitted to the college fall 2015 or later and all students admitted through standard admission fall 2016 or later must successfully complete at least one of these experiences—research, internship, study abroad, or experiential course. Students must follow the specific criteria and procedures established for the selected experience as outlined by the undergraduate program office.

Students must complete a Tippie RISE course from one of the four lists below.

**Research**

- **ACCT:4999 Honors Thesis in Accounting** 3 s.h.
- **BUS:3600 Mentored Research** arr.
- **ECON:4999 Honors Thesis in Economics** 3 s.h.
- **FIN:4999 Honors Thesis in Finance** 3 s.h.
- **MGMT:4999 Honors Thesis in Management and Organizations** 3 s.h.
- **MKTG:4999 Honors Thesis in Marketing** 3 s.h.
- **MSCI:4999 Honors Thesis in Management Sciences** 3 s.h.
- **URES:3995 ICRU Research Fellow** 0 s.h.

**Internship**

- **ACCT:4900 Academic Internship** 1 s.h.
- **BUS:3100 Academic Internship or Cooperative Education** 0 s.h.
- **BUS:3900 Business Communication Internship** 3 s.h.
- **ECON:4900 Academic Internship** arr.
- **ENTR:4900 Academic Internship** arr.
- **FIN:4900 Academic Internship** 1-3 s.h.
- **MGMT:4900 Academic Internship** arr.
- **MKTG:4900 Academic Internship** arr.
- **MSCI:4900 Academic Internship** arr.
- **CCP:1201 Academic Internship** 1-3 s.h.
- **CCP:2020 Washington Center Internship** arr.

**Study Abroad**

- Any CIMBA course 3 s.h.
- Any course with ABRD prefix 3 s.h.

**Experiential Course**

- **ACCT:3450 Tax Practicum (VITA) I** 1-2 s.h.
- **ENTR:4200 Entrepreneurship: Business Consulting** 3 s.h.
- **FIN:4250 Applied Equity Valuation** 3 s.h.
- **MKTG:3701 Marketing Institute Field Studies** 2 s.h.
- **MSCI:4250 BAIS Capstone Project** 3 s.h.
- **LS:1024 Alternative Break Service Learning** arr.
- **LS:3002 Career Leadership Academy Part 2** 3 s.h.

**MAJOR AREA OF STUDY**

All B.B.A. students must complete a major area of study. The college offers majors in accounting (p. 648), business analytics and information systems (p. 687), economics (p. 664), finance (p. 677), management (p. 682), and marketing (p. 692). The requirements for each major are established by the department that offers the major.

**Students with Associate of Arts Degrees**

Students who have been granted an Associate of Arts (A.A.) from a community college participating in the Iowa Community College/Regents Articulation Agreement are considered to have met all high school unit requirements for admission to the B.B.A. and all of the General Education Program requirements listed under "General Education Requirements" above, except the World Languages requirement. The program of study for which a student was awarded the A.A. must have included:

- a minimum of 60 s.h. (or 90 quarter hours) of credit acceptable toward graduation from the University of Iowa; mathematics courses comparable to MATH:0100 Basic Algebra I and MATH:0300 Basic Geometry are not accepted toward graduation;
- completion of the agreed-upon group of courses at the community college; and
- a g.p.a. of at least 2.00.

Completion of an Associate of Arts does not guarantee admission to the Tippie College of Business. See "Admission" later in this section for a complete list of requirements for admission to the B.B.A.

Students who use the provisions of the articulation agreement are granted a maximum of 60 s.h. of transferable credit from two-year colleges toward the 120 s.h. required for a B.B.A. Credit earned for the A.A. beyond the 60 s.h. transferable maximum is used in computing a student's grade-point average, and it may be used to satisfy course requirements, but it does not count toward the B.B.A. Transfer credit for business courses taken during the first and second years is counted toward the B.B.A. only if such courses are usually offered as lower-division courses at the University of Iowa.
Transfer Courses
Students who have taken courses at another institution that are similar to those approved for the common business requirements at Iowa may request that these courses be evaluated for transfer credit. Students who transfer fewer hours than needed to meet a common business requirement may use only approved courses to complete the remainder of the requirement. Only third- and fourth-year-level courses taken at accredited four-year institutions may be used to satisfy common business course requirements numbered 3000 or above. Students must complete a minimum of 24 s.h. of business course work and at least two-thirds of the course work in the major at the University of Iowa. They also must meet the 30 s.h. residency requirement of the Tippie College of Business. Credit earned through Guided Independent Study or online courses may be counted toward all requirements for graduation, subject to approval by a student’s major department.

Four-Year Graduation Plan
The following checkpoints list the minimum requirements students must complete by certain semesters in order to stay on the University’s Four-Year Graduation Plan.

Note: The following checkpoints are designed for students who enter the University as direct admission or pre-business students. In order to stay on the plan, pre-business students must maintain the grade-point averages required for admission to the Tippie College of Business and must apply for admission to the college by the established deadline. The Four-Year Graduation Plan is not available to students who choose to pursue a double major in the college or to those enrolled in a joint degree program.

Students must take BUS:3000 Business Communication and Protocol during their first year after admission to the Tippie College of Business, except direct admission students, who take the course during their second year.

Before the third semester begins: ECON:1100 Principles of Microeconomics or ECON:1200 Principles of Macroeconomics, MATH:1380 Calculus and Matrix Algebra for Business, and STAT:1030 Statistics for Business, or equivalents; and at least one-quarter of the semester hours required for graduation

Before the fifth semester begins: ACCT:2100 Introduction to Financial Accounting, ACCT:2100 Principles of Microeconomics or ECON:1200 Principles of Macroeconomics (whichever has not already been taken), or equivalents; all General Education requirements; and at least half of the semester hours required for graduation

Before the seventh semester begins: business core requirements, approximately half of the course work in the major (varies by major), and three-quarters of the semester hours required for graduation

Before the eighth semester begins: approximately three-quarters of course work in the major (varies by major)

During the eighth semester: all remaining course work in the major and a sufficient number of semester hours to graduate

Honors in Business
Outstanding students in the college have an opportunity to undertake independent study and to work closely with faculty members and other honors students. To graduate with honors in business, students must complete an honors thesis in one of the college's departments, registering for the appropriate course from the following list.

- ACCT:4999 Honors Thesis in Accounting 3 s.h.
- BUS:4999 Honors Thesis in Business 3 s.h.
- ECON:4999 Honors Thesis in Economics 3 s.h.
- FIN:4999 Honors Thesis in Finance 3 s.h.
- MGMT:4999 Honors Thesis in Management and Organizations 3 s.h.
- MKTG:4999 Honors Thesis in Marketing 3 s.h.
- MSCI:4999 Honors Thesis in Management Sciences 3 s.h.

To earn the B.B.A. with honors, students must successfully complete all college requirements with a g.p.a. of at least 3.50 in all courses taken at Iowa, all business courses taken at Iowa, all courses taken (including transfer courses), and all business courses taken (including transfer courses).

See Tippie College of Business Honors Program to learn more.

Pre-business students interested in honors study are encouraged to participate in the University of Iowa Honors Program until they are admitted to the business college. Visit Honors at Iowa to learn about the University’s honors program.

Double Majors in Business
Students may earn the B.B.A. degree with more than one major. Students may officially declare a maximum of four programs on the Iowa Student Information System (ISIS). Majors, minors, and certificates are considered programs. Additional programs must be declared in the Undergraduate Program Office by an advisor. The Four-Year Graduation Plan is not available to students earning more than one major. Students have access to degree audits for all of the programs they have officially declared. They also have access to all program courses, with some limitations, during early registration. A student must be in good academic standing in order to declare more than one major. See Double Majors—Policies and Procedures.

Joint Degrees
Undergraduate students may earn joint undergraduate degrees from the Tippie College of Business and the College of Liberal Arts and Sciences or the College of Engineering. The following rules apply to all students in joint degree programs.

To enter a joint degree program, students must have approval from the Tippie College of Business and must be admitted to both colleges. Interested students should see an advisor in the college’s Undergraduate Program Office.

Students in joint degree programs are allowed a combined maximum of three second-grade-only options.

All students in joint programs must meet all requirements for both degrees, including all General Education Program requirements.
Students are assigned two advisors (one for each major). Students in joint degree programs are assessed tuition only for the primary (first) major.

First-year students in joint degree programs who are direct admission students in the Tippie College of Business must enroll in BUS:1200 Tippie College Direct Admit Seminar during their first semester at the University.

**JOINT B.B.A./LIBERAL ARTS AND SCIENCES DEGREE**

The Tippie College of Business and the College of Liberal Arts and Sciences offer a joint degree program in which students earn two University of Iowa bachelor's degrees: a Bachelor of Business Administration (B.B.A.) from the Tippie College of Business and a Bachelor of Arts (B.A.), Bachelor of Science (B.S.), Bachelor of Fine Arts (B.F.A.), or Bachelor of Music (B.M.) from the College of Liberal Arts and Sciences.

Students in the joint business/liberal arts and sciences degree program must declare the Tippie College of Business program of study as their primary (first) major.

To learn about liberal arts and sciences majors, see "Index: Academic Programs" in the College of Liberal Arts and Sciences section of the Catalog.

**JOINT B.B.A./B.S.E.**

The Tippie College of Business and the College of Engineering offer a joint degree program in which students earn two University of Iowa bachelor's degrees: a Bachelor of Business Administration (B.B.A.) from the Tippie College of Business and a Bachelor of Science in Engineering (B.S.E.) from the College of Engineering. Students in the joint business/engineering degree program must declare the College of Engineering program of study as their primary (first) major.

Students in the joint business/engineering degree program must enroll in appropriate mathematics and engineering courses early during their course of study in order to complete the program in a timely way. Because courses in natural sciences, mathematics, humanities, and social sciences count toward the B.B.A. and the B.S.E., students may be able to count certain courses toward both degrees.

B.B.A./B.S.E. students usually meet the degree requirements of both colleges in about five years; time required depends on a student's choice of major study areas.

For information about engineering majors, see Bachelor of Science in Engineering (p. 841) (College of Engineering) in the Catalog. To learn more about requirements for the joint business/engineering degree, consult the Undergraduate Program Office in the Tippie College of Business and Engineering Student Services in the College of Engineering.

**Minors**

Bachelor of Business Administration students may earn minors in a number of disciplines. For example, students interested in international business might choose to earn a minor in a second language. For a list of minors and links to the departments and programs that offer them, see Undergraduate Minors (p. 12) in the Catalog.

Students may declare a minor on ISIS. To have the minor recorded on their transcripts, they must complete the "minor" section on their Application for Degree they submit through ISIS before the session they intend to graduate.

**Certificates**

Bachelor of Business Administration students may earn certificates offered by the Tippie College of Business as well as by other colleges at the University. The business college offers the Certificates in Entrepreneurial Management (p. 673) and in Risk Management and Insurance (p. 702). In addition, it partners with the College of Engineering to offer the Certificate in Technological Entrepreneurship (p. 914) and with the College of Liberal Arts and Sciences to offer the Certificates in International Business (p. 408) and in Performing Arts Entrepreneurship (p. 498).

The College of Liberal Arts and Sciences, the College of Public Health, and University College offer a wide range of certificates open to all undergraduates. Many pair exceptionally well with a business major. See Undergraduate Certificates (p. 11) in the Catalog for a complete list of certificates and links to their Catalog sections.

**Study Abroad**

CIMBA Italy offers semester and summer programs in Paderno del Grappa, Italy, northwest of Venice. Students who attend the programs come from a variety of public and private universities worldwide. At CIMBA, students immerse themselves in a wide range of courses, including innovative leadership and development programming, while living amidst the Venetian countryside in one of the most popular travel and study destinations in the world. Business and cultural immersions begin for students the minute they arrive on campus. All courses are taught by English-speaking professors from top universities throughout the United States and Europe.

The University's Office for Study Abroad offers a wide variety of study abroad programs in more than 40 countries. Students may choose from summer, semester, academic year, and winter session programs that complement their areas of study. See Study Abroad (p. 1233) (University College) in the Catalog for a list of programs.

**Admission**

Students enter the Tippie College of Business in one of two ways: direct admission or standard admission. All students admitted to the College of Business must follow the Tippie College Undergraduate Honor Code. Students who meet the admission requirements may be denied admission upon evidence of postsecondary academic misconduct or other violations of the honor code. Students are required to meet with the associate dean, undergraduate program, to discuss incidents of academic misconduct.

Admission standards are set by the Undergraduate Program Committee. All admission appeals are reviewed by the Undergraduate Program Office. Prospective students must submit acceptance of admission offers and all transcripts showing course work that satisfies the Tippie College of Business admission requirements to the University’s Office of Admissions by the appropriate deadline. Letters of recommendation are not accepted. For
more information about application and admission, contact the Undergraduate Program Office.

Direct Admission

Direct admission is designed to enable highly qualified high school students to enter the college directly after high school. Applicants must have a composite ACT score of 27 or higher (SAT critical reading and math score of 1210 or higher) and a high school g.p.a. of 3.70 or higher (on a 4.00 scale) to qualify. Applicants who do not meet these criteria but who present a strong academic record are considered carefully.

Incoming high school students who are admitted to the College of Liberal Arts and Sciences as pre-business students may inquire about their admission decision by contacting the assistant dean and director of admission in the Tippie College of Business Undergraduate Program Office. For more information about admission requirements, see Admission Policies on the Tippie College of Business web site.

Additional requirements for declaring a major in accounting include a University of Iowa g.p.a. of at least 3.00 and a cumulative g.p.a. of at least 3.00; a g.p.a. of at least 2.67 (B-minus average) in ACCT:2100 Introduction to Financial Accounting and ACCT:2200 Managerial Accounting; and a passing score on the Department of Accounting writing assessment.

Students granted direct admission to the college are eligible to apply for first-year scholarships. The application process is competitive and is based on high school record and an application essay. Application deadline is March 1.

Standard Admission

University of Iowa students are eligible to apply to the Tippie College of Business through standard admission if they have completed at least 12 s.h. of course work; have completed the four prerequisite courses listed under "Common B.B.A. Requirements" above with grades of C or higher; have a g.p.a. of at least 2.75 on the prerequisite courses, on all college course work completed, and on all University of Iowa course work. Transfer students who have completed the prerequisite courses and meet the grade-point average requirements also may apply through standard admission.

Requirements for declaring a major include completion of ACCT:2200 Managerial Accounting, ECON:1200 Principles of Macroeconomics, and MSCI:1500 Business Computing Essentials; see "Common B.B.A. Requirements" above. Additional requirements for declaring a major in accounting include a University of Iowa g.p.a. of at least 3.00 and a cumulative g.p.a. of at least 3.00; a g.p.a. of at least 2.67 (B-minus average) in ACCT:2100 Introduction to Financial Accounting and ACCT:2200 Managerial Accounting; and a passing score on the Department of Accounting writing assessment.

Applications for standard admission must be submitted online. Application deadlines are March 1 for fall admission and October 1 for spring admission; applicants should meet all admission requirements by the end of the semester in which they apply. Admission is not granted for the summer session or the three-week winter session. Applicants transferring from another college or university are held to the application deadlines. Grades from the three-week winter session do not count toward admission for the following spring semester, and grades from a summer session do not count toward admission for the following fall semester. Students who are denied admission may file an Appeal for Denial of Admission to Business if they can provide documentation of extenuating circumstances that affected their academic performance.

Nondegree Admission

Students visiting from another institution who wish to enroll in undergraduate courses in order to earn credit that they can transfer to their home institution may be granted admission as undergraduate nondegree students. Nondegree students are not guaranteed access to specific courses; they must have the approval of the undergraduate program staff in the Tippie College of Business and may earn no more than 9 s.h. in nondegree status.

Reentry Policy

All students who have been enrolled in another college or university since leaving the University of Iowa are required to submit official transcripts along with an application for reentry. Completed application materials must be received at least two weeks before the opening of classes. Reentry students are held to the requirements that are published in the University of Iowa General Catalog for the session in which they reenter.

Absent for 12 months or more—in good standing:

Students absent from the University of Iowa for 12 months or more who left in good standing must apply to the UI Office of Admissions as returning students and must contact the Tippie College of Business Undergraduate Program Office for advising before registration. Good standing is defined as not on probation and not dismissed for any reason.

Absent for 12 months or more—not in good standing:

Students absent from the University of Iowa for 12 months or more who were not in good standing when they left the University must file a petition with the Tippie College of Business Undergraduate Program Office to be reinstated. If the petition is approved, the student must apply to the UI Office of Admissions as a returning student; the Undergraduate Program notifies the Office of Admissions that a student’s petition for reinstatement has been approved. The student also must schedule an appointment to see an advisor in the Tippie College of Business before registration. Not in good standing is defined as being on probation or having been dismissed from the Tippie College of Business due to unsatisfactory scholarship, academic misconduct at the University of Iowa or at another institution, or a violation of the Tippie College Undergraduate Honor Code. Students who have been officially dismissed follow the procedures for reinstatement.

Absent for less than 12 months—in good standing:

Students absent for less than 12 months are not required to file an application for reentry. Students who were in good standing when they left the University should contact the Tippie College of Business Undergraduate Program Office for advising before registration. Reentry is approved regardless of any admission requirement changes.

Absent for less than 12 months—not in good standing:

Students absent for less than 12 months are not required to file an application for reentry. Students who were not in good standing when they left the University must consult with an advisor in the Tippie College of Business; the student may be readmitted...
on probation. Readmitted students should contact the Tippie College of Business Undergraduate Program Office for advising before registration. Reentry is approved regardless of any admission requirement changes. Not in good standing is defined as being on probation or having been dismissed from the Tippie College of Business due to unsatisfactory scholarship, academic misconduct at the University of Iowa or at another institution, or a violation of the Tippie College Undergraduate Honor Code. Students who have been officially dismissed follow the procedures for reinstatement.

Academic Rules and Procedures

Academic Recognition

DEAN'S LIST
Undergraduate students in the Tippie College of Business who achieve a g.p.a. of 3.50 or higher on 12 s.h. or more of University of Iowa graded course work during a given semester or summer session and who have no semester hours of I (incomplete) or O (no grade reported) during the same semester are recognized by inclusion on the Dean's List for that semester.

PRESIDENT'S LIST
Undergraduate students in the Tippie College of Business who achieve a g.p.a. of 4.00 on 12 s.h. or more of University of Iowa graded course work and who have no semester hours of I (incomplete) or O (no grade reported) for two consecutive semesters (excluding summer sessions) are recognized by inclusion on the President's List.

GRADUATION WITH HONORS
Graduation with honors recognizes high scholastic achievement based on grades and on completion of academic work beyond the requirements of the student's major. To graduate with honors, students must maintain a cumulative, University of Iowa, business, and UI business g.p.a. of at least 3.50 and must successfully complete an honors project under the supervision of a faculty member. See "Honors" earlier in this Catalog section.

GRADUATION WITH DISTINCTION
Graduation with distinction recognizes high scholastic achievement based on grades. The Office of the Registrar certifies to the Tippie College of Business associate dean the names of students eligible to graduate with distinction. The college awards degrees "with highest distinction" to students in the highest two percent of the graduating class, "with high distinction" to students in the next highest three percent, and "with distinction" to the next highest five percent. Ranking is based on students' grade-point averages for all college-level study undertaken before their final registration.

To be eligible to be considered for graduation with distinction, a student must complete 60 s.h. in residence as an undergraduate at the University of Iowa; 45 s.h. of that must be completed before the final registration.

Credit and Grading

CREDIT BY EXAMINATION
Students may earn up to 30 s.h. of credit by examination by taking selected tests from the College-Level Examination Program (CLEP) and the Advanced Placement (AP) program of the College Board or the International Baccalaureate Program (IB). For information about when and how to take the CLEP and AP examinations, contact the University’s Evaluation and Examination Service. The Tippie College of Business Undergraduate Program Office has information on scores, credit, and course duplicates for all CLEP, Advanced Placement, and IB tests accepted by the college.

MAXIMUM SCHEDULE
During early registration, students admitted to the Tippie College of Business may register for a maximum of 16 s.h. Course schedules that exceed 16 s.h. require approval from the Undergraduate Program Office. After early registration, students may register for a maximum of 18 s.h. Course schedules of more than 18 s.h. for a fall or spring semester, more than 12 s.h. for the summer session require approval from the Undergraduate Program Office.

ADDING AND DROPPING COURSES
Students may drop courses, except College of Law courses, any time before the deadline published in the University's academic deadline calendar. Deadlines are different for regular and off-cycle courses. See Academic Deadlines for the University of Iowa on the Office of the Registrar web site (http://www.registrar.uiowa.edu).

Students must obtain approval from the college that offers the course in order to request permission to add or drop a course after these deadlines.

ADMINISTRATIVE DROPS FOR LACK OF PREREQUISITES
Students are responsible for making sure that they have satisfied all prerequisites for any course for which they register. Instructors and departments have the option to drop a student from a course if the student has not satisfied the required prerequisites. Administrative drops must be processed by the first eight calendar days of the semester; the first two calendar days of the winter session, each summer session, or the start of an off-cycle course. Administrative drops are made without assignment of a W (withdrawn). Students who are dropped from courses are notified. Students should not assume that they have been dropped from a course because they do not have the prerequisites.

ADMINISTRATIVE DROPS FOR NONATTENDANCE
Instructors have the option to drop a student who has missed the first two class periods of a course, unless the student has offered an acceptable reason for beginning the course late. Administrative drops must be processed by the first eight calendar days of the semester or the first two calendar days of the winter session, each summer session, or the start of an off-cycle course. Administrative drops are made without assignment of a W (withdrawn). Students who are dropped from courses are notified. Students should not assume that they have been dropped from a course because they have not attended.

PASS/NONPASS
Up to 15 s.h. of course work required for the B.B.A. may be taken pass/nonpass with the consent of an advisor and the instructor. Students must be in good academic standing to be eligible for the pass/nonpass option. A maximum of two pass/nonpass courses may be taken in one semester. Courses taken pass/nonpass may not be used to satisfy general education, prerequisite, core, or major business
requirements; major business requirements include any course that fulfills a major course requirement or is offered by the major department. Pass/nonpass registration must be completed during the first 10 days of a fall or spring semester or the first one-and-one-half weeks of a summer session, and it requires the approval of the advisor and the instructor. For courses taken pass/nonpass, an earned grade of C-minus or higher is recorded as a P; an earned grade of D-plus or lower is recorded as an N. Pass/nonpass credit is not included in grade-point-average calculations.

SATISFACTORY/FAIL, SATISFACTORY/UNSATISFACTORY

Certain courses are offered satisfactory/fail (S/F) or satisfactory/unsatisfactory (S/U). All students registered for these courses receive one of these marks.

Special forms are not necessary to register for S/F or S/U courses, since all students enrolled in such courses automatically receive an S, an F, or a U.

Semester hours of S or U graded course work are not used in computing grade-point averages, but hours of F graded course work are used.

Semester hours of S graded course work are counted as semester hours earned toward graduation; semester hours of F or U graded course work do not count as semester hours earned toward graduation.

A maximum of 15 s.h. of S credit from the University of Iowa is accepted toward a bachelor’s degree.

SECOND-GRADE-ONLY OPTION FOR PRE-BUSINESS STUDENTS

Pre-business students must follow the rules established by the College of Liberal Arts and Sciences (CLAS). Contact the CLAS Academic Programs & Student Development office or consult the CLAS Academic Policies Handbook for more information.

SECOND-GRADE-ONLY OPTION FOR STUDENTS ADMITTED TO BUSINESS

Students admitted to the Tippie College of Business may use the second-grade-only option on any course except business courses numbered above 3005 with the prefix ACCT, BUS, ECON, FIN, MSC, MGMT, MKTG, or ENTR.

Students may apply the second-grade-only option to a maximum of three different courses while they are enrolled at the University of Iowa; any second-grade-only options used before entry to the Tippie College of Business counts toward the maximum of three second-grade-only options allowed.

Students in joint degree programs are allowed a combined maximum of three second-grade-only options.

The second-grade-only option may be used only once per course. Once placed on the record, the option may not be retracted.

A course taken at another college or university may not be repeated at the University of Iowa under the second-grade-only option.

A University of Iowa course may not be repeated at another institution under the UI second-grade-only option.

If the course was taken for a grade the first time, it must be taken for a grade the second time.

If the course was taken pass/nonpass the first time, a student may choose to take the course for a grade or as pass/nonpass the second time.

Any University of Iowa course taken in any mode of delivery—during a regular semester, a summer session, an intensive session, or through distance learning and the Division of Continuing Education—may be repeated in the same mode of delivery or in any other mode of delivery.

Students who have been awarded a degree from the University of Iowa may not use the second-grade-only option on a course taken before the degree was awarded.

Graduate or professional colleges may recalculate grade-point averages using all grades visible on the permanent record.

Students must register as usual for the course that is to be repeated.

After the session in which the course is being repeated has begun, students must request the second-grade-only option by completing the Second-Grade-Only Option Request Form.

The permanent record is adjusted by placing a pound symbol (#) next to the first grade to indicate that it is no longer being included in the grade-point-average calculation, and only the semester hours from the second registration have been counted as semester hours earned.

INCOMPLETE GRADES

Instructors may report a mark of I (incomplete) only if the unfinished part of a student’s work in a course other than research, thesis, or independent study is small; if the work is unfinished for reasons acceptable to the instructor; and if a student’s standing in the course is satisfactory.

Students should not re-enroll in a course for which they have an incomplete. Incomplete grades must be removed by completing the unfinished part of the work. Faculty and students are encouraged to state clearly in a written agreement how the incomplete is to be completed. Both the faculty member and the student should keep a record of the written agreement.

Failure to remove the incomplete before the end of the next full semester, excluding summer and winter sessions, results in replacement of the I with a grade of F, regardless of whether a student is enrolled during that semester. A grade change may be submitted to convert a grade of F to another letter grade, with the instructor’s approval.

GUIDED INDEPENDENT STUDY

University of Iowa Guided Independent Study is counted as resident credit and may be applied to all requirements for graduation, subject to approval by a student’s major department. Guided Independent Study courses can be taken any semester, up to four courses at a time.

Students eligible for the second-grade-only option may retake the course through Guided Independent Study for the second-grade-only option. Likewise, students eligible for the second-grade-only option in a Guided Independent Study course may retake the course on campus for the second-grade-only option.

PROBATION AND DISMISSAL

Students are placed on academic probation when their grade-point average in any of the following categories falls below 2.00: all course work taken, all course work...
taken at the University of Iowa, all business course work taken at the University of Iowa, all course work taken to satisfy requirements for the major(s), and all course work taken at the University of Iowa to satisfy requirements for the major(s). In probation decisions, a 3 s.h. minimum is used to calculate the grade-point average for all course work taken to satisfy requirements for the major(s), and all course work taken at the University of Iowa to satisfy requirements for the major(s).

When all of the above grade-point averages equal or surpass 2.00, students are removed from probation. Students usually are allowed only one session to return to good academic standing. They are required to meet with an academic advisor. Students on academic probation who withdraw registration after the deadline for dropping courses may be dismissed.

Students may be dismissed from the college at any time for unsatisfactory scholarship. While some probationary period usually precedes a dismissal, students in good academic standing who complete a term with extremely unsatisfactory grades may be placed on academic probation or dismissed immediately. Students dropped from the college for poor scholarship may petition for permission to reregister, but usually only after one year following the end of the term in which they were dismissed.

**REINSTATEMENT**

Students dismissed for unsatisfactory scholarship for the first time are not permitted to register again for one year. Students dismissed for the second time may or may not be granted a second reinstatement. Requests for reinstatement must be made in writing and should be addressed to the Associate Dean, Undergraduate Program Office. Arrangements for a reinstatement interview must be made with the Undergraduate Program Office in the Tippie College of Business. The interview must take place between March 1 and July 1 for reinstatement for fall semester, or between October 1 and December 1 for reinstatement to spring semester. Late requests are deferred to the following semester. Students who are permitted to register following dismissal are registered on academic probation and ordinarily are allowed two semesters to achieve good standing. Most reinstatements include a limit on the number of semester hours the student may take upon reinstatement. Very poor academic work in the first semester of a reinstatement, however, may result in dismissal at the close of that semester.

**Returning for Baccalaureate Degrees**

**RETURNING FOR A SECOND BUSINESS MAJOR**

Individuals who already hold a B.B.A. degree from the University of Iowa may complete the requirements for another business major, except accounting. Those interested in earning a degree in accounting must apply for admission to the Graduate College in order to earn the Master of Accountancy degree. Students who return to the University of Iowa to complete another business major must meet the requirements for that major; they do not have to meet the residence requirement. It is their responsibility to notify the Office of the Registrar once they complete the requirements for the second major so that a notation can be placed on their permanent record. Returning students are held to the requirements that are published in the University of Iowa General Catalog for the session in which they reenter.

**RETURNING FOR AN ADDITIONAL BACHELOR’S DEGREE**

Individuals who hold a bachelor’s degree from another college at the University of Iowa may return to earn the B.B.A. degree from the Tippie College of Business. They must satisfy all requirements for undergraduate admission to the business college. Once admitted, they must satisfy all requirements for the B.B.A. in their chosen major. Returning students are held to the requirements that are published in the University of Iowa General Catalog for the session in which they reenter.

**RETURNING FOR AN ADDITIONAL BACHELOR’S DEGREE IN ACCOUNTING**

Individuals who hold a bachelor's degree in a nonbusiness discipline from the University of Iowa or from another college or university may be considered for admission to the Tippie College of Business to earn the B.B.A. with a major in accounting. Individuals interested in this option should consult with the Department of Accounting about the B.B.A. program in accounting (undergraduate) and the Master of Accountancy graduate program. Those who already hold a B.B.A. from the University of Iowa or any business degree from another institution may not earn a major in accounting at Iowa.
Business Analytics

**Chair, Department of Management Sciences**
• Nick Street

**Director, Business Analytics**
• Nick Street

**Graduate certificate:** business analytics  
**Faculty:** [http://tippie.uiowa.edu/business-analytics/faculty.cfm](http://tippie.uiowa.edu/business-analytics/faculty.cfm)  
**Web site:** [http://tippie.uiowa.edu/business-analytics/](http://tippie.uiowa.edu/business-analytics/)

The Certificate in Business Analytics is administered by the Department of Management Sciences and is described below. For specific information regarding the Master of Science in business analytics, see Management Sciences (p. 687) in the Catalog.

**Graduate Program of Study**
• Certificate in Business Analytics

Analytics—broadly defined as the scientific process of transforming data into insight for making better decisions—plays an increasingly critical role in business. Companies must be able to access and analyze this data intelligently. As the recognition of analytics has grown, so has the demand for analytics education.

The focus on business analytics entails a specific approach targeting the core business disciplines of business, including operations, information technology, finance, marketing, accounting, and human resources, among others.

**Certificate**

The certificate program is open to students who have earned an undergraduate degree. A minimum undergraduate or graduate g.p.a. of 2.50 is required for admission.

The Certificate in Business Analytics requires 15 s.h. of graduate credit, of which 9 s.h. must be unique to the certificate and cannot be counted toward the student’s major. Students may be allowed to apply up to 6 s.h. of course work from another institution toward the certificate with approval by petition to the director of the certificate program.

A cumulative g.p.a. of at least 2.75 is required in order to complete the certificate. All courses are offered in Cedar Rapids.

The Certificate in Business Analytics requires the following course work.

All of these:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSCI:6070</td>
<td>Data Science (section EXC)</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>MSCI:9100</td>
<td>Business Analytics (section EXC)</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>MSCI:9110</td>
<td>Advanced Analytics (section EXC)</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>MSCI:9210</td>
<td>Introduction to Modeling with VBA (section EXC)</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>MSCI:9230</td>
<td>Database Systems (section EXC)</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>
Doctor of Philosophy

**Graduate degree:** Ph.D. in business administration

**Web site:** http://tippie.uiowa.edu/phd/

**Graduate Program of Study**

- Doctor of Philosophy in business administration

The Doctor of Philosophy in business administration is an interdepartmental degree open to students in several Tippie College of Business departments. Basic requirements for the degree are detailed below. For additional information, see “Graduate Programs” in the Accounting (p. 648), Finance (p. 677), Management and Organizations (p. 682), Management Sciences (p. 687), and Marketing (p. 692) sections of the Catalog.

The Tippie College of Business also offers a Doctor of Philosophy in economics; see Economics (p. 664) in the Catalog.

**Doctor of Philosophy**

The Doctor of Philosophy in business administration requires a minimum of 72 s.h., including approved transfer credit. The program prepares students for research positions in business and government or for research and teaching positions at academic institutions. It is flexible, permitting students to choose a specialization area according to their interests. Course work and related experience enable students to achieve competence in economic theory, statistical methods, and behavioral science as well as expertise in a major and minor study area. Students also have opportunities to develop research and teaching skills.

Ph.D. course work consists of prerequisites (as necessary), the Ph.D. core, major and minor study areas, and dissertation research, described in brief below. For more detailed information about Ph.D. requirements, contact the individual Tippie College of Business departments or visit their web sites.

**CORE COURSES**

Core courses develop research competence and provide background for specialized study. Doctoral students consult with their advisors to develop a study plan that reflects the individual student's background and interests and satisfies core requirements.

**MAJOR STUDY AREA**

At least 12 s.h. of approved doctoral-level courses must be completed in one of the following areas: accounting, finance, human resource management, management information systems, marketing, operations management, organizational behavior, or quantitative methods.

**MINOR STUDY AREA**

Students must complete a minimum of 9 s.h. of doctoral-level courses beyond the Ph.D. core course requirements in one of the major study areas listed above or in a concentration outside the Tippie College of Business.

**COMPREHENSIVE EXAMINATIONS**

Students must satisfactorily complete a comprehensive examination, consisting of written or oral parts or both, at the discretion of their major department.

**DISSERTATION**

Students must present a dissertation proposal at a forum attended by dissertation committee members and open to interested faculty members and graduate students, as established by the student's major department. Researching and writing the dissertation typically require two years of full-time effort.

**FINAL EXAMINATION**

Ph.D. candidates defend the dissertation in an oral examination attended by dissertation committee members and open to interested faculty members and graduate students.

**Admission**

Applicants to the Ph.D. program in business administration must meet the admission requirements of the Graduate College; see the Manual of Rules and Regulations of the Graduate College.

Applicants must take the Graduate Record Examination (GRE) General Test or the Graduate Management Admission Test (GMAT) and have their scores sent to the University in order to be considered for admission. The Departments of Finance, Management and Organizations, Management Sciences, and Marketing accept test scores for either the GRE or GMAT. The Department of Accounting accepts only GMAT scores. Required scores on these tests and their weight in admission decisions vary by department.

International applicants who do not hold a baccalaureate or a more advanced degree from an accredited university in the United States, the United Kingdom, Canada (except French language institutions in Quebec), English-speaking Africa, Australia, or New Zealand must take the Internet-based Test of English as a Foreign Language (TOEFL) or the International English Testing System (IELTS) test and have their scores sent to the University of Iowa. An IELTS total score of at least 7.0 with no subscore below 6.0 satisfies the English language requirement. Applicants who use the IELTS test are required to take the on-campus English Proficiency Evaluation.

Admission is for fall entry. Completed applications should be submitted as early as possible and no later than the following deadlines.

- Accounting: January 15
- Finance: January 15
- Management and Organizations: January 15
- Management Sciences: January 15
- Marketing: January 15

Visit Ph.D. Programs on the Tippie College of Business web site to learn more.
Economics

Chair

• John L. Solow

Undergraduate major: economics (B.A., B.S., B.B.A.)
Undergraduate minor: economics
Graduate degrees: M.A. in economics; Ph.D. in economics
Faculty: http://tippie.uiowa.edu/economics/faculty.cfm
Web site: http://tippie.uiowa.edu/economics/

Economics is the study of how societies allocate limited resources to achieve competing ends. Using both empirical and deductive methods, economics analyzes incentives, constraints, organizational forms, and market forces to understand patterns of production, exchange, and consumption of goods and services. It treats diverse issues such as wealth and poverty, government expenditures and taxation, prosperity and depression, inflation and unemployment, relations between management and labor, economic growth, environmental protection, health care delivery, the war on drug abuse, free trade versus protectionism, U.S. competitiveness in international markets, and the quality of American education.

The Department of Economics offers degree programs for undergraduates and for graduate students. It also partners with the Departments of Philosophy, Political Science, and Sociology to offer the undergraduate major in ethics and public policy, an interdisciplinary program administered by the Department of Philosophy (College of Liberal Arts and Sciences); see Ethics and Public Policy (p. 286) in the Catalog.

Undergraduate Programs of Study

• Major in economics (Bachelor of Arts, Bachelor of Science, Bachelor of Business Administration)
• Minor in economics

The Tippie College of Business and the College of Liberal Arts and Sciences offer the major in economics. Students may complete the major with their choice of three degrees. The Bachelor of Arts and Bachelor of Science are awarded by the College of Liberal Arts and Sciences; the Bachelor of Business Administration is awarded by the Tippie College of Business.

The B.A. in economics is designed to achieve a balance of economic theory, mathematical tools, and field applications. The B.S. maintains a similar balance but emphasizes development of analytical tools; it prepares students for graduate work in economics or related business and technical fields. The B.B.A. emphasizes economic foundations of business fields: accounting, finance, marketing, business law, and management.

Each program provides an excellent educational background for a variety of positions in business and government. Graduates find employment in banking, financial institutions, industrial firms, and trade organizations and in federal, state, and local government agencies dealing with economic policy, regulation, and analysis. Economics also provides excellent preparation for the study of law and for graduate study in fields such as business management, public administration, hospital and health administration, urban and regional planning, transportation, journalism, political science, and statistics.

All students majoring in economics choose one of three tracks: business economics, policy economics, or analytical economics. They complete three sets of requirements for the major: mathematics and statistics courses that provide the skills needed for understanding economic theory and data; economic theory courses that provide the tools needed for analyzing economic issues; and field courses that apply economic tools to business, social, or specialized analytical issues. The applied field course requirement varies, depending on the student's choice of track.

Bachelor of Arts, Bachelor of Science

The Bachelor of Arts with a major in economics requires a minimum of 120 s.h., including 31-32 s.h. of work for the major. The Bachelor of Science with a major in economics requires a minimum of 120 s.h., including 33-35 s.h. of work for the major. Students must maintain a g.p.a. of at least 2.00 in all courses for the major and in all UI courses for the major. They also must complete the College of Liberal Arts and Sciences General Education Program (p. 313).

The B.A. and B.S. programs focus on economic theory, mathematical tools, and field applications; the B.S. program also includes an emphasis on developing skill using analytic tools. Both programs offer good educational background for a variety of positions in business and government as well as for the study of law and for graduate study.

The economics major for the B.A. and B.S. requires a set of courses in mathematics and statistics (10-11 s.h. for B.A. students, 15-17 s.h. for B.S. students) and a set of courses in economic theory (6 s.h. for B.A. and B.S. students). It also requires a set of applied field courses (15 s.h. for B.A. students, 12 s.h. for B.S. students) in one of three tracks: business economics, policy economics, or analytical economics.

The analytical economics track is for students planning to earn a graduate degree in a discipline that is highly quantitative or who plan to pursue technical and/or analytical work in the public or private sector. The business economics track is designed for students who intend to work in the private sector. The policy economics track is for students interested in earning a degree in law or a graduate degree in a discipline that is not highly quantitative, or in seeking a decision-making position in the public or private sector.

Students may be able to count a limited amount of transfer credit toward the major, but they must complete the following courses at the University of Iowa: ECON:3100 Intermediate Microeconomics or ECON:3140 Advanced Microeconomics, ECON:3150 Intermediate Macroeconomics, and three of the applied field courses required for their track.

Students should pay close attention to the order in which they take courses, since some courses are prerequisites for others; see "Prerequisites" below. For help in developing a study plan, visit the Department of Economics web site.
The economics major (B.A. or B.S.) requires the following course work.

**MATHEMATICS AND STATISTICS COURSES (B.A.)**

Students earning a B.A. complete the following mathematics and statistics course work.

Both of these:
- ECON:2800 Statistics for Strategy Problems 3 s.h.
- MATH:1380 Calculus and Matrix Algebra for Business 4 s.h.

One of these:
- STAT:1020 Elementary Statistics and Inference 3 s.h.
- STAT:1030 Statistics for Business 4 s.h.

**MATHEMATICS AND STATISTICS COURSES (B.S.)**

Students earning a B.S. complete the following mathematics and statistics course work.

All of these:
- ECON:4800 Introduction to Econometrics 3 s.h.
- MATH:1850 & MATH:1860 Calculus I-II 8 s.h.

One of these:
- STAT:3120 Probability and Statistics 4 s.h.

The department recommends that students planning to pursue a graduate degree in economics take STAT:3100-STAT:3101 rather than STAT:3120. It also recommends that they take additional courses in mathematics, including MATH:2700 Introduction to Linear Algebra, MATH:2850 Calculus III, and MATH:3600 Introduction to Ordinary Differential Equations.

**ECONOMIC THEORY COURSES (B.A. AND B.S.)**

B.A. and B.S. students complete the following economic theory course work.

One of these:
- ECON:3100 Intermediate Microeconomics 3 s.h.
- ECON:3140 Advanced Microeconomics 3 s.h.

And:
- ECON:3150 Intermediate Macroeconomics 3 s.h.

**APPLIED FIELD COURSES (B.A. AND B.S.)**

B.A. students complete a total of five applied field courses (15 s.h.) in their track; B.S. students complete a total of four applied field courses (12 s.h.) in their track.

### Analytical Economics Track (B.A. and B.S.)

Four (B.A. students) or three (B.S. students) of these:
- ECON:4090 Natural Resource Economics 3 s.h.
- ECON:4110 International Economics 3 s.h.
- ECON:4140 Labor Economics 3 s.h.
- ECON:4160 Public Sector Economics 3 s.h.
- ECON:4170 Monetary Economics 3 s.h.
- ECON:4180 Industrial Organization 3 s.h.

### Business Economics Track (B.A. and B.S.)

Five (B.A. students) or four (B.S. students) of these:
- ECON:3325 Personnel Economics 3 s.h.
- ECON:3335 Money, Banking, and Financial Markets 3 s.h.
- ECON:3345 Global Economics and Business 3 s.h.
- ECON:3350 Industry Analysis 3 s.h.
- ECON:3355 Economic and Business Forecasting 3 s.h.
- ECON:3370 Household Finance 3 s.h.
- ACCT:2200 Managerial Accounting 3 s.h.
- MGMT:2100 Introduction to Management 3 s.h.

### Policy Economics Track (B.A. and B.S.)

Four (B.A. students) or three (B.S. students) of these:
- ECON:3345 Global Economics and Business 3 s.h.
- ECON:3610 Development of Local and Regional Economies 3 s.h.
- ECON:3620 Economic Growth and Development 3 s.h.
- ECON:3625 Environmental and Natural Resource Economics 3 s.h.
- ECON:3640 Regional and Urban Economics 3 s.h.
- ECON:3650 Policy Analysis 3 s.h.
- ECON:3690 Sports Economics 3 s.h.
- ECON:3750 Transportation Economics 3 s.h.
- ECON:3760 Health Economics 3 s.h.
- ECON:3790 Antitrust Economics 3 s.h.
- ECON:3800 Law and Economics 3 s.h.
- ECON:3875 Topics in Policy Economics 3 s.h.

And (B.A. and B.S. students):

### Prerequisites (B.A.)

Students must complete all of a course's prerequisites before they may register for the course.

Prerequisites for ECON:2800 Statistics for Strategy Problems:
- MATH:1380 Calculus and Matrix Algebra for Business, and
- STAT:1020 Elementary Statistics and Inference or STAT:1030 Statistics for Business

Prerequisites for most upper-level undergraduate courses in economics:
ECON:1100 Principles of Microeconomics and ECON:1200 Principles of Macroeconomics

Prerequisites for ECON:3100 Intermediate Microeconomics and ECON:3140 Advanced Microeconomics:
ECON:1100 Principles of Microeconomics and MATH:1380 Calculus and Matrix Algebra for Business

Prerequisites for ECON:3150 Intermediate Macroeconomics:
ECON:1200 Principles of Macroeconomics and MATH:1380 Calculus and Matrix Algebra for Business

Prerequisite for ECON:3355 Economic and Business Forecasting:
ECON:2800 Statistics for Strategy Problems

Prerequisites for courses numbered ECON:3790 or above:
ECON:3100 Intermediate Microeconomics or ECON:3150 Intermediate Macroeconomics, or both, depending on the course

Prerequisite for ECON:4200 Game Theory:
MATH:1380 Calculus and Matrix Algebra for Business

Prerequisites (B.S.)

Students must complete all of a course's prerequisites before they may register for the course.

Prerequisites for most upper-level undergraduate courses in economics:
ECON:1100 Principles of Microeconomics and ECON:1200 Principles of Macroeconomics

Prerequisites for ECON:3100 Intermediate Microeconomics and ECON:3140 Advanced Microeconomics:
ECON:1100 Principles of Microeconomics and MATH:1850 Calculus I

Prerequisites for ECON:3150 Intermediate Macroeconomics:
ECON:1200 Principles of Macroeconomics and MATH:1850 Calculus I

Prerequisite for ECON:3355 Economic and Business Forecasting:
ECON:2800 Statistics for Strategy Problems

Prerequisites for courses numbered ECON:3790 or above:
ECON:3100 Intermediate Microeconomics or ECON:3150 Intermediate Macroeconomics, or both, depending on the course

Prerequisite for ECON:4200 Game Theory:
MATH:1850 Calculus I

Prerequisite for ECON:4800 Introduction to Econometrics:
STAT:3101 Introduction to Mathematical Statistics II or STAT:3120 Probability and Statistics

Prerequisite for MATH:1860 Calculus II:
MATH:1850 Calculus I

Prerequisite for STAT:3100 Introduction to Mathematical Statistics I:
MATH:1560 Engineering Mathematics II: Multivariable Calculus or MATH:1860 Calculus II

Prerequisite for STAT:3101 Introduction to Mathematical Statistics II:
STAT:3100 Introduction to Mathematical Statistics I

Prerequisite for STAT:3120 Probability and Statistics:
MATH:1560 Engineering Mathematics II: Multivariable Calculus or MATH:1860 Calculus II

Bachelor of Business Administration

The Bachelor of Business Administration with a major in economics requires a minimum of 120 s.h., including 18 s.h. of work for the major. The program emphasizes economic foundations of business fields: accounting, finance, marketing, business law, and management. It provides good educational background for a variety of positions in business and government as well as for the study of law and for graduate study.

All students must complete the B.B.A. common requirements: the General Education courses, the prerequisites for admission to the college, prerequisites for declaring the business major, the business core, and the experiential learning requirement; see “Common B.B.A. Requirements” in the Bachelor of Business Administration (p. 654) section of the Catalog.

The economics major for the B.B.A. requires a set of courses in mathematics and statistics, which students take as part of the B.B.A. common requirements, and a set of courses in economic theory (6 s.h.). It also requires a set of applied field courses (12 s.h.) in one of three tracks: business economics, policy economics, or analytical economics.

The analytical economics track is for students planning to earn a graduate degree in a discipline that is highly quantitative or who plan to pursue technical and/or analytical work in the public or private sector. The business economics track is designed for students who intend to work in the private sector. The policy economics track is for students interested in earning a degree in law or a graduate degree in a discipline that is not highly quantitative, or in seeking a decision-making position in the public or private sector.

Students may request permission to apply a limited amount of transfer credit or correspondence credit toward the major, but they should take the following courses at the University of Iowa: ECON:3100 Intermediate Microeconomics or ECON:3140 Advanced Microeconomics, and ECON:3150 Intermediate Macroeconomics.

Students should pay close attention to the order in which they take courses, since some courses are prerequisites for others; see “Prerequisites” below. For help in developing a study plan, visit the Department of Economics web site.

The economics major for the B.B.A. requires the following course work.

MATHEMATICS AND STATISTICS COURSES (B.B.A.)

Students take these courses as part of the B.B.A. common requirements.

ECON:2800 Statistics for Strategy Problems 3 s.h.
MATH:1380 Calculus and Matrix Algebra for Business 4 s.h.
STAT:1030 Statistics for Business 4 s.h.

ECONOMIC THEORY COURSES (B.B.A.)

One of these:
ECON:3100 Intermediate Microeconomics 3 s.h.
ECON:3140 Advanced Microeconomics 3 s.h.
And:

ECON:3150 Intermediate Macroeconomics 3 s.h.

**APPLIED FIELD COURSES (B.B.A.)**

Students earning a B.B.A. complete a total of four applied field courses (12 s.h.) in their track.

**Analytical Economics Track (B.B.A.)**

Three of these:

ECON:4090 Natural Resource Economics 3 s.h.
ECON:4110 International Economics 3 s.h.
ECON:4140 Labor Economics 3 s.h.
ECON:4160 Public Sector Economics 3 s.h.
ECON:4170 Monetary Economics 3 s.h.
ECON:4180 Industrial Organization 3 s.h.
ECON:4190 Mathematical Economics 3 s.h.
ECON:4200 Game Theory 3 s.h.
ECON:4700 Topics in Analytical Economics 3 s.h.

And:

One additional economics course numbered from ECON:3250 through ECON:4700, excluding these five courses ECON:3870, ECON:3871, ECON:3872, ECON:3999, and ECON:4050 3 s.h.

**Business Economics Track (B.B.A.)**

Four of these:

ECON:3325 Personnel Economics 3 s.h.
ECON:3335 Money, Banking, and Financial Markets 3 s.h.
ECON:3345 Global Economics and Business Forecasting 3 s.h.
ECON:3350 Industry Analysis 3 s.h.
ECON:3355 Economic and Business Forecasting 3 s.h.
ECON:3370 Household Finance 3 s.h.

**Policy Economics Track (B.B.A.)**

Three of these:

ECON:3345 Global Economics and Business 3 s.h.
ECON:3610 Development of Local and Regional Economics 3 s.h.
ECON:3620 Economic Growth and Development 3 s.h.
ECON:3625 Environmental and Natural Resource Economics 3 s.h.
ECON:3640 Regional and Urban Economics 3 s.h.
ECON:3650 Policy Analysis 3 s.h.
ECON:3690 Sports Economics 3 s.h.
ECON:3750 Transportation Economics 3 s.h.
ECON:3760 Health Economics 3 s.h.
ECON:3790 Antitrust Economics 3 s.h.
ECON:3800 Law and Economics 3 s.h.
ECON:3875 Topics in Policy Economics 3 s.h.

One additional economics course numbered from ECON:3250 through ECON:4700, excluding these five courses ECON:3870, ECON:3871, ECON:3872, ECON:3999, and ECON:4050 3 s.h.

**Prerequisites (B.B.A.)**

Students must complete all of a course’s prerequisites before they may register for the course.

Prerequisites for most upper-level undergraduate courses in economics:
ECON:1100 Principles of Microeconomics and ECON:1200 Principles of Macroeconomics

Prerequisites for ECON:3100 Intermediate Microeconomics:
ECON:1100 Principles of Microeconomics and MATH:1380 Calculus and Matrix Algebra for Business

Prerequisites for ECON:3150 Intermediate Macroeconomics:
ECON:1200 Principles of Macroeconomics and MATH:1380 Calculus and Matrix Algebra for Business

Prerequisite for ECON:2800 Statistics for Strategy Problems:
STAT:1030 Statistics for Business

Prerequisites for courses numbered ECON:3790 and above:
ECON:3100 Intermediate Microeconomics or ECON:3150 Intermediate Macroeconomics, or both, depending on the course

**B.A. or B.S. with Teacher Licensure**

Economics majors in the College of Liberal Arts and Sciences (B.A. and B.S. students) who are interested in earning licensure to teach in elementary and/or secondary schools must complete the College of Education’s Teacher Education Program (TEP) in addition to the requirements for the major and all requirements for graduation. The TEP requires several College of Education courses and student teaching. Contact the Office of Education Services for details.

Students must satisfy all degree requirements and complete Teacher Education Program licensure before degree conferral.

**Four-Year Graduation Plan**

The following checkpoints list the minimum requirements students must complete by certain semesters in order to stay on the University’s Four-Year Graduation Plan. (Courses in the major are those required to complete the major; they may be offered by departments other than the major department.)

**Bachelor of Arts, Bachelor of Science**

**Before the fifth semester begins:** ECON:1100 Principles of Microeconomics, ECON:1200 Principles of Macroeconomics, and the math component of quantitative courses required for major

**Before the seventh semester begins:** ECON:3100 Intermediate Microeconomics, ECON:3150 Intermediate Macroeconomics, one economics course numbered 3000 or above, and at least 90 s.h. earned toward the degree
Before the eighth semester begins: three economics courses numbered 3000 or above and the statistics component of the quantitative course requirement

During the eighth semester: enrollment in all remaining course work in the major, all remaining General Education courses, and a sufficient number of semester hours to graduate

Bachelor of Business Administration

The following checkpoints are designed for students who enter the University as first-year pre-business students. In order to stay on the plan, students must maintain the grade-point average required for guaranteed admission to the Tippie College of Business and must apply for admission to the college by the established deadline.

Pre-business students must take BUS:3000 Business Communication and Protocol during their first semester after admission to the Tippie College of Business. Students admitted to the Tippie College of Business directly from high school must take BUS:3000 during their second year.

Before the third semester begins: ECON:1100 Principles of Microeconomics or ECON:1200 Principles of Macroeconomics, MATH:1380 Calculus and Matrix Algebra for Business, and STAT:1030 Statistics for Business, or equivalent courses

Before the fifth semester begins: ACCT:2100 Introduction to Financial Accounting, ACCT:2200 Managerial Accounting, and ECON:1100 Principles of Microeconomics or ECON:1200 Principles of Macroeconomics (whichever has not already been taken), or equivalent courses; and all General Education requirements

Before the seventh semester begins: all business core requirements, approximately half of the course work in the major (varies by major), and at least 90 s.h. earned toward the degree

During the eighth semester: all remaining course work in the major and a sufficient number of semester hours to graduate

Honors in the Major (B.A. and B.S.)

College of Liberal Arts and Sciences students majoring in economics have the opportunity to graduate with honors in the major. Departmental honors students must complete ECON:3100 Intermediate Microeconomics and ECON:3150 Intermediate Macroeconomics before their senior year. Interested students should consult the department’s honors advisor by the second semester of their junior year.

Honors students in economics typically register for ECON:3999 Honors Seminar in the fall of their senior year. To graduate with honors in the major, they define and complete a research project under the guidance of a supervising faculty member, earning up to 6 s.h. in ECON:4999 Honors Thesis in Economics. They present the thesis orally to a committee of three faculty members; typically the undergraduate honors advisor, the student’s research supervisor, and a third faculty member agreed upon by the student and the honors advisor.

Departmental honors students must be members of the University of Iowa Honors Program, which requires students to maintain a cumulative University of Iowa g.p.a. of at least 3.33 and to fulfill other requirements; visit Honors at Iowa to learn about the University’s honors program.

Honors in Business (B.B.A.)

Qualified B.B.A. students have the opportunity to pursue honors study in the Tippie College of Business. For more information, see “Honors in Business” in the Bachelor of Business Administration (p. 654) section of the Catalog and visit the Tippie College of Business Honors Program web site.

Minor

The minor in economics requires a minimum of 15 s.h. in economics courses, including 12 s.h. taken at the University of Iowa in Department of Economics courses numbered 3000 or above. Students must maintain a g.p.a. of at least 2.00 in all courses for the minor and in all UI courses for the minor. Course work in the minor may not be taken pass/nonpass.

Courses for Nonmajors

Students in the College of Liberal Arts and Sciences may wish to use economics courses as part of other majors or the General Education Program (p. 313). The introductory courses ECON:1100 Principles of Microeconomics and ECON:1200 Principles of Macroeconomics are approved for the Social Sciences area of General Education; they introduce the field of economics and the specialized topics of upper-division courses. The intermediate theory courses ECON:3100 Intermediate Microeconomics and ECON:3150 Intermediate Macroeconomics provide a deeper foundation in the core theories and methods of the discipline. They serve as preparation for upper-division field courses or as terminal courses in an economics study plan.

Course work in economics relates to majors in many other fields. For example, political science majors could elect ECON:3650 Policy Analysis; international studies majors, ECON:3345 Global Economics and Business; environmental planning and policy majors, ECON:3625 Environmental and Natural Resource Economics; pre-law students, ECON:3790 Antitrust Economics and ECON:3800 Law and Economics; mathematics and engineering majors, ECON:3100 Intermediate Microeconomics and ECON:4190 Mathematical Economics; and statistics majors, ECON:4800 Introduction to Econometrics.

Undergraduate Economics Forum

Students are invited to join the undergraduate Economics Forum. The group sponsors programs to help students plan for careers or graduate study and holds social events, special lectures, and round-table discussions. It provides opportunities for students to meet other economics majors and department faculty members.

Graduate Programs of Study

- Master of Arts in economics
- Doctor of Philosophy in economics

The department partners with the College of Law to offer a joint degree program; see “Joint Ph.D./J.D.” later in this section. It also participates in the M.B.A. program, which is offered by the Tippie School of Management; see Master of Business Administration Program (p. 696) in the Catalog.
Master of Arts
The Master of Arts is offered only to students working toward a Ph.D. in economics.

Doctor of Philosophy
The Doctor of Philosophy program in economics requires a minimum of 72 s.h. of graduate credit. The program provides rigorous training in economic theory, econometrics, and applied economics. It has six components: a coordinated sequence of core courses, a qualifying examination, a research paper, a set of major field courses, a dissertation proposal and comprehensive examination, and a dissertation. Requirements are as follows.

CORE SEQUENCE
First semester:
- ECON:5000 Economic Analysis I 3 s.h.
- ECON:5100 Microeconomics I 3 s.h.
- ECON:5200 Macroeconomics I 3 s.h.
Second semester:
- ECON:5010 Economic Analysis II 3 s.h.
- ECON:5110 Microeconomics II 3 s.h.
- ECON:5210 Macroeconomics II 3 s.h.
Third semester:
- ECON:5800 Econometrics 3 s.h.
Fourth semester:
- ECON:5810 Applied Econometrics 3 s.h.

QUALIFYING EXAMINATION
The qualifying examination is normally taken the summer after the first year.

RESEARCH PAPER
The research paper is normally completed the summer after the second year.

MAJOR FIELD COURSES
Each student chooses a major study area in addition to the core courses. The requirement for the major area is a minimum of 24 s.h. of intensive study in a field and in courses that enable students to understand the relationship between their specialty and related fields.

DISSERTATION PROPOSAL AND COMPREHENSIVE EXAMINATION
Students must defend a dissertation proposal in a comprehensive examination within one year of completing the research paper requirement.

DISSERTATION
Submission of the completed dissertation and an oral defense of the dissertation research completes the Ph.D. program.

Admission
Applicants must meet the admission requirements of the Graduate College; see the Manual of Rules and Regulations of the Graduate College. Application deadline for admission and financial support is January 15 for fall semester entry.

Applicants must take the Graduate Record Examination (GRE) General Test and have their scores sent to the University. Those whose first language is not English and who do not hold a baccalaureate or advanced degree from an accredited college or university in the United States must take the Test of English as a Foreign Language (TOEFL) and have their scores sent to the University.

Applicants must submit a completed Application for Graduate Admission, official transcripts from all institutions they have attended, and all official test scores to the University of Iowa Office of Admissions.

Joint Ph.D./J.D.
The Department of Economics and the College of Law offer a joint Doctor of Philosophy/Juris Doctor program; for information about the J.D. degree, see "Juris Doctor" in the College of Law (p. 969) section of the Catalog. Separate application to each degree program is required. Applicants must be admitted to both programs before they may be admitted to the joint degree program.

Special Seminar
Each year the department offers a seminar program that brings eminent economists from other universities and from government agencies to the University of Iowa campus. Presentations by Department of Economics faculty members and students also are featured.

Courses
Lower-Level Undergraduate
Students may take ECON:1100 Principles of Microeconomics and ECON:1200 Principles of Macroeconomics in either order or simultaneously. They are approved for the Social Sciences area of the College of Liberal Arts and Sciences General Education Program.

ECON:1100 Principles of Microeconomics 4 s.h.
Organization, workings of modern economic systems; role of markets, prices, competition in efficient allocation of resources and promotion of economic welfare; alternative systems; international trade. Requirements: B.B.A. students cannot use this course for General Education social sciences. GE: Social Sciences.

ECON:1200 Principles of Macroeconomics 4 s.h.
National income and output, employment and inflation; money, credit; government finance; monetary, fiscal policy; economic growth, development; international finance. Requirements: B.B.A. students cannot use this course for General Education social sciences. GE: Social Sciences.

ECON:1300 First-Year Seminar 1 s.h.
Small discussion class taught by a faculty member; topics chosen by instructor; may include outside activities (e.g., films, lectures, performances, readings, visits to research facilities).

ECON:2800 Statistics for Strategy Problems 3 s.h.
Continuation of STAT:1030; working knowledge of statistical techniques, scientific data-based approach to problem formulation and solution, statistical techniques in the context of real data analysis, assessment of defects in statistical analyses, using data for making business decisions, choosing appropriate statistical procedures, developing skill in communicating statistical results to audiences without knowledge of statistics. Prerequisites: MATH:1380 and STAT:1030.

Upper-Level Undergraduate and Graduate

**ECON:3100 Intermediate Microeconomics** 3 s.h.
Economic theory of the behavior of consumers, producers, and other economic agents; role of markets in coordinating economic activity, conditions that markets require for efficient allocation of resources; market imperfections; strategic behavior of economic actors. Prerequisites: ECON:1100 and MATH:1380.

**ECON:3140 Advanced Microeconomics** 3 s.h.
Mathematical treatment of the economic theory of the behavior of consumers, producers, and other economic agents; the role of markets in coordinating economic activity and the conditions required by those markets for an efficient allocation of resources; market imperfections; and the strategic behavior of economic actors. Prerequisites: ECON:1100 and (MATH:1380 or MATH:1850). Recommendations: MATH:1850.

**ECON:3150 Intermediate Macroeconomics** 3 s.h.
Measurement of macroeconomic indicators; economic growth and business cycles; use of macroeconomic models to study the role of government fiscal and monetary policies. Prerequisites: ECON:1200 and MATH:1380.

**ECON:3250 American Economic History** 3 s.h.

**ECON:3325 Personnel Economics** 3 s.h.
Microeconomic analysis of labor markets, related institutions; labor supply decisions made by workers, labor demand decisions made by firms, market equilibrium; economic analysis of unions; returns to education; family decisions. Prerequisites: ECON:1100 and ECON:1200.

**ECON:3335 Money, Banking, and Financial Markets** 3 s.h.
Role of money, institutions in determination of income, employment, prices in domestic and world economy. Prerequisites: ECON:1100 and ECON:1200.

**ECON:3345 Global Economics and Business** 3 s.h.
Modern theories of international trade and investment; role of tariffs and other restrictions of international trade; foreign exchange markets, international monetary arrangements, international economic policy. Prerequisites: ECON:1100 and ECON:1200.

**ECON:3350 Industry Analysis** 3 s.h.
Structural evolution; imperfect competition, resource allocation; development of public policy on monopoly; selected industries. Prerequisites: ECON:1100 and ECON:1200.

**ECON:3355 Economic and Business Forecasting** 3 s.h.
How to develop and utilize forecasts; emphasis on modern statistical methods and software applied to quantitative forecasting problems; specific applications to business and economics include forecasting sales, market prices, inventory, macroeconomic factors (interest rates, exchange rates, levels of employment). Prerequisites: ECON:1100 and ECON:1200 and ECON:2800.

**ECON:3370 Household Finance** 3 s.h.
Micro- and macroeconomic theory applied to economic decisions of families, households; practical and theoretical issues in income generation, spending and saving decisions, risk management and asset allocation, investments, and intergenerational wealth transfers. Prerequisites: ECON:1100 and ECON:1200.

**ECON:3610 Development of Local and Regional Economies** 3 s.h.
Theories, methods, and public policy in regional economic development; business and industrial locations, theories of regional growth and development, tools for regional economic analysis, technology and knowledge economy, globalization and trade, economic development finance and policy. Recommendations: introductory microeconomics. Same as URP:3136.

**ECON:3620 Economic Growth and Development** 3 s.h.
Determinants of rising living standards; accumulation of physical and human capital; predictions of economic growth models compared to observed changes in living standards. Prerequisites: ECON:1100 and ECON:1200.

**ECON:3625 Environmental and Natural Resource Economics** 3 s.h.
Environmental and resource use problems; efficient mechanisms and other policies for environmental protection, management of common property resources. Prerequisites: ECON:1100 and ECON:1200. Same as URP:3135.

**ECON:3640 Regional and Urban Economics** 3 s.h.
Theory of location and regional development; central place theory; why cities exist and trade with one another; models of land use patterns, rents; empirical tests of models; policy applications. Prerequisites: ECON:1100 and ECON:1200. Same as URP:3134.

**ECON:3650 Policy Analysis** 3 s.h.
Economic functions of government in modern economies; economic decision making; budgetary processes; effects of government expenditures, taxation on allocation of resources, distribution of income, economic growth, stability. Prerequisites: ECON:1100 and ECON:1200.
ECON:3690 Sports Economics 3 s.h.
Theory and literature of economic issues in professional sports; issues such as relative advantages of large-and-small-market teams, city subsidies for baseball and football stadiums, star players' true value to their teams; ideas from introductory economics (such as demand and cost curves) combined with additional economic theory, statistical evidence, and information about particular sports. Prerequisites: ECON:1100 and ECON:1200.

ECON:3750 Transportation Economics 3 s.h.
Overview of transportation markets—intercity, rural, urban; transportation modes—rail, highway, air, water, pipeline, transit; issues in finance, policy, planning, management, physical distribution, and environmental, economic, and safety regulation. Recommendations: ECON:1100 and ECON:1200. Same as GEOG:3940, URP:3350.

ECON:3760 Health Economics 3 s.h.
Structure of America's health care industry, economic analysis applied to its problems of production, pricing, distribution; cost-effectiveness, financing of medical costs, role of government. Prerequisites: ECON:1100 and ECON:1200.

ECON:3790 Antitrust Economics 3 s.h.
Topics in federal antitrust policy; merger policy, monopolization, predatory pricing, collusion, vertical restrictions, resale price maintenance, enforcement; case law, economics literature. Prerequisites: ECON:3100 or LAW:8146.

ECON:3800 Law and Economics 3 s.h.
Law examined through analytic tools of microeconomics; impact of legal rules on resource allocation, risk bearing, distribution of economic well-being. Prerequisites: ECON:1100.

ECON:3870 Federal Reserve Challenge 0 s.h.
Experience doing what Federal Reserve economists do every day: study the real U.S. economy, make forecasts and policy recommendations, defend their views to academic and professional economists; development of analytical skills, teamwork, how to build presentations. Prerequisites: ECON:3100 and ECON:3150.

ECON:3871 Federal Reserve Challenge II 0 s.h.
Participation in Federal Reserve Challenge after completion of ECON:3870. Prerequisites: ECON:3870.

ECON:3872 Individual Study in International Economics 1-3 s.h.
Basic economic theory used as foundation to examine international trade, macroeconomic policy, and financial market issues; focus on multinational firms that trade and/or produce across national borders and viewed within context of recent events.

ECON:3875 Topics in Policy Economics arr.
Topics vary. Prerequisites: ECON:1100 and ECON:1200.

ECON:3999 Honors Seminar 1-3 s.h.

ECON:4050 Readings and Independent Study in Economics arr.

ECON:4090 Natural Resource Economics 3 s.h.
Economics of natural resources; interaction between economic theory, empirical evidence, and public policy; land, water, fish, trees, minerals; externalities. Prerequisites: ECON:3100.

ECON:4110 International Economics 3 s.h.
Neoclassical model of international trade, imperfect competition and international trade and investment, role of trade barriers; regional trade agreements and the World Trade Organization. Requirements: ECON:3100 and ECON:3150, or graduate standing.

ECON:4140 Labor Economics 3 s.h.
Labor supply and demand; investments in human capital, compensating wage differentials, discrimination, long-term contracts, occupational choice, family decisions, unions, immigration. Prerequisites: ECON:3100.

ECON:4160 Public Sector Economics 3 s.h.
Economic functions of government; budgetary processes; effects of government expenditures, taxation on resource allocation, income distribution, economic growth and stability. Prerequisites: ECON:3100 and ECON:3150.

ECON:4170 Monetary Economics 3 s.h.
Demand for and supply of money; money's role in economy; empirical studies of money's impact; problems with monetary control. Prerequisites: ECON:3100 and ECON:3150.

ECON:4180 Industrial Organization 3 s.h.
Market structure; effects of business practices, informational problems on market structure; appraisal of antitrust policies, government regulation of business. Prerequisites: ECON:3100.

ECON:4190 Mathematical Economics 3 s.h.
Mathematical structure of economic principles, problems, systems; may include constrained optimization, choice under uncertainty, general equilibrium and welfare economics, dynamical systems and control theory, game theory. Prerequisites: ECON:3100 and ECON:3150.

ECON:4200 Game Theory 3 s.h.
Basic concepts of game theory including dominance, backward induction, Nash equilibrium, evolutionary stability, commitment, credibility, asymmetric information, adverse selection, signaling; provides students with a working understanding of game theory; examples drawn from economics and politics. Prerequisites: ECON:3100 and ECON:3150 and MATH:1380.

ECON:4700 Topics in Analytical Economics arr.
Topics vary. Prerequisites: ECON:3100 and ECON:3150.

ECON:4800 Introduction to Econometrics 3 s.h.
Single equation linear statistical models, estimation and hypothesis testing; serial correlation, heteroscedasticity, generalized least squares estimation; specification analysis; errors in variables; emphasis on interpretation, application of econometric models, methods, use of computers. Prerequisites: STAT:3120.
ECON:4900 Academic Internship
Participation in approved internship program (e.g., Washington Center Internships).

ECON:4999 Honors Thesis in Economics 3 s.h.
Independent student project directed by faculty or staff advisor; culminates in thesis that conforms to University Honors Program guidelines; may include empirical research, library research, applied projects. Prerequisites: ECON:3999 or BUS:3999. Requirements: admission to the Tippie College of Business honors program.

Graduate
Qualified undergraduates may enroll in graduate-level courses with consent of the department chair.

ECON:5000 Economic Analysis I 3 s.h.
Basic metric topology, convex analysis, function spaces, measure theory and integration.

ECON:5010 Economic Analysis II 3 s.h.
Behavior under uncertainty, macroeconomic models; dynamic programming, asset pricing, saving, consumption.

ECON:5100 Microeconomics I 3 s.h.
Consumer choice theory, producer theory, choice under uncertainty, basic game theory. Offered fall semesters.

ECON:5110 Microeconomics II 3 s.h.
General equilibrium and welfare analysis, adverse selection, the principal-agent problem, social choice, mechanism design. Offered spring semesters. Prerequisites: ECON:5100.

ECON:5200 Macroeconomics I 3 s.h.
Economic growth, business cycles, money and inflation. Offered fall semesters.

ECON:5210 Macroeconomics II 3 s.h.
Dynamic macroeconomic models; stochastic macroeconomics; time consistency equilibrium business cycle theory. Offered spring semesters. Prerequisites: ECON:5200.

ECON:5800 Econometrics 3 s.h.
Statistical inference in single and multiple equation stochastic models, models with nonindependent or nonidentically distributed error structure, dynamic models; OLS, GLS, IV, ML estimation; asymptotic distribution theory; exact, asymptotic hypothesis tests. Prerequisites: STAT:4101.

ECON:5810 Applied Econometrics 3 s.h.
Empirical problems; multiple linear regression, nonlinear regression, maximum likelihood, hazard functions, univariate and multivariate time series, flexible functional forms. Prerequisites: ECON:5800.

ECON:6310 Industrial Organization 3 s.h.
The firm, monopolistic competition, oligopoly and workable competition; industrial organization, nature of equilibrium under uncertainty. Prerequisites: ECON:5110.

ECON:6420 Macroeconomics III 3 s.h.
Current research in macroeconomics; development of research topics with emphasis on theoretical and empirical analysis. Prerequisites: ECON:5110 and ECON:5800.

ECON:6500 International Trade Theory 3 s.h.
The theory of international trade, including basic models of international trade; capital and labor mobility and trade; protection of international trade; the political economy of international trade; empirical applications of international trade.

ECON:6900 Contemporary Topics in Economics 3 s.h.
Topics not offered in other courses.

ECON:7000 Seminar in Economic Theory arr.

ECON:7010 Seminar in Economic Theory II arr.

ECON:7870 Workshop in Microeconomics 1 s.h.

ECON:7880 Workshop in Macro and Monetary Economics 1 s.h.

ECON:7950 Readings in Economics arr.

Entrepreneurial Management

Executive director
• David K. Hensley

Director
• Lynn Allendorf

Undergraduate certificate: entrepreneurial management
Faculty: http://www.iowajpec.org/about/faculty-and-staff/
Web site: http://www.iowajpec.org/

The Tippie College of Business and the John Pappajohn Entrepreneurial Center (JPEC) offer the Certificate in Entrepreneurial Management. They also work with other units on campus to offer entrepreneurship programs. The college collaborates with the College of Engineering to offer the Certificate in Technological Entrepreneurship (p. 914). The center partners with the Department of Management and Organizations (p. 682) to offer the entrepreneurial management track for Bachelor of Business Administration students majoring in management, and it collaborates with the College of Liberal Arts and Sciences to offer the Certificate in Performing Arts Entrepreneurship (p. 498) and the B.A. degree in Enterprise Leadership (p. 273).

The John Pappajohn Entrepreneurial Center also offers a wide variety of professional experiences designed to foster the development of entrepreneurs and future organizational leaders.

Undergraduate entrepreneurship programs at the University of Iowa combine academic course work and experiential learning with a focus on teaching entrepreneurial leadership, innovation and creativity, opportunity recognition and assessment, and strategic business planning. Several of the programs are open to all University of Iowa undergraduates. To learn more, visit the John Pappajohn Entrepreneurial Center web site.

Undergraduate Program of Study

Certificate

The Certificate in Entrepreneurial Management requires a minimum of 18 s.h. of credit. The certificate program is open to all current University of Iowa undergraduate students and to all individuals who hold a bachelor's degree and are not enrolled in a graduate or professional degree program. Students must maintain a g.p.a. of at least 2.00 in work for the certificate.

The certificate program is designed to help students acquire the entrepreneurial mindset that will enable them to launch new ventures or manage growing companies. It focuses on qualities and skills essential for entrepreneurs and successful business leaders.

Entrepreneurial management students learn from a select team of faculty members and business executives distinguished by their ability to teach, model, and inspire the entrepreneurial process. They learn skills for:
• recognizing and evaluating business opportunities;
• preparing strategic business and operating plans;
• preparing financial forecasts and budgets and evaluating financial performance;
• leading, motivating, and managing teams and individuals;
• communicating and negotiating in business situations; and
• enhancing professional and interpersonal skills.

Undergraduate students must declare their intention to pursue the certificate. Business students should contact the Tippie College of Business Undergraduate Program Office. Liberal arts and sciences students should contact the Academic Programs & Student Development office.

Students earning the certificate in conjunction with the Bachelor of Applied Studies (p. 1192) (University College) or the Bachelor of Liberal Studies (p. 1195) (University College) may complete the certificate's course work by distance education.

Students may begin working toward the Certificate in Entrepreneurial Management during their sophomore year. They may count a maximum of 6 s.h. of transfer credit toward the certificate, with approval from the entrepreneurship program director. Credit earned in entrepreneurship courses (prefix ENTR) is counted as semester hours earned in business.

The Certificate in Entrepreneurial Management requires the following course work. Many certificate courses have prerequisites and other requirements for registration; students must complete a course's prerequisites and must meet its registration requirements before they may register for the course.

ENTREPRENEURSHIP CORE
One of these:

ENTR:2000 Entrepreneurship and Innovation 3 s.h.
ENTR:3520 New Ventures in the Arts 3 s.h.


All of these:

ENTR:3100 Entrepreneurial Finance 3 s.h.
ENTR:3200 Entrepreneurial Marketing 3 s.h.
ENTR:4400 Managing the Growth Business 3 s.h.

ELECTIVES
Students earn an additional 6 s.h. in elective courses chosen from the following list. Students who wish to use a course not on the list must consult with the John Pappajohn Entrepreneurial Center director.

ENTR:3000 Practicum in Entrepreneurship 1-3 s.h.
ENTR:3300 Legal Aspects of Entrepreneurship 3 s.h.
ENTR:3400 Strategic Management of Technology and Innovation 3 s.h.
ENTR:3500 Social Entrepreneurship 3 s.h.
ENTR:3595 Nonprofit Organizational Effectiveness I 3 s.h.
ENTR:3600 E-Commerce Strategies for Entrepreneurs 3 s.h.
Facilities and Resources

Entrepreneurial Management Institute
The Entrepreneurial Management Institute works with top entrepreneurial management track students in the entrepreneurial management (B.B.A.) and enterprise leadership (B.A.) majors, and with entrepreneurial management certificate students to help them develop career advancement skills. Experienced business professionals and entrepreneurial leaders provide strategic career development training. Activities include seminars on developing professional résumés, creating extensive personal networks, networking with successful Iowa CEOs and business leaders, and making connections for internships and job placement.

Bedell Entrepreneurship Learning Laboratory
The Bedell Entrepreneurship Learning Laboratory is an applied learning environment for advanced entrepreneurship students creating a new business. The laboratory provides dedicated office space for individual students and teams, enabling them to concentrate on developing their business concepts. Students at the laboratory receive intensive mentoring and other assistance from faculty and staff associated with the John Pappajohn Entrepreneurial Center (JPEC) and the Small Business Development Center. Contact JPEC for information about applying to the laboratory.

Courses

Lower-Level Undergraduate

ENTR:1010 Exploring Entrepreneurship 3 s.h.
Introduction to entrepreneurship, including identifying characteristics of the entrepreneur, evaluating opportunities, engaging in customer discovery, design thinking, feasibility, financing, and planning for success.

ENTR:1300 First-Year Seminar 1 s.h.
Small discussion class taught by a faculty member; topics chosen by instructor; may include outside activities (e.g., films, lectures, performances, readings, visits to research facilities).

ENTR:1350 Foundations in Entrepreneurship 2 s.h.
Basic core business concepts faced by entrepreneurial managers in small business accounting, marketing, and business planning. Recommendations: non-business major interested in studying entrepreneurship.

ENTR:2000 Entrepreneurship and Innovation 3 s.h.

Upper-Level Undergraduate and Graduate

ENTR:3000 Practicum in Entrepreneurship 1-3 s.h.
Applied, experiential practicum in entrepreneurship designed to foster development of entrepreneurial leadership skills; opportunity recognition and assessment, strategic business planning, innovation and creativity, team leadership, professional communication skills, strategy development and execution.

ENTR:3100 Entrepreneurial Finance 3 s.h.
Understanding financial aspects of new and growing ventures; focus on preparing financial projections, analyzing financial performance, managing cash flow, and determining financial feasibility; detailed overview of various sources of capital available for start-up and growing ventures. Prerequisites: ENTR:2000 or ENTR:3520 or MGMT:3100.

ENTR:3200 Entrepreneurial Marketing 3 s.h.
Practical marketing concepts for evaluating the market potential for new products, services, or business opportunities; how to obtain and evaluate market data, determine customer demand, analyze the competition, design effective promotions, develop and implement effective sales strategies, and write a successful marketing plan. Prerequisites: ENTR:2000 or ENTR:3520 or MGMT:3100.

ENTR:3300 Legal Aspects of Entrepreneurship 3 s.h.
Areas of law significant to new and emerging businesses; business formation and structure, intellectual property, business agreements, legal processes. Prerequisites: ENTR:2000 or ENTR:3520 or MGMT:3100.

ENTR:3400 Strategic Management of Technology and Innovation 3 s.h.
New technology innovation and commercialization; technology innovation process, identification of commercialization strategies, feasibility analysis, intellectual property issues. Prerequisites: ENTR:2000 or ENTR:3520 or MGMT:3100.
ENTR:3500 Social Entrepreneurship 3 s.h.
Introduction to the growing field of social entrepreneurship; creation of ventures with dual missions of social benefit and return on investment; issues related to evaluating market opportunities; acquiring and managing scarce resources; sustainability; maximizing social and economic value. Prerequisites: ENTR:2000 or ENTR:3520 or MGMT:3100.

ENTR:3520 New Ventures in the Arts 3 s.h.

ENTR:3595 Nonprofit Organizational Effectiveness I 3 s.h.

ENTR:3600 E-Commerce Strategies for Entrepreneurs 3 s.h.
E-commerce opportunities and Internet business strategies for entrepreneurial ventures; how to develop effective web business strategies, latest technologies and trends in E-commerce, methods for maximizing traffic, impact of a company's web site. Prerequisites: ENTR:2000 or ENTR:3520 or MGMT:3100.

ENTR:4000 Seminar in Entrepreneurship 2-3 s.h.
Real estate and property issues facing the entrepreneurial venture; real estate development, legal and contractual issues, purchasing versus leasing, and basics of real estate financing and investing. Prerequisites: ENTR:2000 or ENTR:3520 or MGMT:3100.

ENTR:4050 Directed Readings in Entrepreneurship 3 s.h.
Independent study; topics and assignments approved by instructor.

ENTR:4200 Entrepreneurship: Business Consulting 3 s.h.
Students provide strategic business consulting services to start-up and early-stage companies; exploration of consulting process (proposal development, data collection and analysis, team dynamics, communications with clients, developing recommendations, final report preparation and presentation); projects involving market research and analysis, financial analysis and projections, and strategic business and operations planning. Prerequisites: ENTR:2000 or ENTR:3520 or MGMT:3100.

ENTR:4300 Entrepreneurship: Advanced Business Planning 3 s.h.
Creation and launch of a new venture; completion of a detailed business plan, creating an elevator pitch, and formal presentation of plan. Prerequisites: ENTR:2000 or ENTR:3520 or MGMT:3100.

ENTR:4400 Managing the Growth Business 3 s.h.
Preparation to effectively manage employees, customers, and suppliers; leadership for a growing entrepreneurial venture; opportunities to evaluate, practice, and refine critical professional management skills. Prerequisites: ENTR:2000 or ENTR:3520 or MGMT:3100. Requirements: 75 s.h. earned.

ENTR:4450 Professional Sports Management 3 s.h.
Detailed study of professional sports management and marketing; building and managing a front office, marketing sports properties, revenue generation models, developing media relationships, and capitalizing on new opportunities in the sports industry. Prerequisites: ENTR:2000 or ENTR:3520 or MGMT:3100.

ENTR:4460 Entrepreneurship and Global Trade 3 s.h.
Complex issues of business operations in a global economy; trade transactions related to importing and exporting, logistics, and ethical issues in international trade; global business management, global marketing, global supply chain management, and trade finance; preparation for work in global marketplace and for the Certified Global Business Professional certification exam offered by the North American Small Business International Trade Educators. Prerequisites: ENTR:2000 or ENTR:3520 or MGMT:3100.

ENTR:4510 Arts Leadership Seminar 3 s.h.
Performing arts management and administrative principles, practical applications, trends in arts leadership and advocacy. Prerequisites: THTR:3510 or THTR:3520 or ENTR:2000. Same as THTR:4510, INTD:4510, DPA:4510.

ENTR:4600 Advanced Venture Finance 3 s.h.
Examination of financing sources available to emerging and high potential ventures; special emphasis on angel investing and venture capital; preparation of pro forma financial statements, financial analysis, and determining valuations; how market, technology, and financial considerations impact capital formation; evaluation of real venture deals through experiential learning projects. Prerequisites: (ENTR:2000 or ENTR:3520 or MGMT:3100) and (ENTR:3100 or FIN:3000) and (ENTR:3200 or MKTG:3000).

ENTR:4900 Academic Internship arr.
Professional internship experience with academic credit (e.g., paper, course work).

Graduate

ENTR:6001 Introduction to Entrepreneurial Management 1 s.h.
The entrepreneurial process as it applies to new ventures and existing organizations; entrepreneurship and corporate entrepreneurship, attributes of successful entrepreneurial leaders, innovation and creativity, feasibility analysis.

ENTR:6002 Evaluating Entrepreneurial Opportunities 1 s.h.
Strategies to identify, assess, and capitalize on sustainable commercial opportunities; opportunity recognition, environmental analysis, intellectual property, strategic business planning.

**ENTR:6003 Basics of Entrepreneurial Marketing**  
1 s.h.  
Core marketing concepts facing entrepreneurial organizations; types of markets, product management, distribution, pricing, market research and analysis, market planning.

**ENTR:6004 Basics of Entrepreneurial Finance**  
1 s.h.  
Core financial concepts facing entrepreneurial organizations; accounting systems, financial statements, financial statement analysis, financial projections, sources of financing.

**ENTR:9000 Developing Professional Service Business**  
2-3 s.h.  
Use of professional skills and functional knowledge in creating a specialized service business. Same as CEE:5210.

**ENTR:9100 Entrepreneurship and Innovation**  
3 s.h.  
The entrepreneurial process from conception to birth of a new venture; attributes of successful entrepreneurs, innovation and creativity, opportunity recognition, venture screening, identification of resources, feasibility analysis.

**ENTR:9400 Evaluating Innovation Opportunities**  
3 s.h.  
Integrated, cross-functional perspective of how organizations identify and evaluate opportunities and develop strategies to compete in a global marketplace; innovation and creativity, opportunity recognition, venture screening, identification of resources, and strategic business planning.

**ENTR:9500 Managing the Growth Business**  
3 s.h.  
Issues faced by new, rapidly growing businesses; adapting organizational structure as business expands, building a management team, hiring new employees, managing strategic growth of a business; case studies, particularly in technology sector.

**ENTR:9550 Commercializing New Technology**  
3 s.h.  
Hands-on experience with the process of technology commercialization; real-world opportunity in the form of a technology developed in an academic environment or in the private sector and creation of a plan to transfer that technology to the marketplace; identifying a specific application of that technology (the product); identifying and sizing relevant market segments; determining the appropriate business and financial model; designing a business plan; presentation of business plans/opportunities to simulated venture capitalists.

**ENTR:9600 Seminar in Entrepreneurship**  
1-3 s.h.  
Topics vary; franchising, business acquisition, real estate development, e-commerce, technology transfer.

**ENTR:9700 Entrepreneurship: Business Consulting**  
3 s.h.  
Experience on teams providing consulting services to start-up and early-stage companies; the consulting process—proposal development, data collection and analysis, final report preparation and presentation; projects—marketing studies, financial projections, strategic planning.

**ENTR:9800 Entrepreneurship: Advanced Business Planning**  
1-3 s.h.  
Mentoring for individuals in final stages of preparing to launch their own business.
Finance

Chair

• Erik Lie

Undergraduate major: finance (B.B.A.)

Graduate degree: finance subprogram for the Ph.D. in business administration

Faculty: http://tippie.uiowa.edu/finance/faculty.cfm

Web site: http://tippie.uiowa.edu/finance/

The Department of Finance is committed to delivering undergraduate and graduate programs of study that integrate the technology and analytics of today's global financial community. The department's goal is to provide students with the technical skills they will need to enhance their managerial effectiveness, whether they work in large corporations, small organizations, or private consulting.

The department also partners with the Emmett J. Vaughan Institute of Risk Management and Insurance to offer the undergraduate Certificate in Risk Management and Insurance (p. 702).

Undergraduate Program of Study

• Major in finance (Bachelor of Business Administration)

Bachelor of Business Administration

The Bachelor of Business Administration with a major in finance requires a minimum of 120 s.h., including 20 s.h. of work for the major. The program provides a balance of theory, applications, and financial information technology that facilitates students' transition from classroom to workplace. Through fundamental finance principles and state-of-the-art financial market information technologies, students develop analytical abilities to interpret financial market data, implement the latest trading and investment strategies, and make effective managerial decisions in national as well as international settings.

The program stresses learning by doing, partnership with industry, and internships, with the goal of enhancing students' career development. Students receive a balanced education consistent with the globalization of business and the explosion in financial markets and information technology.

Careers for students majoring in finance include corporate treasury operations, cash management, mergers and acquisitions, investment banking, sales and security trading, security analysis, commercial banking and financial services, credit analysis, mortgage lending, financial planning, consulting, public administration, and venture capital.

The major in finance requires the following course work. For B.B.A. common requirements, see Bachelor of Business Administration (p. 654) in the Catalog.

Required courses—all of these:

- FIN:3100 Financial Information Technology 2 s.h.
- FIN:3200 Investment Management 3 s.h.
- FIN:3300 Corporate Finance 3 s.h.
- ACCT:3020 Financial Accounting and Reporting 3 s.h.

Electives—a total of three courses chosen from the following two lists:

- FIN:3400 Principles of Risk Management and Insurance 3 s.h.
- FIN:4020 Topics in Finance 3 s.h.
- FIN:4210 Futures and Options 3 s.h.
- FIN:4220 Fixed Income Securities 3 s.h.
- FIN:4230 Real Estate Process 3 s.h.
- FIN:4240 International Finance 3 s.h.
- FIN:4250 Applied Equity Valuation 3 s.h.
- FIN:4310 Advanced Corporate Finance 3 s.h.
- FIN:4320 Commercial Banking 3 s.h.
- FIN:4330 Investment Banking 3 s.h.
- FIN:4340 Wealth Management 3 s.h.
- FIN:4450 Risk Modeling 3 s.h.

Students may include a maximum of one of these in their three electives:

- FIN:4410 Corporate and Financial Risk Management 3 s.h.
- FIN:4420 Property and Liability Insurance 3 s.h.
- FIN:4430 Life and Health Insurance 3 s.h.
- FIN:4440 Employee Benefit Plans 3 s.h.

Certificate in Risk Management and Insurance

The Department of Finance and the Emmett J. Vaughan Institute of Risk Management and Insurance offer the undergraduate certificate program in risk management and insurance; see Risk Management and Insurance (p. 702) in the Catalog.

Graduate Program of Study

• Finance subprogram for the Doctor of Philosophy in business administration

In addition to offering a finance program for the Ph.D. in business administration, the department participates in the M.B.A. program, which is offered by the Tippie School of Management; see Master of Business Administration Program (p. 696) in the Catalog.

Doctor of Philosophy

Graduate students in finance may earn a Doctor of Philosophy in business administration. For a description of the Ph.D. program and requirements, see Doctor of Philosophy (p. 663) in the Catalog and visit the Department of Finance web site.

Applicants must meet the admission requirements of the Graduate College; see the Manual of Rules and Regulations of the Graduate College.

Courses

Lower-Level Undergraduate

FIN:1300 First-Year Seminar 1 s.h.

Small discussion class taught by a faculty member; topics chosen by instructor; may include outside activities (e.g., films, lectures, performances, readings, visits to research facilities).
Upper-Level Undergraduate and Graduate

FIN:3000 Introductory Financial Management 3 s.h.
Financial management goals and decision making; valuation of bonds and stocks, risk and return analysis, portfolio diversification, market efficiency, asset pricing, cost of capital, agency theory, capital budgeting, financial planning. Prerequisites: ACCT:2100 and ECON:1100 and ECON:1200. Requirements: 60 s.h. completed.

FIN:3100 Financial Information Technology 2 s.h.
Applications of commonly used financial software and data systems reviewed by student teams. Corequisites: FIN:3000.

FIN:3200 Investment Management 3 s.h.

FIN:3300 Corporate Finance 3 s.h.
Advanced managerial decision making; corporate financial policy, dividend policy, agency theory, corporate restructuring, capital structure strategies, mergers and acquisitions, option pricing fundamentals, convertible debt, callable debt, warrants. Prerequisites: FIN:3000. Corequisites: FIN:3100.

FIN:3400 Principles of Risk Management and Insurance 3 s.h.
Introduction to risk and insurance; risk identification and evaluation, demand for insurance, effects of limited liability, theory of moral hazard and adverse selection; business and personal risk; insurance as a risk management tool. Corequisites: FIN:3000.

FIN:3500 Hawkinson Scholar Seminar 1 s.h.
Advanced skill and understanding required for pursuit of investment banking, management consulting careers; specialized résumé and interview training, industry presentations, relevant case assignments.

FIN:3510 Hawkinson Scholar Seminar: Topics in Finance 0 s.h.
Subsectors in the financial services industry, including hedge funds, investment banking, commercial banking; valuation techniques used in real-world mergers, acquisitions, equity offerings, debt financing, and so forth.

FIN:4020 Topics in Finance 3 s.h.
Contemporary issues in finance. Prerequisites: FIN:3000.

FIN:4050 Directed Readings in Finance arr.
Individually guided readings in selected topics.

FIN:4210 Futures and Options 3 s.h.
Use of options, futures, and other derivative securities in financial management; understanding types of derivative securities, markets, trading technology; applications of risk management and speculation; pricing relations with underlying securities. Prerequisites: FIN:3200.

FIN:4220 Fixed Income Securities 3 s.h.
Theories of fixed income securities, term structure of interest rates; asset pricing models, valuation of fixed income securities and contingent claims, fixed income portfolio management, immunization strategies, yield curve analysis. Prerequisites: FIN:3000. Corequisites: FIN:3100.

FIN:4230 Real Estate Process 3 s.h.

FIN:4240 International Finance 3 s.h.
International monetary systems, exchange rate determination, use of currency derivative in hedging and risk management, currency swaps, foreign direct investment, international corporate finance, international capital budgeting, international portfolio investment, Third World debt, privatization, joint ventures. Prerequisites: FIN:3000. Corequisites: FIN:3100.

FIN:4250 Applied Equity Valuation 3 s.h.
Equity valuation and portfolio management techniques by investment professionals; economic forecasting, industry analysis, financial statement analysis, spreadsheet modeling, cost of capital estimation, equity valuation and portfolio construction; students manage the University of Iowa's Krause Fund (an endowed equity portfolio that blends academic rigor with real-world portfolio management experience). Prerequisites: FIN:3000. Requirements: UI cumulative g.p.a. of at least 2.80.

FIN:4310 Advanced Corporate Finance 3 s.h.
Issues relevant to financial management, payout policy, financial distress and bankruptcy, restructuring, market for corporate control; recent research and cases from the corporate arena; other topics (e.g., bankruptcy) to broaden application and understanding of finance theory. Prerequisites: FIN:3300.

FIN:4320 Commercial Banking 3 s.h.
Management of commercial banks and financial service firms; asset and liability management, credit policy, capital risk, liquidity planning, use of swaps and derivatives to hedge interest rate risk, global banking, investment strategies. Prerequisites: FIN:3000. Corequisites: FIN:3100.
FIN:4330 Investment Banking  3 s.h.
How investment banks fill critical roles in maintaining well-functioning financial markets and provide access to capital and strategic advice to companies and governments; recent global financial crisis; how banker's role as intermediary between companies and markets adds value and creates conflicts and risk. Prerequisites: FIN:3400 and FIN:3300.

FIN:4340 Wealth Management  3 s.h.
Financial services for client wealth management; how to make personal investment decisions and build diversified, comprehensive investment portfolios; investment theory; common behavioral biases that lead to investment pitfalls, mistakes; wealth management objectives, portfolio risk and reward, asset allocation, portfolio diversification, tax shield structures, retirement plans, wealth protection, risk management, behavioral finance, psychology of investing. Prerequisites: FIN:3000.

FIN:4410 Corporate and Financial Risk Management  3 s.h.
Analysis and treatment of pure and financial risks faced by business organizations; development and implementation of the risk management process, application of varied risk management techniques to identified exposures; how businesses manage risk and how insurance is used to manage the cost of risk; case studies. Prerequisites: FIN:3400. Corequisites: FIN:3100.

FIN:4420 Property and Liability Insurance  3 s.h.
Fundamentals of commercial property and liability insurance; commercial property and liability contracts, functions of property and liability insurers; regulation and financial analysis of property and liability insurers; marketing, underwriting, rate making, claim settlements. Prerequisites: FIN:3400.

FIN:4430 Life and Health Insurance  3 s.h.
Types of life insurance and annuity contracts and their uses; regulation of life and health insurers; development of financial plans using life insurance products; Social Security, group, and individual health insurance products, including major medical, disability income, long-term care policies; marketplace analysis; contractual provisions, determination of human life values, mathematics of life contingencies and pricing. Prerequisites: FIN:3400.

FIN:4440 Employee Benefit Plans  3 s.h.
Management of employee benefit plans (e.g., group life and health insurance, retirement programs); design, administration, and financing of employee benefits; federal administration of employee benefit plans; funding requirements, financial alternatives; funding and vesting of retirement annuities; design and management of health care plans, including "cafeteria" approach and nonqualified deferred compensation arrangements; economic effects and financing employee benefits and retirement plans in private and public sectors. Prerequisites: FIN:3400.

FIN:4450 Risk Modeling  3 s.h.
Theory used to solve real-life problems taken from a diverse set of risk management applications; varied areas where risk analysis has become important (i.e., finance, insurance, corporate risk management, personal financial planning); principles of probability theory, mathematical finance, and actuarial science developed for use in quantitative analysis of important risk management problems; spreadsheet-based course. Prerequisites: FIN:3000.

FIN:4900 Academic Internship  1-3 s.h.
Professional internship experience with associated academic content.

FIN:4999 Honors Thesis in Finance  3 s.h.
Independent student project directed by faculty or staff advisor; culminates in thesis that conforms to University Honors Program guidelines; may include empirical research, library research, applied projects. Prerequisites: BUS:3999 or ECON:3999. Requirements: admission to the Tippie College of Business honors program.

Graduate

FIN:7110 Finance Theory I  3 s.h.
Consumption-based models of asset pricing; arbitrage, contingent claims; market efficiency and information economics, behavioral models; emphasis on theory. Requirements: Ph.D. enrollment.

FIN:7120 Seminar in Corporate Finance  3 s.h.
Valuation (DCF and CAPM); valuation under certainty, uncertainty; financial structure, cost of capital; dividend policy; firm investment in perfect, imperfect capital markets. Requirements: Ph.D. enrollment.

FIN:7130 Finance Theory II  3 s.h.
Continuous time theories of financial markets, including connection between an arbitrage-free pricing system and martingales; pricing of contingent claims, general equilibrium and term structure theory. Requirements: Ph.D. enrollment.

FIN:7140 Advanced Empirical Finance  3 s.h.
Market efficiency and term structure theory tests; tests of asset pricing models, dividend policy and financial structure issues. Requirements: Ph.D. enrollment.

FIN:7850 Seminar in Finance  1 s.h.
Requirements: Ph.D. enrollment.

FIN:7950 Directed Reading in Finance-Ph.D.  arr.
Requirements: Ph.D. enrollment.


FIN:9010 Contemporary Topics in Finance  arr.

FIN:9150 Financial Modeling and Firm Valuation  3 s.h.
How to model firm value from a discounted cash flow perspective; identify a company’s key value drivers, create spreadsheet valuation models; projected financial valuation integrates projected pro forma accounting statements; forecasting, free cash flow estimation, industry competitive analysis. Prerequisites: MBA:8180.

FIN:9200 Portfolio Management 3 s.h.
Introduction to fundamental elements of modern portfolio theory, application to investment analysis; investment environment, instruments, types of investors; concepts of risk and return, broad perspective on historical risk and return of various asset classes; asset allocation decision, risk and return dynamics of a multiple securities portfolio; varied asset pricing models, how capital markets work for investors and users of capital. Prerequisites: MBA:8180.

FIN:9210 Derivatives 2-3 s.h.
Examination of the wide range of derivative securities that cover the financial landscape; the market place, trading, and investors; different derivative securities in existence, their relationship with the underlying securities, and pricing; applications of derivative securities to risk management and speculation; application of principles to fixed income, international finance, real estate, and securitization. Prerequisites: MBA:8180.

FIN:9220 Fixed Income Securities 3 s.h.
Conceptual framework and tools to undertake the valuation of fixed income securities and the management of fixed income portfolios; varied fixed income instruments and the markets in which they trade; introduction to basic building blocks of fixed income analysis, including concepts of duration, convexity, and term structure of interest rates; application of concepts in bond portfolio immunization strategies; use of interest rate derivatives in portfolio hedging applications. Prerequisites: MBA:8180.

FIN:9230 Real Estate Finance and Investments 2-3 s.h.
In-depth understanding of concepts and techniques of real estate financial analysis, equity investment decision making; real estate investing from analysis of developments through the securitization of mortgages; mortgage markets and pricing, real estate finance and investments, mortgage-backed securities, development process, real estate valuation, tax effects, securitized real estate, real estate cycles, application of derivative instruments, strategic asset allocation. Prerequisites: MBA:8180.

FIN:9240 International Finance 3 s.h.
Introduction to structure and functioning of global financial markets; currency market, international equity markets; use of derivatives in currency risk management for corporate and investment needs; corporate investment decisions in an international context. Prerequisites: MBA:8180.

FIN:9250 Applied Securities Analysis - Henry Fund I 3 s.h.
Manage Henry Fund portfolio, learn legal environment in which the fund operates, analyze potential investments, implement controls to monitor the fund’s performance; decisions and investment recommendations made by students; each student analyzes an economic sector and geographic region (i.e., utilities analyst and specialist in South East Asia); while the fund cannot currently invest directly in foreign listed stocks, it holds U.S. listed stocks with significant overseas interests and students are able to invest in a number of ADRs. Prerequisites: MBA:8180.

FIN:9260 Applied Securities Analysis - Henry Fund II 3 s.h.
Continuation of FIN:9250. Prerequisites: FIN:9250 and MBA:8180.

FIN:9270 Security Analysis 3 s.h.
Valuation of financial securities (primarily equities) using discounted cash flow model; industry, regulatory analysis; financial statement analysis; active portfolio management; value-based management techniques; valuation of firms outside the United States. Prerequisites: MBA:8180.

FIN:9280 Structured Finance-Securitization 3 s.h.
Design of debt, equity, and hybrid financing techniques to resolve issuer and investor problems that conventional methods cannot address; why and when corporations and financial institutions issue structured securities; how securities are designed and priced; how securities meet investors’ needs; securitized assets, mortgages, asset-backed securities, collateralized debt obligations, credit risk, valuation, cost of capital; legal, tax, and regulatory issues; design and implementation of structured-financed products. Prerequisites: MBA:8180.

FIN:9290 Alternative Investments and Portfolio Strategies 3 s.h.
Continuation of FIN:9200; alternative investments, including hedge funds, private equity funds, and venture capital vehicles; purpose of alternative investments, including the risk/return profile of alternatives and correlations with traditional asset classes; specific hedge fund styles, strategies, risk profiles; portfolio strategy topics, including diversification benefits, management of downside risk, international diversification, behavioral finance, performance measures, and performance attribution analysis. Prerequisites: FIN:9200 and MBA:8180.

FIN:9300 Corporate Investment and Financing Decisions 3 s.h.
Underpinnings and optimization of corporations’ investment and financing decisions; firm-wide and project-specific cost of capital, optimal capital structure decisions; in-depth capital budgeting methods, including real options techniques; corporate investment module of the class includes simulation analysis using Crystal Ball; cost of capital, valuation techniques, advanced capital budgeting, capital structure and dividend policy, option pricing models applied to corporate finance. Prerequisites: MBA:8180.
FIN:9310 Corporate Financial Strategy  2-3 s.h.
Major strategic decisions within the corporate form; risk management, including why firms engage in it, their methods for doing so, and exercises in the simulation of uncertainty; dividends and repurchases under the payout policy decision; corporate governance topics, including executive compensation, board structure, and institutional monitoring; merger and acquisitions analysis, including regulation, valuation, anti-takeover devices, payment method, and LBOs; divestitures and other restructuring topics, including corporate diversification, spin-offs, carve-outs, private workouts, and Chapter 11. Prerequisites: MBA:8180.

FIN:9350 Wealth Management  3 s.h.
Rapid growth of the field of wealth management over several decades, driven by general increase in personal wealth and increased responsibility for individuals to manage their own wealth; knowledge and tools to enter the financial services industry; financial planning industry, client characteristics, tax shield structures, insurance, asset allocation plans, estate planning, behavioral finance. Prerequisites: MBA:8180.

FIN:9390 Putting Finance into Practice  3 s.h.
Hands-on practical experience in corporate finance or investments; work in teams on a corporate finance project or an investment project for a corporate or institutional client; partner companies identify financial issues, challenges, and opportunities for students to help solve; students work with the companies and a faculty member to provide an analysis of the situation and proposals of actions to be taken. Prerequisites: MBA:8180.
Management and Organizations

Chair
• Amy L. Kristof-Brown

Undergraduate major: management (B.B.A.)
Graduate degree: management and organizations subprogram for the Ph.D. in business administration
Faculty: http://tippie.uiowa.edu/management-organizations/faculty.cfm
Web site: http://tippie.uiowa.edu/management-organizations/

The Department of Management and Organizations offers study of human resource management; individual, team, and organizational behavior; employment law and ethics; leadership and personal development; negotiations; training and development; and organizational design.

Undergraduate Program of Study
• Major in management (Bachelor of Business Administration)

The major in management has three tracks—the entrepreneurial management track offered by distance education as well as on campus, the human resource management track, and the leadership and management track. See "Bachelor of Business Administration" and "B.B.A. by Distance Education" below.

Bachelor of Business Administration

The Bachelor of Business Administration with a major in management requires a minimum of 120 s.h., including 21 s.h. of work for the major. The program is designed to give students a thorough background in the department's study areas as well as an understanding of their application to real-life situations. Specific courses, research projects, and other experiences, such as simulations, are blended to include both theoretical and pragmatic aspects of the field.

All B.B.A. students majoring in management choose one of three tracks: entrepreneurial management, human resource management, or leadership and management. The entrepreneurial management track is intended for students who plan to start their own business or work in a small business. The human resource management track covers business and employment law and prepares students to pursue careers in human resources or to earn a degree in law. The leadership and management track focuses on practical skills; it is best suited for students considering consulting or management careers. Each track provides a solid background in general management principles in addition to a specialized focus.

The major in management requires the following course work. For B.B.A. common requirements, see Bachelor of Business Administration (p. 654) in the Catalog.

COMMON REQUIRED COURSES
Students in all tracks must complete the following three courses.

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MGMT:3200 Individuals, Teams, and Organizations</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

MGMT:3300 Strategic Human Resource Management 3 s.h.
MGMT:4100 Dynamics of Negotiations 3 s.h.

ENTREPRENEURIAL MANAGEMENT TRACK
Students in the entrepreneurial management track complete all of these:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MGMT:3100 Entrepreneurial Strategy</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ENTR:3200 Entrepreneurial Marketing</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ENTR:4400 Managing the Growth Business</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

And 3 s.h. from these:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENTR:3000 Practicum in Entrepreneurship</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ENTR:4200 Entrepreneurship: Business</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ENTR:4300 Entrepreneurship: Advanced Business Planning</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ENTR:4600 Advanced Venture Finance</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ENTR:4900 Academic Internship</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

HUMAN RESOURCE MANAGEMENT TRACK
Students in the human resource management track complete all of these:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MGMT:3400 Employment Law</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>MGMT:4200 Staffing and Talent Management</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>MGMT:4350 Performance Management and Strategic Rewards</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

And 3 s.h. from these:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MGMT:3450 International Business Environment</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>MGMT:3900 Training and Developing Human Resources</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>MGMT:4300 Leadership and Personal Development</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ENTR:4200 Entrepreneurship: Business</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ENTR:4400 Managing the Growth Business</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

LEADERSHIP AND MANAGEMENT TRACK
Students in the leadership and management track complete all of these:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MGMT:3400 Employment Law</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>MGMT:4300 Leadership and Personal Development</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>MGMT:4325 Team and Project Management</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

And 3 s.h. from these:

<table>
<thead>
<tr>
<th>Course</th>
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</tr>
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<tbody>
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<td>3 s.h.</td>
</tr>
<tr>
<td>MGMT:3450 International Business Environment</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>MGMT:3500 Nonprofit Organizational Effectiveness I</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>MGMT:3900 Training and Developing Human Resources</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>MGMT:4200 Staffing and Talent Management</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ENTR:4200 Entrepreneurship: Business</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>
B.B.A. by Distance Education
Students may earn the B.B.A. with a major in management, entrepreneurial management track, by distance education. The degree requires a minimum of 120 s.h. of credit. To be admitted to the program, individuals must have earned a minimum of 60 s.h. of college-level credit with a g.p.a. of at least 2.75, and they must have completed four prerequisite courses (business calculus, statistics, microeconomics, and financial accounting) with a g.p.a. of at least 2.75. Contact the Department of Management and Organizations and the Division of Continuing Education to learn more.

Graduate Program of Study
- Management and organizations subprogram for the Doctor of Philosophy in business administration
In addition to offering a management and organizations program for the Ph.D. in business administration, the department participates in the M.B.A. program, which is offered by the Tippie School of Management; see Master of Business Administration Program (p. 696) in the Catalog.

Doctor of Philosophy
Graduate students in management and organizations may earn a Doctor of Philosophy in business administration. For a description of the Ph.D. program and requirements, see Doctor of Philosophy (p. 663) in the Catalog and visit the Department of Management and Organizations web site.

Applicants must meet the admission requirements of the Graduate college; see the Manual of Rules and Regulations of the Graduate College.

Courses

Lower-Level Undergraduate
MGMT:1300 First-Year Seminar 1 s.h.
Small discussion class taught by a faculty member; topics chosen by instructor; may include outside activities (e.g., films, lectures, performances, readings, visits to research facilities).

MGMT:2000 Introduction to Law 3 s.h.
General history, structure of law; law’s action in guiding changing economic, social patterns. Requirements: sophomore standing.

MGMT:2100 Introduction to Management 3 s.h.
Principles of management, organizational structure, decision making, leadership, line-staff relationships, administration of organizations. Requirements: sophomore standing.

Upper-Level Undergraduate and Graduate
MGMT:3100 Entrepreneurial Strategy 3 s.h.
The synergistic effect of entrepreneurial attributes (e.g., innovation, creativity, opportunity recognition) and managerial attributes (e.g., strategic management, planning, budgeting) on profit and nonprofit organizations.

MGMT:3200 Individuals, Teams, and Organizations 3 s.h.
Theories of organizational behavior applied to current business trends for individuals, teams, organizations; personality, managing diversity, work-family conflict, self-managed teams, charismatic leadership, work motivation, managing conflict, organizational culture. Prerequisites: MGMT:2000 and MGMT:2100.

MGMT:3300 Strategic Human Resource Management 3 s.h.
People management activities, policies, and practices that promote effective organizations; how changes in technology, business restructuring, legal and social concerns, other issues affect human resource management. Prerequisites: MGMT:2000 and MGMT:2100.

MGMT:3400 Employment Law 3 s.h.
Laws affecting employers and employees, such as regulatory health and safety policies, unemployment and retirement benefits, and employment discrimination including hiring, termination, testing issues. Prerequisites: MGMT:2000 and MGMT:2100.

MGMT:3450 International Business Environment 3 s.h.
Differences in international and domestic business; cultural, legal, political factors for managers. Requirements: junior or higher standing.

MGMT:3500 Nonprofit Organizational Effectiveness I 3 s.h.

MGMT:3600 Nonprofit Organizational Effectiveness II 3 s.h.
Qualities for leadership of nonprofit organizations, including relationships with staff and volunteers; relationship of nonprofit and outside world; marketing, public relations, advocacy strategies for nonprofits. Same as NURS:3500, SSW:3600, RELS:3701.

MGMT:3900 Training and Developing Human Resources 3 s.h.
Concepts, practices in training and development; strategic issues affecting the design, implementation, and evaluation of training programs and of career management and organizational development activities. Prerequisites: MGMT:3200 and MGMT:3300 and MGMT:3400.

MGMT:4000 Topics in Management 1-3 s.h.
Topics not regularly offered in other courses. Prerequisites: MGMT:2000 and MGMT:2100.

MGMT:4050 Directed Readings in Management and Organizations arr.

MGMT:4100 Dynamics of Negotiations 3 s.h.
Predictable aspects and dynamics of bargaining experiences; simulations, experiential exercises to foster skills needed for effective negotiation in almost any situation. Requirements: 90 s.h. completed.
MGMT:4200 Staffing and Talent Management 3 s.h.
Staffing processes; external influences such as labor markets, the legal environment; support activities such as job analysis, employment planning; staffing activities such as internal and external recruiting, selection. Prerequisites: MGMT:3200 and MGMT:3300 and MGMT:3400.

MGMT:4300 Leadership and Personal Development 3 s.h.
Practical development and application of leadership and managerial skills to enhance individual and organizational effectiveness. Prerequisites: MGMT:3200 and MGMT:3300. Requirements: senior standing.

MGMT:4325 Team and Project Management 3 s.h.
Fundamentals of managing teams and group projects; emphasis on practical application, using case studies, and interactive and experiential exercises. Prerequisites: MGMT:3200 and MGMT:3300 and MGMT:3400.

MGMT:4350 Performance Management and Strategic Rewards 3 s.h.
Role of pay and other rewards on organizational objectives; compensation's impact on employee behavior and performance; mix of pay and benefits in compensation systems; legal environment regulating pay and benefits; nonmonetary forms of reward. Prerequisites: MGMT:3200 and MGMT:3300 and MGMT:3400.

MGMT:4900 Academic Internship arr.
Professional internship experience with associated academic content.

MGMT:4999 Honors Thesis in Management and Organizations 3 s.h.
Independent student project directed by faculty or staff advisor; culminates in thesis that conforms to University Honors Program guidelines; may include empirical research, library research, applied projects. Prerequisites: BUS:3999 or ECON:3999. Requirements: admission to the Tippie College of Business honors program.

Graduate

MGMT:7120 Methods for Field Research (Ph.D.) 2 s.h.
Field methods commonly used in behavioral research with emphasis on surveys; different types of field research designs; evaluation of advantages and disadvantages of different research approaches; practice generating research questions and hypotheses appropriate for field survey designs; issues related to levels of analysis; develop and administer surveys to maximize response rates; identify appropriate samples; brief introduction to statistical approaches for analyzing survey data.

MGMT:7124 Methods for Qualitative Research 2 s.h.
Qualitative methods available to researchers; role and contributions of qualitative methods in research; reasons why qualitative research papers get rejected by journals and strategies to avoiding them; work with qualitative data; philosophy of science, formulating research questions, sampling and gaining access, alternative qualitative data collection methods, ways of coding and analyzing qualitative data, building theory from qualitative data.

MGMT:7128 Methods for Experimental Research 2 s.h.
Nature of research and principles of experimental design, including laboratory and field experiments (quasi-experiments), event sampling, and methods of small-group research; analysis of variance (ANOVA), analysis of covariance (ANCOVA), multi-attribute analysis of variance (MANOVA); orthogonal, planned and unplanned comparisons, factorial experiments including repeated measures, nested-factors design, Latin square designs; analysis of data sets with SPSS.

MGMT:7140 Meta-Analysis in Behavioral Social Sciences (Ph.D.) 3 s.h.
Methods for quantitative integration of findings in behavioral and social sciences; overall effect size or correlation, whether conflicting findings documented in research literature are due to moderators (interactions) or statistical and measurement artifacts.

MGMT:7160 Measurement Theory and Methods in the Behavioral and Social Sciences (Ph.D.) 3 s.h.
Measurement and statistical methods needed for conduct of methodologically sound, publishable research; kinds and levels of measurement; role of measurement in theory development and cumulative research knowledge; theory of measurement error; types of reliability and their estimation; corrections for bias in research results due to measurement error; basic scaling methods; criterion-related, content, and construct validity; cross-validation and shrinkage formulas; factor analysis; statistical power in research studies; introduction to meta-analysis; item analysis and scale construction; structural equation modeling. Requirements: basic statistical methods course.

MGMT:7320 Organizational Theory Ph.D. 2 s.h.
Organizational theory; effect of changing environment and technological factors on organizational structure and effectiveness; resource dependency and power, conflict, interorganizational network, population ecology, economic theories of organization, institutional theory.

MGMT:7330 Staffing Organizations (Ph.D.) 3 s.h.
Aspects of selection, including professional and legal standards; job analysis techniques, validation strategies; criterion development; selection methods (e.g., psychological tests, interviews, biographical data, assessment centers); ethical issues.
MGMT:7340 Group Processes (Ph.D.) 3 s.h.
In-depth understanding of how work groups and teams can be made more effective in organizations; team design issues (i.e., task type, interdependence, leadership, member composition); process issues including power, influence, communications, conflict, collective memory, and intergroup relations.

MGMT:7350 Leadership (Ph.D.) 3 s.h.
Understanding and preparation for implementing leadership in organizations; focus on reading and analysis of basic research-related leadership theories; contrast "great person" theories, traditional behavioral and situational theories, and transformational leadership theory.

MGMT:7360 Motivation and Attitudes (Ph.D.) 3 s.h.
Motivational processes, attitudes, communication and interorganizational networks; emphasis on motivational antecedents and consequences, theoretical implications for models of work performance.

MGMT:7370 Reward Systems (Ph.D.) 2 s.h.
Compensation systems, government influences, equity in compensation and individual wage determination; research-based examination of performance evaluation and appraisal, theories of work performance.

MGMT:7375 Performance Management 2 s.h.
Theories and research pertaining to employee work performance and evaluation; conceptual definitions of work performance; theories concerning the determinants of work performance; theory and research explaining the effectiveness and biases of performance evaluation systems; theories and empirical research on performance feedback; areas for future theoretical and empirical investigation in performance management.

MGMT:7380 Training and Development (Ph.D.) 2 s.h.
Research-based examination of training and development programs; emphasis on processes of needs assessment, instructional design, and evaluation; integration of training with other human resource management functions; design of management development initiatives.

MGMT:7385 Social and Human Capital 2 s.h.
Theory, research, and methods for understanding social capital as a resource available to individuals resulting from the social structure which they are located; readings focus on application of social networks to various content areas at individual, team, and organizational units of analysis; examination of relationships among social and human capital on individual and team outcomes; emphasis on understanding existing theory and empirical findings; social network research in terms of study design and analysis through software programs including UCINET and R.

MGMT:7700 Mentored Research arr.
Management research conducted by doctoral students under faculty supervision; culminates in second-year research paper.

MGMT:7850 Seminar in Management 2-3 s.h.
Topics vary.

MGMT:7900 Contemporary Topics in Management and Organizations 2-3 s.h.
Research topics in human resources and organizational behavior.

MGMT:7950 Directed Readings in Management and Organizations arr.

MGMT:7975 Thesis in Management and Organizations arr.
Management research conducted by doctoral students under faculty supervision; culminates in dissertation.

MGMT:9090 Influence and Constructive Persuasion 3 s.h.
Exploration of methods of persuasion and the science behind why and how influence works in a contemporary business setting; leadership as a function of consensus building, convincing, and motivating in today's team-based, knowledge-centric enterprises; how leaders select from a variety of influence techniques to get others' commitment to a course of action rather than commanding others; persuasion—using solid evidence coupled with emotional appeal—as capacity to present a message in a way that leads others to support it; how persuasion, when used effectively, creates a sense of freedom—others freely choose your perspective and support it.

MGMT:9091 Corporate Social Responsibility and Sustainability 2-3 s.h.
Introduction to main corporate social responsibility (CSR) and sustainability issues; current debates; costs and benefits of CSR/sustainability; relationship between leadership, innovation, and CSR; CSR’s effects on companies' ability to attract and retain good employees; numerous cases studies ranging from small to large companies from various sectors including food and agriculture, manufacturing, finance, mining, energy, retail, transportation; students read and debate articles and case studies written by leading business experts, academics, and CEOs; individual or team work on a CSR change analysis.

MGMT:9110 Dynamics of Negotiations 3 s.h.
Predictable aspects and dynamics of bargaining experiences; simulations, experiential exercises to foster skills needed for effective negotiation in almost any situation. Requirements: M.B.A. enrollment.

MGMT:9120 Leadership and Personal Development 2-3 s.h.
Major theories; determinants of leader effectiveness, personal and career success; practical development of leadership, managerial skills to enhance individual, organizational effectiveness. Prerequisites: MBA:8120.

MGMT:9130 Strategic Management of Change 3 s.h.
How congruence in organizational strategy, structure and culture, job design, and employee characteristics produces effective organizations; emphasis on managing organizational change, implementing and working in teams, project management. Prerequisites: MBA:8120.

MGMT:9150 Nonprofit Organizational Effectiveness I 3 s.h.

MGMT:9160 Nonprofit Organizational Effectiveness II 3 s.h.

MGMT:9210 Law and Ethics 2-3 s.h.
Legal issues surrounding start-up and day-to-day management of a business; contract law, standard business formations, tort law, employment law, business ethics, alternative dispute resolution.

MGMT:9220 Maximizing Team Performance 3 s.h.
Current approaches to implementing effective teams within organizations; team selection and formation, group dynamics, facilitation skills, performance and obstacle management.

MGMT:9230 Managing and Preventing Conflict 3 s.h.
Skills for management of high-conflict situations in the workplace and for long-term business success and job satisfaction; experience developing mediation-based skills and communication techniques to prevent and resolve workplace conflicts.

MGMT:9250 Managing Employee Performance 3 s.h.
Concepts and practices to effectively manage, measure, and improve employee performance; establishing and communicating organizational expectations, the manager as coach and motivator, measurement methodologies, performance improvement methods. Requirements: MBA:8120 or previous course work in organizational behavior/development or management.

MGMT:9260 Strategic Employee Development 3 s.h.
Concepts, practices in training and development; strategic issues affecting the design, implementation, and evaluation of training programs and of career management and organizational development activities.

MGMT:9270 Human Resource Management 3 s.h.
Systematic approach to managing human resources through practices consistent with validated theories and empirical research; human resources practices and business strategies; human resources strategy, recruitment and selection, training and development, employment law, international human resources, career management, compensation.
Management Sciences

Chair
• Nick Street

Undergraduate major: business analytics and information systems (B.B.A.)
Graduate degrees: M.S. in business analytics; management sciences subprogram for the Ph.D. in business administration
Faculty: http://tippie.uiowa.edu/management-sciences/faculty.cfm
Web site: http://tippie.uiowa.edu/management-sciences/

The Department of Management Sciences specializes in using advanced computation and mathematical techniques to solve critical business problems. Its strengths in research and instruction include operations management, business analytics, information systems, and quantitative methods.

Undergraduate Program of Study
• Major in business analytics and information systems (Bachelor of Business Administration)

Bachelor of Business Administration

The Bachelor of Business Administration with a major in business analytics and information systems requires a minimum of 120 s.h., including 21 s.h. of work for the major. The program provides a variety of educational experiences that develop students' knowledge of managerial decision-making systems. Students acquire skill in applying this knowledge by constructing quantitative models, using computer technology, and creating database systems.

The major prepares students for career opportunities in both manufacturing and service organizations. Graduates find entry-level work as computer programmers, systems analysts, sales representatives with computer companies, and management trainees. Entry-level work in operations management is found in materials management, line supervision, purchasing, and manufacturing systems.

All B.B.A. students majoring in business analytics and information systems choose one of two tracks: business analytics or information systems.

COMMON REQUIRED COURSES
Students in both tracks must complete these three courses.

- MSCI:3030 Business Process Analysis 3 s.h.
- MSCI:3200 Database Management 3 s.h.
- MSCI:4250 BAIS Capstone Project 3 s.h.

BUSINESS ANALYTICS TRACK
Students in the business analytics track complete all of these:

- MSCI:3025 Decision Support Systems 3 s.h.
- MSCI:3500 Business Intelligence 3 s.h.
- MSCI:3800 Optimization and Simulation Modeling 3 s.h.

INFORMATION SYSTEMS TRACK
Students in the information systems track complete all of these:

- MSCI:3020 Business Programming 3 s.h.
- MSCI:3300 Software Design and Development 3 s.h.
- MSCI:3400 Data Communications 3 s.h.

ELECTIVES (BOTH TRACKS)
All students complete at least 3 s.h. from these:

- MSCI:3100 Applied Information Systems 3 s.h.
- MSCI:3920 Supply Chain Management 3 s.h.
- MSCI:4220 Database Management and Web Services 3 s.h.
- MSCI:4280 Computer Networks and Security 3 s.h.
- CS:1210 Computer Science I: Fundamentals 4 s.h.
- ECON:3355 Economic and Business Forecasting 3 s.h.
- Any computer science course for which CS:1210 is a prerequisite 3-4 s.h.
- Any course required for the nonselected track 3 s.h.

Graduate Program of Study
• Master of Science in business analytics
• Management sciences subprogram for the Doctor of Philosophy in business administration

The department offers a Master of Science in business analytics and administers a Certificate in Business Analytics; see Business Analytics (p. 662) in the Catalog. They also offer a management sciences program for the Ph.D. in business administration. In addition, the department participates in the M.B.A. program, which is offered by the Tippie School of Management; see Master of Business Administration Program (p. 696) in the Catalog.

Master of Science

The Master of Science program in business analytics requires a minimum of 30 s.h. of graduate credit, of which 24 s.h. must be unique to the M.S. degree. The 24 s.h. can include 15 s.h. earned toward the Certificate in Business Analytics; the program is designed so that students can move into the M.S. program upon completion of the certificate. No thesis is required. A cumulative g.p.a. of at least 2.75 is required in all course work.

Students may be allowed to apply up to 6 s.h. of course work from another institution toward the M.S. with approval by petition to the director of the master's program.

Applicants must meet the admission requirements of the Graduate College; see Manual of Rules and Regulations of the Graduate College.

The digital revolution empowered by the Internet and computer technology in business and individual life during the last several decades has generated unimaginable amounts of data in the form of digital records stored in databases and file servers. The volume, velocity, and variety of these data have produced a new set of
problems and challenges for businesses and organizations in their pursuit of competitiveness, effectiveness, and efficiency. These problems and challenges also have created unprecedented opportunities for businesses and organizations to discover, model, understand, and serve their customers and partners in ways never imagined and to supply details never possible before. Businesses and organizations that are able to master this volume of data will have a tremendous competitive advantage over their competition in the marketplace.

As the need for implementing data analytic solutions grows, demand for professionals who understand and are capable of working with and exploring this data has exploded in recent years. This program addresses the growing need to manage and analyze the rapidly increasing amount of data that is available to support business decision making.

Students complete 15 s.h. in core courses, a capstone project, and 12 s.h. in elective course work. The capstone course is a group project that solves a real-world business problem. Elective course work allows students to deepen or broaden their skills.

The following course work is required.

**CORE COURSES**
All of these:

- MSCI:6070 Data Science 3 s.h.
- MSCI:9100 Business Analytics 3 s.h.
- MSCI:9110 Advanced Analytics 3 s.h.
- MSCI:9210 Introduction to Modeling with VBA 3 s.h.
- MSCI:9230 Database Systems 3 s.h.

**CAPSTONE COURSE**
This course:

- Capstone/Real-World Project 3 s.h.

**ELECTIVES**
Students select 12 s.h. from the following.

- MSCI:9180 Statistical Methods for Process Improvement 3 s.h.
- A text analytics course 3 s.h.
- A programming and databases for big data course 3 s.h.
- An operations analytics course 3 s.h.
- A health care analytics course 3 s.h.
- A marketing analytics course 3 s.h.

**Doctor of Philosophy**

Graduate students in management sciences may earn a Doctor of Philosophy in business administration. For a description of the Ph.D. program and requirements, see Doctor of Philosophy (p. 663) in the Catalog and visit the Department of Management Sciences web site.

Applicants must meet the admission requirements of the Graduate College; see Manual of Rules and Regulations of the Graduate College.

**Courses**

**Lower-Level Undergraduate**

- **MSCI:1300 First-Year Seminar** 1 s.h.
  Small discussion class taught by a faculty member; topics chosen by instructor; may include outside activities (e.g., films, lectures, performances, readings, visits to research facilities).

- **MSCI:1500 Business Computing Essentials** 2 s.h.
  Basic proficiency with common business application software (word processing, spreadsheet, presentation software, database); simulation training to achieve requisite skills; additional support available via optional textbook or ebook; online, modular, self-taught course.

**Upper-Level Undergraduate and Graduate**

- **MSCI:3000 Operations Management** 3 s.h.
  Strategic, tactical, operational issues that arise in management of production and service operations; product and process design, facilities planning, quality management, materials management, operations planning and scheduling, emerging technologies in production and service management. Prerequisites: STAT:1030. Requirements: junior standing.

- **MSCI:3005 Information Systems** 3 s.h.
  Application of computing principles to solving business problems; information technology in modern organizations; focus on sound data analysis to support decision making; tools used for problem solving (spreadsheets, databases, web applications); role of information systems in organizations; components of information technology; Internet and network economy; basic data analysis and visualization; decision-making logic represented as algorithms; perform what-if analysis with data; emerging technologies. Prerequisites: MSCI:1500.

- **MSCI:3020 Business Programming** 3 s.h.
  Introduction to algorithms, data structures, and object-oriented programming constructs to solve business problems. Prerequisites: MSCI:3005.

- **MSCI:3025 Decision Support Systems** 3 s.h.
  Introduction to programming Visual Basic for Applications in Excel to develop spreadsheet-based decision-support systems. Prerequisites: MSCI:3005.

- **MSCI:3030 Business Process Analysis** 3 s.h.
  Design, management, and improvement of business processes; data-driven approach to map a value stream and analyze industrial and service-oriented business processes to identify improvement opportunities; discrete-event simulation tools utilized to model business processes and demonstrate effect of variability on performance metrics; role of information systems to increase an organization’s efficiency; project management skills with particular emphasis on understanding issues involved in designing an information system to successfully support a business operation. Prerequisites: MSCI:3000.
MSCI:3070 Management Sciences Topics  
Special topics in management sciences and information systems.

MSCI:3100 Applied Information Systems  
Application of computer technology to accounting and transaction processing systems; information systems infrastructure and trends; problem solving with microcomputer spreadsheets, databases; accounting cycle operations. Prerequisites: ACCT:2100 and ACCT:2200 and MSCI:3005. Same as ACCT:3600.

MSCI:3200 Database Management  
Design and implementation of a database using relational DBMS; emphasis on issues of logical and physical design, database administration, concurrency control, maintenance. Prerequisites: MSCI:3005.

MSCI:3300 Software Design and Development  
Design and development of an information system; emphasis on programming and stages of software design life cycle, implemented using UML. Corequisites: MSCI:3020, MSCI:3030, and MSCI:3200; if not taken as prerequisites.

MSCI:3400 Data Communications  
Computer communications: computer-communication system, hardware, data transmission principles; examples of existing communication networks; related managerial issues. Prerequisites: MSCI:3005.

MSCI:3500 Business Intelligence  
Introduction to predictive analytics methods motivated by problems in operations, marketing, finance and accounting; data and text mining techniques, including classification, clustering, and association analysis. Prerequisites: ECON:2800.

MSCI:3800 Optimization and Simulation Modeling  
How to leverage data and apply spreadsheet optimization software and Monte Carlo simulation to form optimal decision policies. Prerequisites: ECON:2800.

MSCI:3920 Supply Chain Management  
Key issues in design and management of global supply chains; issues in integration of business processes across organizations that are concerned with movement of goods, delivery of services, and information flow along the supply chain in order to create value for the customer; issues in coordinating production and logistics within a firm and with outside suppliers and customers in the supply chain. Prerequisites: MSCI:3000.

MSCI:4050 Directed Readings  
arr.

MSCI:4220 Database Management and Web Services  
Advanced database management topics and basics of web services; how to retrieve real-world data from web services; use of SQL and PL/SQL to analyze data in relational databases. Prerequisites: MSCI:3200.

MSCI:4250 BAIS Capstone Project  
Individual or team senior project incorporating track-specific knowledge and skills from BAIS curriculum; projects from real-world customer, (e.g., software system, network design/implementation or data/process analysis); outcomes include written documentation, presentation, project report. Prerequisites: MSCI:3030 and MSCI:3200 and (MSCI:3300 or MSCI:3500). Requirements: 90 s.h. completed.

MSCI:4280 Computer Networks and Security  
Introduction to network management; emphasis on cost effective, reliable, and secure configuration and management of network switches, routers, clients, servers, and users in local and wide area network architectures; basic router and switch configuration options, routing protocols, VLANs, switch loop avoidance, access control lists, network access control mechanisms, encryption; Public Key Infrastructure and network user security; hands-on activities with routers and switches, Cisco networking simulators, and virtual machines using IPv4 and IPv6 protocols. Prerequisites: MSCI:3400.

MSCI:4900 Academic Internship  
Professional internship experience with associated academic content.

MSCI:4999 Honors Thesis in Management Sciences  
Independent student project directed by faculty or staff advisor; culminates in thesis that conforms to University Honors Program guidelines; may include empirical research, library research, applied projects. Prerequisites: BUS:3999 or ECON:3999. Requirements: admission to the Tippie College of Business honors program.

Graduate

MSCI:6060 Data Programming in R  
Introduction to principles and practices of handling, cleaning, processing, and visualizing data using R programming language; basic programming skills that can be applied to software development in any programming language; variables and data types, control structures, functions and subroutines, arrays and other simple data structures.

MSCI:6070 Data Science  
Underlying concepts and practical computational skills of data-mining tools including penalty-based variable selection (LASSO), logistic regression, regression and classification trees, clustering methods, principal components and partial least squares; analysis of text and network data; theory behind most useful data mining tools and how to use these tools in real-world situations; software for analysis, exploration, and simplification of large high-dimensional data sets. Prerequisites: MSCI:9100 or MBA:8150.
MSCI:6100 Text Analytics 3 s.h.
Concepts and techniques of text mining; practice of using statistical tools to automatically extract meaning and patterns from collections of text documents; topics include document representation, text classification and clustering, sentiment analysis and topic modeling. Prerequisites: MSCI:9100 and MBA:8150 and MSCI:9060.

MSCI:6190 Knowledge Management 3 s.h.
How organizations acquire, manage, and use information; knowledge management and competitive intelligence, information from inside and outside the organization; organization types, including library, corporate, and nonprofit. Same as SLIS:6190.

MSCI:6200 Database Analysis and Design 3 s.h.
Advanced topics in database management systems.

MSCI:6300 Dynamic Programming 3 s.h.
Fundamentals of discrete sequential dynamic programming with special focus on situations in which outcomes are uncertain; formulation and analysis of deterministic and stochastic dynamic programs under several objective criteria; emphasis on rapidly expanding field of approximate dynamic programming; applications including inventory control, vehicle routing, and resource allocation.

MSCI:6421 Knowledge Discovery 3 s.h.
Knowledge discovery process, including data reduction, cleansing, transformation; advanced modeling techniques from classification, prediction, clustering, association; evaluation and integration. Same as CS:6421.

MSCI:6600 Linear Programming 3 s.h.
Mathematical programming models; linear and integer programming, transportation models, large-scale linear programming, network flow models, convex separable programming. Requirements: calculus and linear algebra. Same as IE:6600.

MSCI:6700 Discrete Optimization 3 s.h.
Introduction to modeling and solving discrete optimization problems; integer programming, network flows, dynamic programming. Prerequisites: MSCI:6600.

MSCI:6800 Web Mining 3 s.h.
Techniques for mining the web and other unstructured or semistructured, hypertextual, distributed information repositories; crawling, indexing, ranking, filtering algorithms.

MSCI:6900 Heuristic Search 3 s.h.
Design of heuristic search algorithms to find good (near-optimal) solutions to difficult (NP-hard) optimization problems that occur in many disciplines; basic heuristic concepts (local search, greedy search, problem decomposition) which serve as fundamental constructs for metaheuristics, including simulated annealing, genetic algorithms, tabu search, variable neighborhood search; introduction to various optimization problems and survey of various heuristic approaches; underlying theoretical structure of several heuristic methods; how to implement a heuristic algorithm.

MSCI:7000 Management Sciences Topics 3 s.h.

MSCI:7850 Research Seminar in Management Sciences 1 s.h.
Current research topics. Requirements: Ph.D. enrollment.

MSCI:7900 Special Topics in Management Sciences arr.

MSCI:7950 Directed Readings arr.

MSCI:7975 Thesis in Management Sciences arr.
Requirements: Ph.D. enrollment.

MSCI:9060 Data Programming in R 2 s.h.
Introduction to principles and practices of handling, cleaning, processing, and visualizing data using R programming language; basic programming skills that can be applied to software development in any programming language; variables and data types, control structures, functions and subroutines, arrays and other simple data structures. Prerequisites: MSCI:9100.

MSCI:9070 Data Science 2 s.h.
Underlying concepts and practical computational skills of data-mining tools including penalty-based variable selection (LASSO), logistic regression, regression and classification trees, clustering methods, principal components and partial least squares; analysis of text and network data; theory behind most useful data mining tools and how to use these tools in real-world situations; software for analysis, exploration, and simplification of large high-dimensional data sets. Prerequisites: MSCI:9100.

MSCI:9100 Business Analytics 3 s.h.
Introduction to analytical techniques for making business decisions; utilizing Excel for application of descriptive and predictive analytical tools to solve practical business problems using real world data; dealing with uncertainty in decision making; formal probability concepts and statistical methods for describing variability (decision trees, random variables, hypothesis testing); application of techniques (linear regression, Monte Carlo simulation, linear optimization) to model, explain, and predict for operational, tactical, and strategic decisions.

MSCI:9110 Advanced Analytics 2-3 s.h.
Development of data-driven, problem-solving skills for prediction of uncertain outcomes and prescription of business solutions; linear and nonlinear regression, Monte Carlo simulation, forecasting, data mining, and optimization utilizing spreadsheets and dedicated software packages. Prerequisites: MSCI:9110 or MBA:8150.

MSCI:9120 Supply Chain Management 3 s.h.
Design, operation, and management of a supply chain; supplier and customer contracting and partnering, inventory, transportation and logistics. Prerequisites: MBA:8190.

MSCI:9130 Seminar in Lean Practices 3 s.h.
Lean principles across the enterprise; real-world applications in manufacturing and service sectors, taught in an interactive approach using hands-on exercises and case studies. Prerequisites: MBA:8190.
MSCI:9135 Strategy Deployment and Lean Enterprise 3 s.h.
How organizations transform themselves into Lean enterprises that maximize customer value through the elimination of waste; focus on how manufacturing and service organizations successfully align their process improvement efforts to strategic goals of the organization (policy deployment); A3 thinking, strategic planning, balanced scorecard, Lean supply chain, employee engagement, and cultural transformation. Prerequisites: MBA:8190.

MSCI:9140 Rapid Continuous Improvement 3 s.h.
Hands-on experience working on rapid continuous improvement (RCI) teams sponsored by industrial affiliates of the business college involved in using RCI. Offered spring break.

MSCI:9160 Supply Chain Analytics 3 s.h.
Application of theory from classroom to real world; classroom learning from MSCI:9180 used to work on a company-sponsored Six Sigma style project to complete requirements for Six Sigma Green Belt certification. Prerequisites: MSCI:9180.

MSCI:9180 Statistical Methods for Process Improvement 3 s.h.
Strategies to improve quality of products, effectiveness of processes; managerial issues, statistical methods, quality, customer needs, customer satisfaction, quality measures and standards; understanding and reducing variability; builds on MBA:8150; data-based management, statistical process control, control charts, capability indexes, design of experiments. Prerequisites: MBA:8150.

MSCI:9185 Project Management 2-3 s.h.
Preparation for managing projects and project portfolios; project selection, project planning and budgeting, scheduling, resource allocation, project control; integration of project planning tools, including project management software.

MSCI:9200 Business Programming 3 s.h.
Introduction to algorithms, data structures, and object-oriented programming constructs to solve business problems. Corequisites: MSCI:3005.

MSCI:9210 Introduction to Modeling with VBA 2-3 s.h.
Introduction to programming Visual Basic for Applications in Excel; case studies in finance, marketing, operations, accounting.

MSCI:9220 Introduction to Information Systems 3 s.h.
Effective ways for business firms to harness the power of information technology for strategic purposes; conventional and emerging architectures of information systems; integrated perspective on structural relationships among IT components; emphasis on case studies.

MSCI:9230 Database Systems 3 s.h.
Theories and methodologies for semantic, logical, and physical database design; entity/relationship diagrams and their mapping to database schemas; normalization; languages for relational database systems, including relational algebra, Structured Query Language, query by example; query optimization and index selection; database and view creation, query and update processing; form and report design; practice with commercial DBMS products; integrity, security, concurrency control, transaction recovery.
Marketing

Chair
• Catherine A. Cole

Undergraduate major: marketing (B.B.A.)
Graduate degree: marketing subprogram for the Ph.D. in business administration
Faculty: http://tippie.uiowa.edu/marketing/faculty.cfm
Web site: http://tippie.uiowa.edu/marketing/

The Department of Marketing offers programs that follow business trends and lead business practice.

Undergraduate Program of Study
• Major in marketing (Bachelor of Business Administration)

Bachelor of Business Administration

The Bachelor of Business Administration with a major in marketing requires a minimum of 120 s.h., including 20 s.h. of work for the major. The program is designed to provide undergraduate students with an understanding of the business, social, and economic roles of marketing and to prepare them for marketing careers.

Several decades ago, the study of marketing dealt almost exclusively with business activities involved in the flow of goods from production to consumption. Today it includes principles that are more widely applicable; they are as relevant to the success of arts, sports, and social programs as they are to firms selling goods and services. A major in marketing includes study in the behavioral sciences, communications, statistical analysis, and computer methods as well as marketing decision making.

Graduates find employment opportunities as market analysts, merchandise managers, buyers, purchasing agents, advertising managers, brand managers, and sales representatives in a variety of for-profit and nonprofit organizations.

The major in marketing requires the following course work. For B.B.A. common requirements, see Bachelor of Business Administration (p. 654) in the Catalog.

All of these:

MKTG:3050 Professional Preparation in Marketing 2 s.h.
MKTG:3100 Marketing Research 3 s.h.
MKTG:3200 Consumer Behavior 3 s.h.
MKTG:4500 Marketing Management (must be taken in senior year) 3 s.h.

Three of these:

MKTG:3300 Web Business Strategy 3 s.h.
MKTG:3400 Retail Strategies 3 s.h.
MKTG:3500 Direct Marketing Strategies 3 s.h.
MKTG:3701 Marketing Institute Field Studies 2 s.h.
MKTG:4000 Contemporary Topics in Marketing (counts once toward the major) 3 s.h.
MKTG:4100 Advertising Theory 3 s.h.
MKTG:4200 Sales Management 3 s.h.
MKTG:4250 Marketing and Sustainability 3 s.h.

MKTG:4275 Social Media Marketing 3 s.h.
MKTG:4300 International Marketing 3 s.h.
MKTG:4800 Field Studies in Marketing 3 s.h.

Iowa Degree in Three

University of Iowa majors who are strongly motivated can graduate with a degree in three years under the Iowa Degree in Three. The program is available to students who can complete more semester hours each term than they would on the Four-Year Graduation Plan.

Students sign an agreement during their first semester of enrollment; meet with an advisor at least once a semester to review their plans and progress; take courses during summer sessions, if necessary; meet specific course checkpoints; and maintain the grade-point average required for the major.

Students are allowed to bring Advanced Placement (AP), College Level Examination Program (CLEP), or transfer credit upon admission to reduce the number of semester hours required for their degree. They should consult their advisor about the program.

Graduate Program of Study
• Marketing subprogram for the Doctor of Philosophy in business administration

In addition to offering a marketing program for the Ph.D. in business administration, the department participates in the M.B.A. program, which is offered by the Tippie School of Management; see Master of Business Administration Program (p. 696) in the Catalog.

Doctor of Philosophy

Graduate students in marketing may earn a Doctor of Philosophy in business administration. For a description of the Ph.D. program and requirements, see Doctor of Philosophy (p. 663) in the Catalog and visit the Department of Marketing web site.

Applicants must meet the admission requirements of the Graduate College; see Manual of Rules and Regulations of the Graduate College.

Courses

Lower-Level Undergraduate

MKTG:1300 First-Year Seminar 1 s.h.
Small discussion class taught by a faculty member; topics chosen by instructor; may include outside activities (e.g., films, lectures, performances, readings, visits to research facilities).

Upper-Level Undergraduate and Graduate

MKTG:3000 Introduction to Marketing Strategy 3 s.h.
Philosophy and activities of marketing; marketing environment of an organization; strategies with respect to marketing decisions, buyer behavior; spreadsheet analysis of marketing problems. Prerequisites: ECON:1100. Requirements: junior standing.
MKTG:3050 Professional Preparation in Marketing
Overview of marketing careers; how marketing strategies are developed, evaluated, and implemented; how research on buyer behavior is used in marketing decisions; identification of research methodologies, analytical tools, and technologies for addressing marketing problems; marketing's relationship to other business and organizational functions and to the external environment. Prerequisites: MKTG:3000.

MKTG:3100 Marketing Research
Marketing, research methods; role of marketing research information as a tool in management decision making. Prerequisites: ECON:2800 and MKTG:3000.

MKTG:3200 Consumer Behavior
Behavioral and social aspects of marketing; research methods and findings from behavioral sciences, their relation to production, consumption, and marketing of products, services. Prerequisites: MKTG:3000.

MKTG:3300 Web Business Strategy
Introduction to World Wide Web business and marketing; concepts, methods, and applications associated with doing business on the web; web page construction and design; case studies and/or entrepreneurial projects. Prerequisites: MKTG:3000.

MKTG:3400 Retail Strategies
Strategies for retail site selection, store design, supply chain management, customer relationship management/customer service; merchandising management strategies for planning merchandise assortments, buying systems, buying merchandise, pricing, promotion. Prerequisites: MKTG:3000.

MKTG:3500 Direct Marketing Strategies
Principles and processes of direct and database marketing; insight into the requirements for building a customer-based marketing strategy. Prerequisites: MKTG:3000.

MKTG:3700 Marketing Institute Seminar I
Soft skills and professional expertise to succeed in marketing and consulting careers; resume and interview training, industry presentations, business case assignments, lectures. Prerequisites: MKTG:3000. Requirements: admission to the Marketing Institute.

MKTG:3701 Marketing Institute Field Studies
Plan, design, carry out, and report on a marketing research project for a profit or nonprofit client organization; communicate with managers, apply knowledge of marketing research, meet deadlines, and convert research findings into actionable recommendations for management. Prerequisites: MKTG:3000 and MKTG:3700. Requirements: admission to the Marketing Institute.

MKTG:3702 Marketing Institute Seminar II
Development of soft skills and professional expertise to succeed in marketing and consulting careers; resume and interview training, industry presentations, business case assignments, lectures; mentor students in marketing institute seminar. Prerequisites: MKTG:3000 and MKTG:3700 and MKTG:3701. Requirements: admission to the Marketing Institute.

MKTG:4000 Contemporary Topics in Marketing
Topics not regularly offered in other courses. Prerequisites: MKTG:3000.

MKTG:4050 Directed Readings in Marketing
arr.

MKTG:4100 Advertising Theory
Advertising as a promotional force; emphasis on theory, planning, resulting strategic and tactical decisions made by advertising executives. Prerequisites: MKTG:3000.

MKTG:4200 Sales Management
Personal selling, management of sales force; emphasis on recruitment, selection, training of sales representatives; problems in allocation of sales effort, supervision, control. Prerequisites: MKTG:3000.

MKTG:4250 Marketing and Sustainability
Concepts for developing and implementing sustainable marketing strategies; developing more environmentally friendly products, more sustainable logistical systems, socially responsible pricing, and promoting sustainable products in a socially responsible way. Prerequisites: MKTG:3000.

MKTG:4275 Social Media Marketing
Fundamentals of social media in a marketing context; establishing clear organizational goals, developing appropriate marketing strategies, and determining key campaign logistics (who, when, where); guest speakers and hands-on projects involving social media. Prerequisites: MKTG:3000.

MKTG:4300 International Marketing
Differences in global environment: how cultural considerations, political, legal, and economic conditions affect market entry strategies and marketing mix decisions; development of marketing plan for non-U.S. environments. Prerequisites: MKTG:3000.

MKTG:4475 Marketing and Sustainability
Concepts for developing and implementing sustainable marketing strategies; developing more environmentally friendly products, more sustainable logistical systems, socially responsible pricing, and promoting sustainable products in a socially responsible way. Prerequisites: MKTG:3000.

MKTG:4500 Marketing Management
Marketing problems of organizations; emphasis on marketing manager's role in developing, presenting goal-oriented marketing strategies; application of marketing concepts to real business situations. Prerequisites: MKTG:3000 and MKTG:3100 and MKTG:3200. Requirements: completion of 90 s.h. and one additional marketing elective, not including MKTG:3050.
MKTG:4800 Field Studies in Marketing 3 s.h.
Experience in planning, designing, carrying out, reporting on a marketing research project for a profit or nonprofit client organization; communication with managers, application of marketing research, meeting deadlines, converting research findings into action recommendations for management. Prerequisites: MKTG:3000 and MKTG:3100.

MKTG:4900 Academic Internship arr.
Professional internship experience with associated academic content.

MKTG:4999 Honors Thesis in Marketing 3 s.h.
Independent student project directed by faculty or staff advisor; culminates in thesis that conforms to University Honors Program guidelines; may include empirical research, library research, applied projects. Prerequisites: BUS:3999 or ECON:3999. Requirements: admission to the Tippie College of Business honors program.

Graduate

MKTG:7800 Seminar in Consumer Behavior-Ph.D. 3 s.h.
Key facets of consumer behavior—information processing, perception, memory, learning, attitude formation, attitude change, decision making, emotion; behavioral research methods.

MKTG:7850 Seminar in Marketing Models-Ph.D. 3 s.h.
Theoretical, operational models in marketing, with emphasis on recent advances; in-depth criticism of models, participation in model development project.

MKTG:7900 Seminar in Research Topics-Ph.D. arr.
Individual research topics.

MKTG:7950 Directed Readings in Marketing-Ph.D. arr.

MKTG:7975 Thesis in Marketing arr.

MKTG:9000 Directed Readings in Marketing arr.

MKTG:9010 Contemporary Topics in Marketing 1-3 s.h.
Topics not regularly offered in other courses. Prerequisites: MBA:8110.

MKTG:9015 Social Media Marketing for Business 3 s.h.
Fundamentals of social media marketing; establishing clear organizational goals for engaging in social media to market a product or service, developing solid strategies for implementation, and determining other key campaign logistics. Prerequisites: MBA:8110.

MKTG:9030 Buyer Behavior 3 s.h.
Behavior of consumers and industrial buyers; research methods and findings from behavioral sciences applied to production, consumption, and marketing of products and services; application of consumer behavior concepts to managerial decision making. Prerequisites: MBA:8110.

MKTG:9110 Category Management 3 s.h.
Marketing strategy related to manufacturing product line interactions, retailer product assortment, consumer response; category definition, product line pricing and branding, cross-category promotions, channel coordination, efficient consumer response, loyalty programs, database marketing. Prerequisites: MBA:8110.

MKTG:9120 Customer Relationship Management 3 s.h.
Analytical approaches to customer relationship management; issues, techniques and terminology associated with database marketing and data mining; analysis of customer databases; assessing lifetime valuation (LTV) of customers, identifying "high potential" customers, estimating return on marketing investment, building predictive models to estimate the probability of response to a marketing campaign. Prerequisites: MBA:8110.

MKTG:9130 Product Management 3 s.h.
Techniques of new product development; idea generation, concept screening, product design, market testing, forecasting, brand management strategies within the firm. Prerequisites: MBA:8110 and MBA:8150.

MKTG:9150 Brand Management 3 s.h.
Strategies for building, leveraging, and defending brands; principles of consumer behavior, how they relate to building brand identity and equity; branding of consumer goods and services. Prerequisites: MBA:8110.

MKTG:9160 Service Marketing 3 s.h.
Production, consumption, and marketing of services; solutions to problems faced by service managers; development of an organizational marketing system for delivery of quality service. Prerequisites: MBA:8110.

MKTG:9165 Digital Marketing Strategies and Analytics 3 s.h.
Comprehensive look at how companies use digital marketing and analytics to create value for their customers; overview of current analytic tools and technologies used in digital marketing; introduction to JMP, state-of-the-art and visually stunning software; strategic applications of marketing analytics; applications using cases from B2C, B2B, and services marketing contexts. Prerequisites: MBA:8110.

MKTG:9170 Business to Business Marketing 3 s.h.
Industrial buyer behavior, buyer-seller relationships, interactive product policy and market segmentation, distribution and selling systems; skill development in market strategy formulation for industrial products and services, and in solving problems and making decisions about industrial marketing. Prerequisites: MBA:8110.
MKTG:9190 International Marketing 3 s.h.
Domestic versus international perspective; identification and evaluation of opportunities and risks in non-U.S. markets; research problems in global markets; effects of international organizations, foreign exchange, macroeconomic policies, local law, and cultural differences on consumer behavior and marketing decisions; multinational versus global marketing strategies (entry, product adaptation, channel logistics, pricing, promotion); emphasis on practical applications. Prerequisites: MBA:8110.

MKTG:9200 Field Studies in Marketing 3 s.h.
Experience in planning, designing, carrying out, reporting on a marketing research project for a profit or nonprofit client organization; communication with managers, application of marketing research, meeting deadlines, converting research findings into action recommendations for management. Prerequisites: MBA:8110 and MBA:8150.

MKTG:9300 Applied Marketing Research 3 s.h.
Research design, survey design, sampling, data analysis, qualitative research methods, research project management. Prerequisites: MBA:8110 and MBA:8150.

MKTG:9310 Marketing Analytics 3 s.h.
Quantitative tools to support marketing planning decisions, including forecasting, elasticity analysis, conjoint analysis, and customer LTV; analysis of syndicated data.

MKTG:9320 Strategic Brand Positioning 3 s.h.
Define market boundaries; use customer and competitor analyses to create sustainable market positions; create and manage brand identities; brand architecture, brand equity measurement. Prerequisites: MBA:8110.

MKTG:9330 Product and Pricing Decisions 2 s.h.
Create and capture value through product and service design, including stage-gate evaluation models; implement pricing strategy for new products and existing product lines. Prerequisites: MBA:8110.

MKTG:9340 Customer Analysis 2-3 s.h.
Use customer insights to support successful marketing programs; organizational, individual, and joint decision making; post sale satisfaction behaviors.

MKTG:9350 Marketing Communication and Promotions 3 s.h.
Develop effective communication programs for business and consumer markets; manage agency relationships; integrate media/vehicle platforms; track and evaluate investments in communications and promotions. Prerequisites: MBA:8110.

MKTG:9360 Category Management 3 s.h.
Manufacturer-retailer relationships, product line planning, efficient consumer response, cross-category marketing strategies, competition between national brands and store labels, retailer positioning, customer loyalty.
Master of Business Administration Program

Associate dean
- David W. Frasier

Assistant deans
- David Deyak, Colleen Downie, Dawn Kluber

Professional degree: M.B.A.
Professional minors: finance; marketing management; strategic management of innovation; supply chain and analytics
Faculty: http://tippie.uiowa.edu/people/azfaculty.cfm
Web site: http://tippie.uiowa.edu/mba/

The Henry B. Tippie School of Management offers a Master of Business Administration (M.B.A.) program that provides students with a foundation for future growth and flexibility in professional management. The program, which is fully accredited by AACSB International—the Association to Advance Collegiate Schools of Business, enables students to build broad-based professional portfolios of analytical skills, knowledge, leadership, and applied experiences. The curriculum is rigorous, yet learning takes place in a collaborative environment that builds teamwork skills and encourages independent problem solving.

Students in Tippie M.B.A. programs come from every region of the United States and from countries worldwide. They represent a variety of backgrounds, undergraduate majors, and professional experience. The curriculum is designed for college graduates in any field; previous business course work is not required. However, full-time work experience is typically required for admission. Contact the Tippie School of Management for a brochure listing complete program requirements.

The Departments of Accounting, Economics, Finance, Management and Organizations, Management Sciences, and Marketing all contribute to the Master of Business Administration program through faculty participation and course work.

Professional Programs of Study
- Master of Business Administration
- Minor in finance
- Minor in marketing
- Minor in strategic management of innovation
- Minor in supply chain and analytics

The Tippie School of Management offers several M.B.A. programs: full-time M.B.A., M.B.A. for professionals and managers, an executive M.B.A., M.B.A. (in Hong Kong), and the CIMBA Program—M.B.A. (in Italy). Students in the full-time M.B.A. program have the opportunity to enroll in one of several joint degree programs, simultaneously earning an M.B.A. and a graduate or professional degree in law, medicine, or public health; see “Joint M.B.A./Graduate and Professional Degrees” below.

Full-time M.B.A.

The full-time M.B.A. program requires 60 s.h. of graduate credit, including 31 s.h. of required courses and 29 s.h. of career academy and elective course work.

Students complete business foundation (core) courses during their first semester in the program (fall) and advanced core courses, career academy courses, and electives in the remaining three semesters. M.B.A. students must complete MBA:8100 Business Acumen and Career Development, a core course that provides training and experience in and outside the classroom in career advancement, functional development, and professionalism. It also offers skill-building activities for the individual career academies. In addition, students take part in a required Global Learning Opportunity in MBA:8500 Seminar in International Business or an approved alternative in an international location to increase their understanding of the global business environment and its implications for business conduct.

The program’s career academies are the framework through which students become experts in a specific business field. Each career academy provides a unique set of curricular offerings as well as academic and professional experiences that include industry projects, interactions with the business community and with alumni, and skill-building activities designed to increase each student’s marketability. Before the second semester (spring), students choose one of the following career academies and concentration tracks based on their career goals.

- Business Analytics concentration
- Corporate Finance concentration
- Finance — Investment Management concentration
- Marketing Management — Managing Customers, Products, and Brands concentration
- Strategic Innovation Career Academy (two concentration tracks: strategic management of innovation concentration; supply chain and analytics; only available to students who graduate on or before May 2016)

The full-time M.B.A. program’s study plan is as follows.

First Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MBA:8100</td>
<td>Business Acumen and Career</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>MBA:8110</td>
<td>Marketing Management</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>MBA:8120</td>
<td>Management in Organizations</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>MBA:8140</td>
<td>Corporate Financial Reporting</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>MBA:8150</td>
<td>Business Analytics</td>
<td>2 s.h.</td>
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<tr>
<td>MBA:8180</td>
<td>Managerial Finance</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>MBA:8190</td>
<td>Operations Management</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>MBA:8300</td>
<td>Strategic Management and Policy</td>
<td>2 s.h.</td>
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</tbody>
</table>

Second Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MBA:8100</td>
<td>Business Acumen and Career</td>
<td>1 s.h.</td>
</tr>
<tr>
<td>MBA:8160</td>
<td>Managerial Economics</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>MBA:8200</td>
<td>Strategic Business Consulting</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>MBA:8220</td>
<td>Ethics and the Law</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>Academy courses/electives</td>
<td></td>
<td>8 s.h.</td>
</tr>
</tbody>
</table>

Third Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MBA:8100</td>
<td>Business Acumen and Career</td>
<td>1 s.h.</td>
</tr>
<tr>
<td>MBA:8500</td>
<td>Seminar in International Business</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>Academy courses/elective</td>
<td></td>
<td>11 s.h.</td>
</tr>
</tbody>
</table>
Fourth Semester
MBA:8100 Business Acumen and Career Development 1 s.h.
MBA:8310 Business Integration 2 s.h.
Academy course/elective 10 s.h.

Admission
Applicants to the M.B.A. program must submit a complete application file, including the following:

- a completed Tippie School of Management application form and fee;
- official transcripts of all undergraduate and graduate course work, which must be submitted to the Office of Admissions by each institution attended;
- official scores on the Graduate Management Admission Test (GMAT) or Graduate Record Examination (GRE) General Test;
- the completed supplemental application form with essay responses, a résumé, and a cover letter; and
- the names of three people who can provide recommendations.

Applicants whose first language is not English must score at least 100 (Internet-based) on the Test of English as a Foreign Language (TOEFL). In place of TOEFL, the program accepts International English Testing System (IELTS) scores. For information about registering for TOEFL or IELTS and reporting scores to the University, visit English Requirements for MBA Admission on the Office of Admissions web site.

The full-time M.B.A. program admits students only for fall entry. Application deadlines are as follows:

- International applicants: April 15
- U.S. citizens and permanent residents (priority deadline): April 15
- U.S. citizens and permanent residents: July 30

Applications received after April 15 are considered on a space-available basis.

Accelerated Professional Track
Highly qualified undergraduate students in the University of Iowa College of Liberal Arts and Sciences, the College of Engineering, or the Tippie College of Business may be admitted to the full-time M.B.A. program's Accelerated Professional Track (APT). These students begin taking M.B.A. core courses as electives during their undergraduate programs; this permits them to earn a bachelor's degree and an M.B.A. more quickly than they would if they pursued each degree separately. APT students must complete an internship in the program.

To enter the APT program, students must complete 90 s.h. of undergraduate work, have a g.p.a. of at least 3.50, have clearly defined career goals, and indicate their intent to pursue both degree programs on a full-time basis. Students also must have a professional background similar to that of students enrolled in the M.B.A. program.

Joint M.B.A./Graduate and Professional Degrees
Joint degree programs allow students to pursue two degrees simultaneously, earning both more quickly than they would if they pursued each degree separately. The Tippie School of Management collaborates with several other University of Iowa academic units to offer joint professional or graduate degrees: an M.B.A./J.D. with the College of Law (p. 969); an M.B.A./M.D. or an M.B.A./M.D. post-doctoral degree with the Carver College of Medicine (p. 1005); and an M.B.A./M.H.A. with the College of Public Health (p. 1143).

Separate application to each degree program is required. Applicants must be admitted to both programs before they may be admitted to the joint degree program.

M.B.A. for Professionals and Managers
The M.B.A. for Professionals and Managers (M.B.A.-PM) program requires 45 s.h. of graduate credit. The program is tailored for working professionals building on the synergies of concurrent work and learning. It prepares graduates to be effective managers and leaders in the global marketplace. The curriculum is designed for students with varied backgrounds, undergraduate majors, and professional experience. Previous course work in business is not required.

Courses are offered each semester during evening hours or weekends at three locations in Iowa: in Cedar Rapids at the Tippie College of Business Cedar Rapids Center, in Des Moines at the John and Mary Pappajohn Education Center (JMPEC), and in the Quad Cities at the Palmer College of Chiropractic; see Program Locations on the school's web site. M.B.A.-PM students also may enroll in full-time M.B.A. courses in Iowa City when space is available.

The M.B.A.-PM program requirements include a business core of nine courses plus six business electives. The core develops competency in general management skills and key functional business areas. The electives contribute to the development of an area of expertise and foster a deeper understanding of management and business practices. Electives are offered in marketing, finance, leadership and management, and entrepreneurship, with a smaller number offered in analytics, management information systems, and operations. Students may take part in several Global Learning Opportunities in international locations to increase their understanding of the global business environment and its implications for business conduct and decision making.

Students can earn the degree in as few as two and a half years, but they may have up to 10 years to complete it. Most students earn the M.B.A. in about three years, taking two courses each fall and each spring semester and one course during the summer. Course sequencing is flexible. A sample study plan follows.

FIRST YEAR

MBA:8110 Marketing Management 3 s.h.
MBA:8120 Management in Organizations 3 s.h.
MBA:8140 Corporate Financial Reporting 3 s.h.
MBA:8150 Business Analytics 3 s.h.
Business elective 3 s.h.
Admission

The M.B.A.-PM program admits students for summer, fall, or spring entry; applications are accepted throughout the year. Admission decisions are based on completed application materials, including quality of work experience, undergraduate grade-point average, scores on the Graduate Management Admission Test (GMAT) or Graduate Record Examination (GRE) General Test, and recommendations. Applicants should have at least one and one-half years of postbaccalaureate professional work experience before admission.

Applicants whose first language is not English must score at least 100 (Internet-based) on the Test of English as a Foreign Language (TOEFL) or must have a successful admission interview. In place of TOEFL, the program accepts International English Testing System (IELTS) scores. For information about registering for TOEFL or IELTS and reporting scores to the University, visit English Requirements for MBA Admission on the Office of Admissions web site.

Admission decisions are made before registration begins for completed applications received by the priority application deadline. Admitted applicants who have met the priority application deadline may request registration for classes on the first registration date. The University will hold priority registration from May 1 to July 30 for the fall semester (August); from March 1 to May 1 for the spring semester (January); and from October 1 to December 30 for the summer session (May).

Enrollment in Courses Before Formal Admission

Individuals who have not yet been admitted to the program may request pre-M.B.A. status by submitting their résumé and transcript to the Tippie School of Management for approval; they should have at least one and one-half years of postbaccalaureate professional work experience. Those granted special pre-M.B.A. status may enroll in a maximum of three M.B.A.-PM courses over 12 months, with a maximum of two courses during each 10 or 12-week session and one course during shorter sessions.

Students must take one of the following courses as their first course in pre-M.B.A. status.

**SECOND YEAR**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MBA:8160</td>
<td>Managerial Economics</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>MBA:8180</td>
<td>Managerial Finance</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>MBA:8190</td>
<td>Operations Management</td>
<td>3 s.h.</td>
</tr>
<tr>
<td></td>
<td>Two business electives</td>
<td>6 s.h.</td>
</tr>
</tbody>
</table>

**THIRD YEAR**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MBA:8210</td>
<td>Global Business Strategy</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>MBA:8300</td>
<td>Strategic Management and Policy</td>
<td>3 s.h.</td>
</tr>
<tr>
<td></td>
<td>Three business electives</td>
<td>9 s.h.</td>
</tr>
</tbody>
</table>

Credit earned during pre-M.B.A. status is applied to the degree once the applicant is admitted to the program.

**M.B.A. Executive Program**

The M.B.A. Executive Program requires 51 s.h. of graduate credit. The executive program is conducted at the Pomerantz Center on the University’s Iowa City campus and at the Pappajohn Education Center in Des Moines, Iowa. The Executive Engineer Dual Master’s Degree program is offered periodically, typically at an off-campus site. See Program Locations on the school’s web site.

Course work for the M.B.A. Executive Program is presented over 21-24 months. The program begins in mid-August (Iowa City) or in mid-January (Des Moines) with a five-day residency. It continues with classes one day each week on alternating Fridays and Saturdays (Iowa City) or on Friday and Saturday every other week (Des Moines). A second five-day residency is held at the beginning of the second year. Students have a four-week winter break and summers off.

Each entering class progresses through the program as a group. The curriculum includes 16 core courses, an international business seminar (10-11 days during spring of the second year), and work in small study groups throughout the program.

Admission is limited to experienced managers and executives who want to broaden their management skills without interrupting their professional careers. Applicants typically have seven or more years of postgraduate managerial experience. Previous academic work in business is not required.

The M.B.A. Executive Program requires the following course work.

**FIRST YEAR**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MBA:8110</td>
<td>Marketing Management</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>MBA:8120</td>
<td>Management in Organizations</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>MBA:8140</td>
<td>Corporate Financial Reporting</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>MBA:8150</td>
<td>Business Analytics</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>MBA:8160</td>
<td>Managerial Economics</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>MBA:8170</td>
<td>International Economic</td>
<td>3 s.h.</td>
</tr>
<tr>
<td></td>
<td>Environment of the Firm</td>
<td></td>
</tr>
<tr>
<td>MBA:8180</td>
<td>Managerial Finance</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>MBA:8330</td>
<td>Seminar in Strategic Management I</td>
<td>1 s.h.</td>
</tr>
<tr>
<td>MGMT:9270</td>
<td>Human Resource Management</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

**SECOND YEAR**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MBA:8190</td>
<td>Operations Management</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>MBA:8300</td>
<td>Strategic Management and Policy</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>MBA:8340</td>
<td>Seminar in Strategic Management II</td>
<td>1 s.h.</td>
</tr>
</tbody>
</table>
MBA:8500 Seminar in International Business 1 s.h.
ACCT:9020 Strategic Cost Analysis 3 s.h.
ACCT:9040 Financial Information and Capital Markets 3 s.h.
FIN:9300 Corporate Investment and Financing Decisions 3 s.h.
MGMT:9110 Dynamics of Negotiations 3 s.h.
MGMT:9130 Strategic Management of Change 3 s.h.
MGMT:9210 Law and Ethics 3 s.h.

**M.B.A. in Hong Kong**

The M.B.A. program in Hong Kong ("Hong Kong M.B.A.") requires 45 s.h. of graduate credit. The curriculum is designed for students with various backgrounds, experience, and academic majors who are living in or near Hong Kong or Taiwan. The program does not require previous course work in business.

Students complete the required courses in sequence; most complete the program in 16-20 months. Each course begins with two weeks of online course work followed by two consecutive weekends of classes in Hong Kong and an additional two weeks of online course work. Faculty from the University of Iowa travel to Hong Kong to teach the weekend classes. Some courses offer a video conference option for students living in Taiwan. Students also have the opportunity to study on campus in Iowa City for up to one semester.

Students are admitted to the program year-round. Admission decisions are based on a completed application, which includes a résumé, academic qualifications, an essay, letters of recommendation, and interview. Applicants must have at least three years of professional-level work experience.

The M.B.A. program in Hong Kong requires the following course work.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MBA:8110</td>
<td>Marketing Management</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>MBA:8120</td>
<td>Management in Organizations</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>MBA:8140</td>
<td>Corporate Financial Reporting</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>MBA:8150</td>
<td>Business Analytics</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>MBA:8160</td>
<td>Managerial Economics</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>MBA:8170</td>
<td>International Economic Environment</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>MBA:8180</td>
<td>Managerial Finance</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>MBA:8190</td>
<td>Operations Management</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>MBA:8300</td>
<td>Strategic Management and Policy</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ACCT:9020</td>
<td>Strategic Cost Analysis</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ENTR:9100</td>
<td>Entrepreneurship and Innovation</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>FIN:9300</td>
<td>Corporate Investment and Financing</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>MGMT:7850</td>
<td>Seminar in Management</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>MGMT:9120</td>
<td>Leadership and Personal Development</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>MSCI:9110</td>
<td>Advanced Analytics</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>MSCI:9120</td>
<td>Supply Chain Management</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>MSCI:9220</td>
<td>Introduction to Information Systems</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>Electives</td>
<td></td>
<td>3-9 s.h.</td>
</tr>
</tbody>
</table>

**Minor: Finance**

A student pursuing the minor in finance must be enrolled in the full-time M.B.A. program.

The minor in finance requires a minimum of 6 s.h. chosen from the following.

At least one of these:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>FIN:9200</td>
<td>Portfolio Management</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>FIN:9300</td>
<td>Corporate Investment and Financing</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

At least one of these:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>FIN:9150</td>
<td>Financial Modeling and Firm Valuation</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>FIN:9210</td>
<td>Derivatives</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>FIN:9220</td>
<td>Fixed Income Securities</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>FIN:9230</td>
<td>Real Estate Finance and Investments</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>FIN:9240</td>
<td>International Finance</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>FIN:9280</td>
<td>Structured Finance-Securitization</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>FIN:9290</td>
<td>Alternative Investments and Portfolio Strategies</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>FIN:9310</td>
<td>Corporate Financial Strategy</td>
<td>2 s.h.</td>
</tr>
</tbody>
</table>
FIN:9350 Wealth Management 3 s.h.
FIN:9390 Putting Finance into Practice 3 s.h.

**Minor: Marketing Management**

A student pursuing the minor in marketing management must be enrolled in the full-time M.B.A. program.

The minor requires a minimum of 6 s.h. from the following.

At least 6 s.h. from these:

- MKTG:9300 Applied Marketing Research 3 s.h.
- MKTG:9310 Marketing Analytics 3 s.h.
- MKTG:9320 Strategic Brand Positioning 3 s.h.
- MKTG:9330 Product and Pricing Decisions 2 s.h.
- MKTG:9340 Customer Analysis 2 s.h.
- MKTG:9350 Marketing Communication and Promotions 3 s.h.
- MKTG:9360 Category Management 3 s.h.

**Minor: Strategic Management of Innovation**

A student pursuing the minor in strategic management of innovation must be enrolled in the full-time M.B.A. program.

The minor requires a minimum of 6 s.h. from the following.

- Three electives from the Business Analytics Career Academy (consult advisor) 6 s.h.

**Minor: Supply Chain and Analytics**

A student pursuing the minor in supply chain and analytics must be enrolled in the full-time M.B.A. program.

The minor requires a minimum of 6 s.h. from the following.

- MSCI:9110 Advanced Analytics 2 s.h.
- MSCI:9120 Supply Chain Management 3 s.h.
- MSCI:9140 Rapid Continuous Improvement 3 s.h.
- MSCI:9230 Database Systems 3 s.h.
- A data science course (consult advisor) 2 s.h.
- A data programming with R course (consult advisor) 2 s.h.

**Courses**

See course lists in the individual Tippie College of Business departmental sections of the Catalog for descriptions of M.B.A. electives.

- **MBA:8000 Directed Readings-M.B.A.** 1-3 s.h.
- **MBA:8010 M.B.A. IMPACT** 0 s.h.
- **MBA:8100 Business Acumen and Career Development** 1-2 s.h.

Career service tools to effectively market self to employers and succeed in chosen career path; communicate personal brand and vision, succeed in job search process, demonstrate professionalism in various business venues, and grow a personal sphere of influence; academy experience to build depth within chosen career field/academic track through course work and outside-of-class academy activities, academic concepts applied to business world, and exposure to relevant information important to student’s major that does not clearly fit into academic course work.

- **MBA:8110 Marketing Management** 2-3 s.h.
- **MBA:8120 Management in Organizations** 2-3 s.h.
- **MBA:8130 Corporate Communications** 2 s.h.
- **MBA:8140 Corporate Financial Reporting** 2-3 s.h.
- **MBA:8150 Business Analytics** 2-3 s.h.
- **MBA:8160 Managerial Economics** 1-3 s.h.
- **MBA:8170 International Economic Environment of the Firm** 2-3 s.h.
MBA:8180 Managerial Finance 2-3 s.h.
Time value of money, applications of present value techniques; stock and bond valuation, capital budgeting, cost of capital calculation, portfolio formation and efficient market analysis, financial statement analysis, pro forma analysis, hedging financial risks. Requirements: MBA:8140 or an undergraduate-level course in financial accounting or finance.

MBA:8190 Operations Management 2-3 s.h.
Planning and decision-making activities for managing an organization's operations; trade-offs associated with operations management decisions, tools and techniques for helping operations managers implement decisions and reach goals; production and service delivery strategy, capacity planning, product and process design, total quality management, demand management, production and service planning, scheduling, materials control, emerging production and service technologies. Prerequisites: MBA:8150.

MBA:8200 Strategic Business Consulting 1-6 s.h.
Plan, schedule, and deliver strategic consulting services to commercial enterprises; project definition, preparation and presentation of deliverables, client relationship management.

MBA:8210 Global Business Strategy 3 s.h.
Strategic frameworks and skills critical for success in the global marketplace; content of an economic environment; cultural, ethical, and legal issues in the conduct of international business; how companies enter foreign markets and grow international subsidiaries; succeed in mergers and acquisitions, cooperate in joint ventures and strategic alliances. Prerequisites: MBA:8120.

MBA:8220 Ethics and the Law 1-2 s.h.
Legal and ethical issues surrounding startup and day-to-day management of a business; contract law, standard business formations, tort law, employment law, business ethics, alternative dispute resolution.

MBA:8230 Introduction to Leadership 1-2 s.h.
Major theories; practical development of leadership and managerial skills to enhance individual and organizational effectiveness.

MBA:8300 Strategic Management and Policy 2-3 s.h.
Firm's competitive strategy from a manager's perspective; key strategic frameworks; integration of concepts learned throughout M.B.A. program, previous work experience. Prerequisites: MBA:8110 and MBA:8140 and MBA:8180 and MBA:8190.

MBA:8309 Consulting Project Leadership 1-2 s.h.
Student Team Leads for the Business Solution Center engage in activities to support the launch of spring consulting projects; initial client interactions, project scope, project planning documents, project arrangement letters, and detailed work plans in consultation with their client and Business Solutions Center leadership; basics of leading a team of student consultants. Prerequisites: MBA:8110 and MBA:8120 and MBA:8140 and MBA:8150 and MBA:8180 and MBA:8190 and MBA:8300. Requirements: full-time M.B.A. standing.

MBA:8310 Business Integration 1-3 s.h.
Student teams run an operational business simulation, conduct organizational/industry analysis, assess market opportunities, define strategic direction, compete for company profitability and market share. Prerequisites: MBA:8110 and MBA:8140 and MBA:8180 and MBA:8190 and MBA:8300.

MBA:8330 Seminar in Strategic Management I 1-3 s.h.
Introduction to strategic management; the role of marketing, operations, and finance in strategic planning; case studies.

MBA:8340 Seminar in Strategic Management II 1-3 s.h.
Strategic management integrating all aspects of business; computer simulation, lectures, case studies, readings.

MBA:8400 M.B.A. Internship 0 s.h.

MBA:8410 Application in Organizational Leadership 0-1 s.h.
Opportunity to develop leadership skills necessary for managing student organizations; class discussion, workshops, guest speakers; for M.B.A. organization treasurers and presidents.

MBA:8420 M.B.A. Case Competition 1-3 s.h.
Students represent Tippie School of Management in a case competition; internal case work, presentation and case analysis training. Requirements: M.B.A. standing.

MBA:8500 Seminar in International Business 0-6 s.h.
Issues and challenges facing organizations doing business in international markets; social, economic, political factors, business policies and customs in the global environment; may include travel, study abroad. Requirements: M.B.A. enrollment.

MBA:8501 M.B.A. Coaches Program 1 s.h.
Development of coaching skills while leading a rigorous peer-to-peer mentoring program with first-year M.B.A. students; improve ability to communicate, motivate, influence, train, and develop others as well as develop high level competency in coaching in critical career development skills, such as business communications, crafting a personal brand pitch, interviewing preparation, and creating and leveraging a network; successful leaders are skilled coaches, so the benefits of this course to both coach and mentee, extend far beyond the classroom experience and time as a Tippie student.

MBA:9120 Introduction to Leadership 1 s.h.
Major theories; practical development of leadership and managerial skills to enhance individual and organizational effectiveness.

MBA:9210 Ethics II 1 s.h.
Organizational influences on ethical behavior.
Risk Management and Insurance

**Director**
- Larry Hershberger

**Associate director**
- Viana Rockel

**Undergraduate certificate**: risk management and insurance

**Faculty**: [http://tippie.uiowa.edu/vaughan/faculty-staff.cfm](http://tippie.uiowa.edu/vaughan/faculty-staff.cfm)

**Web site**: [http://tippie.uiowa.edu/vaughan/](http://tippie.uiowa.edu/vaughan/)

The Department of Finance and the Emmett J. Vaughan Institute of Risk Management and Insurance offer the Certificate in Risk Management and Insurance.

**Undergraduate Program of Study**

- Certificate in Risk Management and Insurance

**Certificate**

The Certificate in Risk Management and Insurance requires 12-24 s.h. of credit: 12 s.h. for B.B.A. students majoring in finance, 18 s.h. for B.B.A. students majoring in business analytics and information systems, and 24 s.h. for all other students. The program is designed to provide an understanding of the many aspects of risk management and insurance (RMI). It concentrates on value creation and asset protection, including pure insurance and risk management, as well as on corporate and financial risk management. It also addresses the financial and economic characteristics of potential exposures to loss that business organizations and individuals face, and the techniques available for hedging the risks and minimizing the costs associated with these exposures.

The certificate provides students in business and other majors—particularly actuarial science, mathematics, or statistics—with a foundation for careers in financial and credit analysis, corporate risk management, risk management consulting, employee benefits management, insurance consulting, insurance brokerage, and underwriting. It also may be of value to students seeking professional designations, such as Chartered Life Underwriter (CLU) and Chartered Property and Casualty Underwriter (CPCU). Students typically find employment as financial analysts, bank compliance officers, stock exchange traders, capital and asset managers, insurance and accounting auditors, actuaries, and personal bankers as well as underwriters, claims adjusters, and insurance producers.

The certificate program is open to students earning an undergraduate degree at the University of Iowa who have reached third-year standing (completion of 60 s.h.) and have a cumulative, prerequisite, and University of Iowa g.p.a. of at least 2.75. To be awarded the certificate, students must complete all certificate requirements.

Completion of the certificate is noted on the student's transcript. A certificate is mailed to students who complete the program. Students should apply to receive the certificate when they submit their Application for Degree.

The Certificate in Risk Management and Insurance requires the following courses. Most of these courses have prerequisites or other registration requirements; students must complete prerequisites and meet registration requirements before they may register for a course. Some courses are offered only in fall or spring semesters; students should plan their course schedules carefully.

**CORE COURSES AND COREQUISITES**

Courses FIN:3000 and FIN:3400 are required for admission to the certificate program and are prerequisites for all other RMI courses. Students may take both courses during the same semester.

All certificate students must complete these (9 s.h.):

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>FIN:3000 Introductory Financial Management</td>
<td>3</td>
</tr>
<tr>
<td>FIN:3400 Principles of Risk Management and Insurance (RMI core)</td>
<td>3</td>
</tr>
<tr>
<td>FIN:4410 Corporate and Financial Risk Management (RMI core)</td>
<td>3</td>
</tr>
</tbody>
</table>

Certificate students earning a B.B.A. with a major in business analytics and information systems also must complete these (additional 6 s.h.):

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>FIN:4450 Risk Modeling</td>
<td>3</td>
</tr>
<tr>
<td>MSCI:3800 Optimization and Simulation Modeling</td>
<td>3</td>
</tr>
</tbody>
</table>

**ELECTIVES: STUDENTS IN BUSINESS ANALYTICS AND INFORMATION SYSTEMS**

B.B.A. students majoring in business analytics and information systems complete one of these (3 s.h.):

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>FIN:4420 Property and Liability Insurance</td>
<td>3</td>
</tr>
<tr>
<td>FIN:4430 Life and Health Insurance</td>
<td>3</td>
</tr>
<tr>
<td>FIN:4440 Employee Benefit Plans</td>
<td>3</td>
</tr>
</tbody>
</table>

**ELECTIVES: STUDENTS IN FINANCE AND OTHER MAJORS**

Students majoring in finance and those earning other majors choose two of these (6 s.h.):

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>FIN:4420 Property and Liability Insurance (offered spring)</td>
<td>3</td>
</tr>
<tr>
<td>FIN:4430 Life and Health Insurance (offered fall)</td>
<td>3</td>
</tr>
<tr>
<td>FIN:4440 Employee Benefit Plans (offered fall)</td>
<td>3</td>
</tr>
<tr>
<td>FIN:4450 Risk Modeling (offered spring)</td>
<td>3</td>
</tr>
</tbody>
</table>

Finance majors also choose three of these noninsurance electives (9 s.h.):

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>FIN:4210 Futures and Options</td>
<td>3</td>
</tr>
<tr>
<td>FIN:4220 Fixed Income Securities</td>
<td>3</td>
</tr>
<tr>
<td>FIN:4230 Real Estate Process</td>
<td>3</td>
</tr>
<tr>
<td>FIN:4240 International Finance</td>
<td>3</td>
</tr>
<tr>
<td>FIN:4250 Applied Equity Valuation</td>
<td>3</td>
</tr>
<tr>
<td>FIN:4320 Commercial Banking</td>
<td>3</td>
</tr>
<tr>
<td>FIN:4340 Wealth Management</td>
<td>3</td>
</tr>
<tr>
<td>MGMT:4100 Dynamics of Negotiations (available after early registration)</td>
<td>3</td>
</tr>
<tr>
<td>MKTG:4200 Sales Management</td>
<td>3</td>
</tr>
<tr>
<td>MSCI:3025 Decision Support Systems</td>
<td>3</td>
</tr>
</tbody>
</table>

Non-finance majors also choose three of these (9 s.h.):

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT:3020 Financial Accounting and Reporting</td>
<td>3</td>
</tr>
</tbody>
</table>
ACCT:3200 Income Measurement and Asset Valuation (accounting majors take this instead of ACCT:3020) 3 s.h.
FIN:3200 Investment Management 3 s.h.
FIN:3300 Corporate Finance 3 s.h.
FIN:4210 Futures and Options 3 s.h.
FIN:4220 Fixed Income Securities 3 s.h.
FIN:4230 Real Estate Process 3 s.h.
FIN:4320 Commercial Banking 3 s.h.
MSCI:3025 Decision Support Systems 3 s.h.

Courses for Noncertificate Students

B.B.A. students majoring in finance may concentrate in risk management and insurance (RMI), or they may supplement their corporate finance and investment courses with one or more RMI courses. Students enrolled in other Tippie College of Business majors and College of Liberal Arts and Sciences students earning majors in statistics (p. 613), actuarial science (p. 613), or mathematics program C (p. 455) may take one or more of the RMI courses to enhance their understanding of financial services and learn about employment opportunities in the industry.

Other University of Iowa students may enroll in RMI courses after early registration if space is available and if they have completed ACCT:2200 Managerial Accounting, ECON:1100 Principles of Microeconomics, ECON:1200 Principles of Macroeconomics, FIN:3000 Introductory Financial Management, and FIN:3400 Principles of Risk Management and Insurance.

Students not admitted to the Tippie College of Business should meet with the associate director of the Emmett J. Vaughan Institute of Risk Management and Insurance for advising before they enroll in RMI courses.

Affiliated Courses

The Department of Finance offers six courses affiliated with the Emmett J. Vaughan Institute of Risk Management and Insurance that are included in the Certificate in Risk Management and Insurance curriculum. See Finance (p. 677) in the Catalog for course descriptions and prerequisites.

FIN:3400 Principles of Risk Management and Insurance 3 s.h.
FIN:4410 Corporate and Financial Risk Management 3 s.h.
FIN:4420 Property and Liability Insurance 3 s.h.
FIN:4430 Life and Health Insurance 3 s.h.
FIN:4440 Employee Benefit Plans 3 s.h.
FIN:4450 Risk Modeling 3 s.h.
College of Dentistry

Dean
• David C. Johnsen

Executive associate dean
• Galen Schneider

Associate dean, education
• Lily Garcia

Associate dean, finance and facilities
• Scott Arneson

Associate dean, patient care
• Michael Kanellis

Associate dean, research
• Brad Amendt

Associate dean, student affairs
• Catherine Solow

Professional degree: D.D.S.
Graduate degrees: M.S.; Ph.D.
Web site: http://www.dentistry.uiowa.edu/

The College of Dentistry is an integral part of the University of Iowa and its health sciences campus. Its mission, which embraces the University's academic values as well as the ethical responsibilities implicit in educating future members of a profession, rests on a foundation representing every aspect of collegiate activity: education of students as general practitioners and specialists; research into all aspects of oral and dental disease and the delivery of health care; and service to the community, the state, and the profession.

Faculty members, D.D.S. students, and dental specialty residents provide oral health care to patients at clinics in the Dental Science Building, the Center for Disabilities and Development, and dentistry clinics at University of Iowa Hospitals and Clinics and Iowa City Veterans Affairs Medical Center. Faculty, staff, and students participate in interdisciplinary research and training activities involving the University's five health science colleges as well as other University colleges and departments.

Dentistry at the University of Iowa began in 1882 as a single department. In 1900 the University underwent general reorganization and the Dental Department became the College of Dentistry. Today the college is Iowa's only provider of dental education and ranks as a leader in dental education nationwide.

The college and its educational programs are accredited by the Commission on Dental Accreditation of the American Dental Association, an independent tripartite commission authorized and recognized by the Commission on Post-Secondary Education.

Programs offered by the college cover the full spectrum of dentistry and closely integrated fields. They include the Doctor of Dental Surgery program (D.D.S.), which prepares general dentists; advanced education programs in all dental specialties, each of which may lead to certification in a dental specialty; several advanced education programs in other areas of dentistry, including the oral science program, which offers M.S. and Ph.D. degrees; post-D.D.S. residency programs in general dentistry and hospital-based dentistry; and a wide variety of continuing education programs for dental and allied professions.

Professional Program of Study (D.D.S.)

The Doctor of Dental Surgery program prepares students to practice general dentistry. It requires a minimum of three years of preprofessional study and four years of study in the College of Dentistry. See Doctor of Dental Surgery (p. 707) for a description of the program's curriculum and information about a joint bachelor's degree/D.D.S., the dentistry licensure examination, student organizations, expenses, admission, financial support, and academic rules and procedures.

Post-D.D.S. and Graduate Programs of Study

Several College of Dentistry departments offer professional certificate programs designed to prepare dentists for clinical specialty practice: Endodontics (p. 710); Operative Dentistry (p. 715); Oral Pathology, Radiology, and Medicine (p. 718); Orthodontics (p. 723); Pediatric Dentistry (p. 725); Periodontics (p. 732); and Prosthodontics (p. 732). Students who complete these programs satisfactorily are awarded a certificate. The Department of Oral and Maxillofacial Surgery (p. 716) offers a four-year residency program that culminates in a certificate. The college also offers the Certificate in Geriatric and Special Needs Dentistry (p. 713).

The College of Dentistry offers a Master of Science and a Doctor of Philosophy in oral science (p. 721). Students earning the Certificate in Endodontics or the Certificate in Prosthodontics may earn an M.S. or a Ph.D. in oral science concurrently with the certificate; those earning the Certificate in Operative Dentistry, Certificate in Oral and Maxillofacial Pathology or Certificate in Oral and Maxillofacial Radiology (Department of Oral Pathology, Radiology, and Medicine), or the Certificate in Periodontics may earn an M.S. in oral science concurrently with the certificate.

In addition, the Department of Orthodontics (p. 723) offers a Master of Science in orthodontics, and the Department of Preventive and Community Dentistry (p. 729) offers a Master of Science in Dental Public Health.

For information about post-D.D.S. and graduate programs of study, see the College of Dentistry department sections of the Catalog.

Faculty

Iowa's dental faculty is predominantly full-time. In addition, more than 100 part-time adjunct faculty members assist with clinical teaching in the D.D.S. and advanced residency programs. Approximately 88 percent of the college's faculty members hold D.D.S. or D.M.D. degrees and 12 percent represent other disciplines.

The vast majority of faculty dentists have advanced education past the D.D.S., generally with master's degrees in specialty areas; about one-fifth hold a Ph.D.

The College of Dentistry is committed to the principle that diversity is essential to a strong educational environment—one that prepares new generations of dentists to provide
high-quality care to patients from many backgrounds. The college’s full-time faculty reflects that commitment.

Facilities
The College of Dentistry is located in the Dental Science Building on the University of Iowa health sciences campus, in proximity to the Roy J. and Lucille A. Carver College of Medicine, College of Nursing, College of Pharmacy, College of Public Health, and University of Iowa Hospitals and Clinics. The Bowen Science Building and the Hardin Library for the Health Sciences also are nearby.

The south wing of the Dental Science Building is devoted to clinical teaching. There are 268 operatories in departmental clinics, student laboratories, clinical research space, and a cafeteria. The three clinical floors of the south wing are being remodeled in a sequenced four-year project that began in summer 2012. The north wing houses the simulation clinic and technique bench teaching laboratory, the electronic classroom, college administrative offices, educational media service, computer support services, the academic Department of Preventive and Community Dentistry, and the research laboratories and faculty offices of the Dows Institute for Dental Research.

A 33,000-square-foot addition that opened in fall 2011 features an ADA-compliant entrance, two floors of patient treatment areas, and one floor of space for students. The clinical spaces include 46 dental operatories in the Geriatric and Special Needs Clinic, the Endodontic Clinic, Faculty General Practice, and the Craniofacial Clinical Research Center. Student areas include a classroom that accommodates 80 people, small-group study rooms, a seminar room, a student lounge, lockers, and showers.

Dental Education and Patient Care
Patient care is integral to dental education. Students and faculty members deliver oral health care in clinics on the health sciences campus and at several off-campus sites, including nursing homes. More than 45,600 people receive oral health care yearly in the college's clinics. Patients from throughout Iowa as well as from western Illinois and northern Missouri account for most of the 167,300 patient visits each year.

Interdisciplinary Centers
Dows Institute for Dental Research
Established in 1976, the Dows Institute for Dental Research occupies the first and fourth floor of the Dental Science Building’s north wing. Laboratories are equipped to support a wide variety of research projects reflecting the complex nature of modern health care needs. Research at the institute is coordinated by the College of Dentistry. Focus areas include oral soft tissue and oral cancer; cariology and microbiology; epidemiology, behavior, health policy, and outcomes; and biomaterials, bone, and tissue engineering. Clinical and translational research is carried out at the Craniofacial Clinical Research Center.

Although research is concentrated in these program areas, one of the unit’s strengths has been the consistent level of interaction and collaboration among individuals and programs across the college and the University.

Craniofacial Clinical Research Center
For more than two decades, the Office of Clinical Research has offered outpatient research support for National Institutes of Health, Food and Drug Administration, and related federally supported research grants. The office's Craniofacial Clinical Research Center conducts protocol-based studies performed by faculty scientists and supported by oral health care industries. It also engages in translational research involving laboratory-to-clinical-research outcomes. The center is allied with the Carver College of Medicine's General Clinical Research Center and the University's Institute for Clinical and Translational Science.

Center for Oral and Maxillofacial Implants
Through integrated research, education, and clinical programs, the Center for Oral and Maxillofacial Implants facilitates the development of implants and their use as a therapeutic modality in dentistry. The center integrates basic and clinical research with technology transfer to the clinical setting, enhancing predoctoral, postgraduate, and continuing education and expanding treatment options available to patients served by the college. The center also provides vital coordination of dental specialties that participate in this treatment modality.

Craniofacial Anomalies Research Center
The role of the Craniofacial Anomalies Research Center is to understand the molecular mechanisms of genes and gene interactions that contribute to craniofacial anomalies and birth defects. These genetic defects arise from inherited and somatic gene mutations due to environmental effects. The center researchers use mouse, ferret and zebrafish models, human genetic material, cell lines, and molecular/biochemistry approaches to understand gene function. With the advent of human genome sequencing and the decreasing costs of genomic analyses, it has become somewhat more efficient to identify genetic defects associated with human genetic defects and diseases. The use of these genetic screening approaches provides invaluable data and resources in the search for new genes involved in human craniofacial development and associated anomalies. The center collaborators reside in the Carver College of Medicine, and the Colleges of Dentistry, Pharmacy, and Public Health.

Courses
Most College of Dentistry courses are offered by the college’s departments and programs. They are listed and described in the corresponding General Catalog sections; see the links under "Index: Academic Programs" on this page. The college also offers the following nondepartmental courses.
DENT:4000 Pre-Dental Academy 0 s.h.
Hands-on experience for undergraduate students interested in dentistry; interaction with faculty, residents, and current students in simulation clinic; didactic sessions; admissions information; changing health care environment, digital dentistry, dental esthetics, introduction to dental specialties, drilling and filling. Offered summer session.

DENT:8100 First-Year Continuing Session arr.

DENT:8118 Foundations for Critical Thinking I 2 s.h.
Problem and case-based small group sessions covering evidence-based dentistry and treatment planning integrating information taught concurrently in dental curriculum.

DENT:8119 Behavioral Science I and Ethics 2 s.h.
Introduction to patient-centered care, interpersonal and professional communication with patient, information exchange, preventive treatment plan formulation in patient encounters, and ethics.

DENT:8200 Second-Year Continuing Session arr.

DENT:8218 Foundations for Critical Thinking II 1 s.h.
Continuation of DENT:8118; evidence-based dentistry, critical thinking and treatment planning sessions; online and small group sessions. Prerequisites: DENT:8118.

DENT:8219 Behavioral Science II and Interprofessional Education 2 s.h.
Continuation of DENT:8119; assessing patient understanding of practices for improving/maintaining oral health; overview of patient challenges to effective communication; application of behavioral science principles in dentistry and behavior theories. Prerequisites: DENT:8119.

DENT:8300 Third-Year Continuing Session arr.

DENT:8319 Behavioral Science III 1 s.h.
Continuation of DENT:8219; standardized patient exercises with chairside feedback and evaluation of communication skills; participation in small group discussions regarding application of communication skills and behavioral science principles in patient encounters.

DENT:8355 Introduction to Geriatric Dentistry 2 s.h.
Biological, psychological, and social aspects of aging; normal aging and disease processes associated with aging; pathological changes that affect oral health treatment of dental diseases and patient management. Requirements: D.D.S. enrollment or completion of dental hygiene program. Same as ASP:8355.

DENT:8368 Applied Dental Pharmacology 2 s.h.
Patients’ medications and their implications for dental treatment; clinical use of medications that dentists may prescribe; guidelines for dental prescribing.

DENT:8370 Application of Critical Thinking 1 s.h.
Continuation of DENT:8219; evidence-based dentistry, critical thinking, treatment planning sessions; online and small group sessions.

DENT:8371 Introduction to Quality Assurance 2 s.h.
Patient management, record writing skills, quality assurance concepts; students coordinate treatment, patient relations, issues of quality assurance for a group of patients; ethical, moral dilemmas in relation to dental practice.

DENT:8400 Fourth-Year Lectures and Clinics arr.

DENT:8485 Clinical Admissions Emergency 1 s.h.
Clinical evaluation, diagnosis, and treatment of patients with dental emergencies; patient assessment and referral to appropriate department for treatment.

DENT:8489 Advanced Topics in Quality Assurance 2 s.h.
Quality assurance from viewpoint of practicing dentist, dental educator, dental epidemiologist, court system; analysis of senior dental practice in relation to quality assurance criteria.

DENT:8500 Dental Student Research Honors Program arr.
Experience in conducting research. Requirements: D.D.S. enrollment and approval of mentor and program director.

DENT:9000 Advanced Clinical Comprehensive Dentistry 0 s.h.
Clinical experience for professional improvement. Requirements: dental degree.

Professional Degree
Doctor of Dental Surgery (p. 707)

Departments and Programs
Endodontics (p. 710)
Family Dentistry (p. 712)
Hospital Dentistry (p. 714)
Operative Dentistry (p. 715)
Oral and Maxillofacial Surgery (p. 716)
Oral Pathology, Radiology, and Medicine (p. 718)
Oral Science (p. 721)
Orthodontics (p. 723)
Pediatric Dentistry (p. 725)
Periodontics (p. 727)
Preventive and Community Dentistry (p. 729)
Prosthodontics (p. 732)

Certificate Programs
Geriatric and Special Needs Dentistry (p. 713)
Doctor of Dental Surgery

**Professional degree:** D.D.S.

**Web site:** http://www.dentistry.uiowa.edu/

**Professional Program of Study**

- **Doctor of Dental Surgery**

  The Doctor of Dental Surgery program prepares students to practice general dentistry. The D.D.S. is a professional degree awarded by the College of Dentistry. Admission requirements include 90 s.h. of undergraduate credit, including specific required courses, completed at an accredited college; see "Admission" below. Students working toward a bachelor's degree in the University of Iowa College of Liberal Arts and Sciences before being admitted to the College of Dentistry may be able to complete their bachelor's degree during their first year in dentistry; see "Joint Bachelor's Degree/D.D.S." below.

**Doctor of Dental Surgery**

The Doctor of Dental Surgery requires a minimum of three years of preprofessional study and four years of study in the College of Dentistry.

Course work during the first and second years in the College of Dentistry integrates the biomedical sciences with preclinical and clinical disciplines. The biomedical sciences include gross anatomy, biochemistry, general histology, microbiology, pathology, pharmacology, and physiology. Students also study topics specific to dentistry, such as principles of occlusion, anesthesia and pain control, operative dentistry, periodontics, prosthodontics, cariology, and preventive dentistry. During the latter part of the first year, students are introduced to their first clinical patient treatment situation.

Second-year dental students continue their study of biomedical sciences, take preclinical courses, have additional patient treatment experiences in restorative and preventive dentistry, and are introduced to aesthetic and implant dentistry.

Third-year dental students rotate through a series of clerkships that expose them to seven clinical disciplines: endodontics, operative dentistry, oral and maxillofacial surgery, oral pathology, pediatric dentistry, periodontics, prosthodontics, and radiology and medicine.

Fourth-year dental students deliver comprehensive dental care in conditions that closely approximate those in private dental practice. They also are exposed to varied community dentistry health programs throughout Iowa and other states that include hospitals, nursing homes, and the Special Care Clinic. They may choose to participate in the Colorado Migrant Worker Program, the Indian Health Service Program, or the Foreign Dental School Exchange Program. The community dentistry programs provide exposure to facets of dentistry usually not observable in an academic setting.

**Biomedical Sciences in the Dental Curriculum**

The following science courses are offered by University of Iowa departments outside the College of Dentistry and are a required part of the D.D.S. curriculum.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACB:8120</td>
<td>Human Gross Anatomy for Dental Students</td>
<td>6 s.h.</td>
</tr>
<tr>
<td>ACB:8121</td>
<td>General Histology for Dental Students</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>BIOC:8101</td>
<td>Biochemistry for Dental Students</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>MICR:8230</td>
<td>Dental Microbiology</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>MPB:8115</td>
<td>Human Physiology for Dental Students</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>PATH:8133</td>
<td>Introduction to Human Pathology for Graduate Students</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>PCOL:8240</td>
<td>Basic Pharmacology for Dental Students</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

Dentistry nondepartmental courses are listed in the College of Dentistry (p. 704) section of the Catalog. Courses offered by the college's departments are listed in each department's General Catalog section.

**Joint Bachelor's Degree/D.D.S.**

The College of Liberal Arts and Sciences (CLAS) allows its students to count 30 s.h. of elective credit earned in any other University of Iowa college toward graduation with a bachelor's degree. Under this policy, CLAS students who enroll in the College of Dentistry before completing their bachelor's degree may be able to complete their degree during their first year in dentistry. Students planning to take advantage of this plan must satisfy the CLAS residence requirement in order to enroll in the College of Dentistry. They also must fulfill all requirements for the bachelor's degree, including the General Education Program (p. 313) requirements and the requirements for a major. Contact the College of Liberal Arts and Sciences for more information.

**Dentistry Licensure Examination**

The State of Iowa accepts clinical examination results from the Central Regional Dental Testing Service and from the Western Regional Examination Board. Examinations are administered at several testing sites located at dental schools in the United States. A separate license application is then filed with the individual state board of dentistry.

For licensure, all states also require the National Boards, conducted by the American Dental Association. Many states, including Iowa, also require a jurisprudence examination.

**Expenses**

The College of Dentistry maintains the Supply-Instrument Management System (SIMS), which provides students with instruments and supplies necessary throughout their dental training. The SIMS usage fee for the D.D.S. is payable in installments over the four-year program.

A fee for expendable laboratory supplies is charged each of the first two years. A $100 breakage fee also must be deposited; the deposit is refundable upon graduation or termination of enrollment.

**Student Organizations**

All dental students are members of the American Student Dental Association through its local chapter. The American Dental Education Association, the American Association of Dental Research (Student Research Group), the American Association of Women Dentists, the American Academy of Pediatric Dentistry Student Chapter, the American...
Society for Geriatric Dentistry, the Student National Dental Association, and the Hispanic Dental Association also have local chapters.

Students who rank in the upper 12 percent of their senior class are eligible for election to Omicron Kappa Upsilon, a national scholastic honorary dental society.

The national dental professional fraternities Delta Sigma Delta and Psi Omega have chapters at Iowa. Both fraternities provide academic and social activities for students and their spouses.

Admission

Applicants must submit a completed AADSAS (Associated American Dental Schools Application Service) application form to the American Dental Education Association (ADEA). The AADSAS application must be completed online at the American Dental Education Association web site (http://www.adea.org).

Applications are accepted beginning June 1 of the year before the year of entry. Completed applications must be on file at ADEA by October 1. Applicants should apply as early as possible. Notifications of acceptance are sent beginning December 1.

Prospective dental students are encouraged to embark on an educational program that leads to a standard bachelor's degree. This ensures that students receive a well-rounded education.

Predental Studies

The basic academic requirement for admission to the College of Dentistry is completion of at least 90 s.h. of academic study at an accredited college. No more than 60 s.h. of credit is accepted from a junior college or two-year institution. The predental program of study should include the following.

English: satisfactory accomplishment in English composition, rhetoric, and speech commensurate with the academic requirements for a bachelor's degree at the college attended.

Physics: one year (equivalent to 8 s.h.), of which one-fourth must be laboratory work.

Chemistry: two years (equivalent to 16 s.h.), of which one year (equivalent to 8 s.h.) must be in organic chemistry; one-fourth of each year's study must be laboratory work.

Biochemistry: one semester (equivalent to 3 s.h.).

Biological science: one year (equivalent to 8 s.h.), which must include appropriate laboratory work; the requirement may be satisfied by a one-year course in principles of biology, with instruction in cell biology, metabolism, organismic biology, animal biology, genetics, development, ecology, and evolution. Preference is given to applicants who have completed more than 8 s.h. Courses in human anatomy and cell physiology are strongly recommended.

Gross anatomy: highly recommended.

Electives: sufficient course work in the social sciences, philosophy, psychology, history, foreign languages, business, and mathematics to provide a well-rounded educational background.

Grade-Point Average Requirement

Applicants should have a cumulative g.p.a. of at least 3.25 on a 4.00 scale; a g.p.a. above 3.50 is preferred. The admissions committee gives special consideration to the quality of applicants' course work in the predental sciences, in addition to the cumulative grade-point average.

Interviews

Personal interviews are required of applicants for admission to the College of Dentistry. Applicants are contacted to arrange an interview, after a complete AADSAS application is received by the admissions office.

Required Dental Admission Test

All applicants must complete the Dental Admission Test (DAT) sponsored by the Council on Dental Education of the American Dental Association. A computerized DAT is available throughout the year at designated Prometric Centers.

Applicants should take the test by August 1, one year before entering dental school. Test application forms are available online or by mail from the American Dental Association, 211 East Chicago Avenue, Chicago, IL 60611.

Deposit by Accepted Applicants

Applicants accepted before February 1 are required to submit a $500 deposit within 30 days after notification of admittance. Applicants admitted after February 1 must submit the deposit within two weeks after notification of admittance. This deposit is not refundable but is credited toward the first fee payment. Applicants who fail to make the deposit within the time specified forfeit their place in the entering class.

Additional Admission Considerations

Fulfillment of the specific requirements listed for admission does not ensure admission to the College of Dentistry. The admissions committee reviews applicants who meet the minimum requirements and selects those who appear best qualified for the study and practice of dentistry. The committee considers applicants' academic averages, science averages, DAT scores, letters of recommendation, the interview, and other factors.

Applicants who met the admission requirements five or more years before they applied to the College of Dentistry are considered by the admissions committee only under exceptional circumstances.

Early Admission

The College of Dentistry's Deferred Admit Program (DAP) allows academically motivated students who are residents of Iowa and are interested in a dental career to be conditionally admitted to the College of Dentistry as early as the end of their first year of undergraduate study. Students postpone matriculation to the College of Dentistry until they have earned the amount of credit required for their undergraduate degree. As undergraduates, they are engaged in a liberal arts and sciences curriculum that incorporates the dental prerequisite courses. Once selected for the program, students must maintain a specified level of academic achievement to assure matriculation to the College of Dentistry.
Financial Support

Financial assistance for dental students is based on need. Dental students who demonstrate need are eligible for Health Professions Loans, Perkins Loans, and Stafford/Ford Loans. Students applying for loans must submit the Free Application for Federal Student Aid (FAFSA). Interest on some of these loans may be deferred while the student is in school, and the loans are repayable over an extended period of time after the course of study is completed.

Short-term and long-term loans are available through the financial aid coordinator at the College of Dentistry.

Tuition scholarships are awarded each year to qualified entering dental students. The awards provide financial support up to $15,000 per year for as many as four years, if the student maintains an appropriate level of performance.

Financial assistance (grants and loans) is available to disadvantaged students who qualify under the University of Iowa’s Educational Opportunity Program and the Opportunity at Iowa Program.

Information on financial assistance for dental students is available from the University’s Office of Student Financial Aid.

Academic Rules and Procedures

Promotions, Graduation

Student promotions and graduation are determined by the Collegiate Academic and Professional Performance Committee (CAPP), which is made up of individuals appointed by the dean from the biomedical, preclinical, and clinical sciences and from other academic areas of the college. The performance committee may recommend to the executive associate dean that a student withdraw from the college or repeat specific courses when the student is deemed generally unprepared to be promoted or to enter the dental profession.

Committee for Appeals

When a student has been asked to withdraw from the college or wants special consideration of problems concerning promotion or graduation, he or she may appeal to the dean. All appeals are heard by an ad hoc committee appointed by the dean. The ad hoc committee investigates new information that has not been available previously or that has not been discussed as fully as the student feels it should have been. The committee determines whether this new information, or important new insights that may have been gained, could have influenced the Collegiate Academic and Professional Performance Committee’s decision. The recommendation of the appeals committee is submitted to the dean for final action.
Endodontics

Head
- Fabricio Teixeira

Professional certificate: endodontics
Faculty: http://www.dentistry.uiowa.edu/endodontics-faculty
Website: http://www.dentistry.uiowa.edu/endodontics

The Department of Endodontics provides education and training to predoctoral students and to professional students, who may work toward a graduate degree along with their professional training. Some students participate with departmental faculty in research that contributes to the knowledge base of the specialty. Faculty and advanced students in the department also provide care to patients at the College of Dentistry.

D.D.S. Student Training

Course work and clinical experiences in endodontics are of vital importance in the overall education of Doctor of Dental Surgery students. Preclinical endodontics, taught during the sophomore year, includes a didactic and a laboratory component. In clinical endodontics, taught during the junior year, students study both normal and pathological conditions of the dental pulp and periapex. Diagnosis of pulpal and periradicular disease and various specialized aspects of endodontic treatment are emphasized. Students treat endodontic patients under direct supervision of faculty and staff.

Professional Program of Study

- Certificate in Endodontics

The Certificate in Endodontics is a clinical specialty program designed to provide qualified dentists with the scientific knowledge and clinical skills they will need to practice endodontics and/or pursue a career in dental education and research.

The program's goal is to develop competent diagnosticians and clinicians. Students learn the scientific and clinical basis of endodontics; develop clinical skills; gain knowledge of and experience in the educational process in order to function confidently as dental educators; and develop skills in designing, conducting, reporting, and publishing the results of original research.

Certificate

The Certificate in Endodontics requires a minimum of 24 months of full-time formal training. The curriculum includes clinical and didactic courses. Students complete an original research project in endodontics and write a scientific paper on their research for submission to a refereed journal.

The certificate program satisfies training requirements for eligibility for certification by the American Board of Endodontics. Students who complete the program are encouraged to seek board certification. Various activities throughout the course of study prepare students for the board examination process.

Students must maintain a g.p.a. of at least 3.00 in order to receive the certificate. Students who fall below this average are allowed one semester to raise their g.p.a. to at least 3.00. The circumstances of the grade-point average deficiency receive careful consideration.

Once students enroll in the certificate program, they are not permitted to involve themselves in private dental practice enterprises outside the college. Failure to adhere to this policy may result in dismissal from the program.

Whenever possible, students should complete the certificate program without interruption. Students who demonstrate a need to discontinue the program temporarily should limit their time away to a maximum of one calendar year. Students must have permission from the endodontics graduate program director in order to interrupt their study.

Admission

Applicants to the endodontics certificate program must apply through the American Dental Education Association's Postdoctoral Application Support Services (ADEA PASS). Applicants must hold a D.D.S. or D.M.D. degree or a foreign equivalent and must meet the application requirements of the Graduate College. They should take the National Board Dental Examination, part one, and part two when it is available.

Applications should include official transcripts from all undergraduate and graduate institutions, an updated curriculum vitae, three letters of recommendation, a personal statement, and a photograph (two-inch head-and-shoulders view).

The certificate program begins in summer; ADEA PASS applications should be submitted no later than August 1 for admission the following summer. Finalists for admission are asked for a personal interview in August; admission decisions are made in September.

Graduate Study

Certificate students in the Department of Endodontics may work toward a Master of Science or a Doctor of Philosophy in oral science while earning the certificate. Both graduate degree programs provide students with in-depth knowledge in a scientific training discipline as preparation for careers in academia and research.

Students normally require three years of full-time study to complete the Certificate in Endodontics and the M.S. degree, or at least four years to complete the certificate and the Ph.D. degree. Both graduate degree programs require more didactic course work than the certificate program. The M.S. requires a thesis; the Ph.D. requires a dissertation. See Oral Science (p. 721) in the Catalog.

Other graduate programs are available to endodontics certificate students, such as master's degrees in other disciplines, or a certificate in combination with a Ph.D. in a basic science area. Such programs are available by special arrangement, depending on the candidate's experience and goals. Consult the Department of Endodontics for more information.

Financial Support

Applicants to the certificate and graduate programs must be able to support themselves financially until they complete the programs.

Prospective students should plan to pay living expenses, tuition, and costs for books, specialized equipment (e.g.,
surgical operating microscope, notebook computer, and ultrasonic system), instrument usage, and other expenses. Stipends are determined on a yearly basis and depend on availability of funding.

Courses

For D.D.S. Students

**ENDO:8240 Endodontics Preclinical Didactic**
Basic principles, concepts, technical procedures for treatment of pulpal problems.

**ENDO:8241 Endodontics Preclinical Laboratory**
Basic technical procedures for treatment of pulpal problems.

**ENDO:8360 Clinical Endodontic Practice**
Clinical experience in diagnosis and treatment of routine pulpal and periradicular pathology; emergency diagnosis; treatment of patients.

**ENDO:8365 Clinical Endodontic Seminar**
Tooth pain, anesthesia, pulpal and periradicular reactions, endodontic radiologic interpretation, trauma diagnosis and treatment, surgical endodontics, endodontic implants, bleaching, retreatment, apexification/apexigenesis.

For Certificate Students

Courses offered by the graduate programs in oral science are listed in the Oral Science (p. 721) section of the Catalog.

**ENDO:5225 Endodontic Literature Review I**
Current and historical research.

**ENDO:5226 Endodontic Literature Review II**
Continuation of ENDO:5225.

**ENDO:5260 Current Literature in Endodontics**
Current literature relevant to endodontics, including diagnosis or treatment of endodontic cases; dental journals with endodontic-related content; landmark research.

**ENDO:5700 Endodontic Surgery Conference**
Attendance at Endodontic Surgery Conference.

**ENDO:5701 Advanced Clinical Endodontics**
Advanced study.

**ENDO:5710 Research in Endodontics**
0 s.h.

**ENDO:5720 Seminar in Endodontics I**
First in a series of lectures in endodontics.

**ENDO:5721 Seminar in Endodontics II**
Continuation of ENDO:5720.

**ENDO:6227 Endodontic Literature Review III**
Continuation of ENDO:5226.

**ENDO:6228 Endodontic Literature Review IV**
Continuation of ENDO:6227.

**ENDO:6701 Seminar in Endodontics III**
Continuation of ENDO:5721.

**ENDO:6702 Seminar in Endodontics IV**
Continuation of ENDO:6701.

**ENDO:9300 Endodontic Certificate Program**
Advanced endodontic clinical and didactic education; nondegree program toward eligibility for board certification in endodontics.
Family Dentistry

Head

• David C. Holmes

Faculty: http://www.dentistry.uiowa.edu/family-dentistry-faculty
Web site: http://www.dentistry.uiowa.edu/family-dentistry

The Department of Family Dentistry reinforces and refines the comprehensive approach to managing patients' oral health care needs.

D.D.S. Student Training

The senior year of the Doctor of Dental Surgery program integrates basic science knowledge, clinical skills, and dental laboratory experiences acquired during the first three years of dental school into a systematic approach to providing patient care.

Students who complete their education in Family Dentistry should:

• conduct themselves in a professional and ethical manner;
• understand the principles of comprehensive dental treatment planning;
• know the medical, ethical, and legal issues involved in patient care;
• be able to recognize the need for specialty consultation;
• be competent in coordinating and sequencing patient treatments;
• be effective members of the dental team;
• be prepared to enter general practice;
• be educated and trained for licensure examination; and
• appreciate the importance and value of lifelong learning.

Students spend five days a week in a clinical setting, where they gain experience in total patient management and care. Their didactic course work builds on their previous education. All areas of clinical and didactic instruction, patient awareness, and sensitivity to patients' needs are stressed.

The department's practice management curriculum prepares students to evaluate practice locations and manage the business aspects of a dental practice.

Courses

FAMD:8484 Dental Practice Management 2 s.h.
Principles of dental practice management; delivery of comprehensive dental treatment in a simulated group-practice clinical setting, with chairside dental assistants.

FAMD:8487 Clinical Experiences: Comprehensive Care
Clinical experiences in diagnosis, treatment planning, and delivery of integrated, comprehensive dental care.

FAMD:8494 Topics in Family Dentistry 3 s.h.
Current techniques, findings; applications for general practitioner and graduate specialty programs.

FAMD:8495 Treatment Planning and Sequencing 2 s.h.
Documentation of diagnostic procedures used in developing a treatment plan and sequence for selected clinical patients; student presentations.

Refinement of clinical skills, judgment, and critical self-evaluation in the delivery of integrated, comprehensive dental care.
Geriatric and Special Needs Dentistry

Coordinator
• Howard Cowen

Professional certificate: geriatric and special needs dentistry
Faculty: http://www.dentistry.uiowa.edu/preventive-geriatric-special-needs-certificate-program-faculty
Web site: http://www.dentistry.uiowa.edu/preventive-geriatric-special-needs-certificate-program

The certificate program in geriatric and special needs dentistry prepares dentists to be leaders and teachers in this critical area of practice. The multidisciplinary program incorporates medicine and psychiatry and blends clinical and didactic experiences in varied settings, such as acute, palliative, rehabilitative, and long-term care. Its goal is to provide dental professionals with the knowledge and skills they will need to provide patient-centered, sound, and realistic treatment plans for their geriatric and special needs patients.

Professional Program of Study
• Certificate in Geriatric and Special Needs Dentistry

Certificate
The Certificate in Geriatric and Special Needs Dentistry requires a minimum of one year of full-time study. The program prepares dentists to evaluate and manage the oral health problems of older adults across the spectrum of geriatric health care services as well as adults with special needs. It also prepares professionals for scholastic positions in geriatric education. Successful graduates meet the educational requirements for eligibility to take the fellowship examination of the Special Care Dentistry Association.

Certificate students have opportunities to collaborate with medical residents and other allied health care professionals in providing a holistic approach to care of patients whose dental and medical needs are complex. They gain experience in the College of Dentistry’s patient care clinics and Geriatric Mobile Dental Unit, at St. Luke’s Hospital (Cedar Rapids, Iowa), and at University of Iowa Hospitals and Clinics.

Highlights of the curriculum include advanced clinical geriatric and special needs dentistry, interdisciplinary geriatric patient assessment, geriatric dentistry case studies, outreach, and teaching practicum.

Applicants must hold a D.D.S. or D.M.D. degree from an accredited dental school, be licensed dentists, and meet the admission requirements of the Graduate College. Contact the Geriatric and Special Needs Dentistry Program to learn more.

Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>GSND:5702</td>
<td>Advanced Clinical Geriatric Dentistry II</td>
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<tr>
<td>GSND:5703</td>
<td>Advanced Clinical Geriatric Dentistry III</td>
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</tr>
<tr>
<td>GSND:5704</td>
<td>Advanced Clinical Geriatric Dentistry IV</td>
<td>0.4 s.h.</td>
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<tr>
<td>GSND:5720</td>
<td>Outreach/Advanced Clinical Geriatric Dentistry I</td>
<td>0.3 s.h.</td>
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<tr>
<td>GSND:5721</td>
<td>Outreach/Advanced Clinical Geriatric Dentistry II</td>
<td>0.3 s.h.</td>
</tr>
<tr>
<td>GSND:5730</td>
<td>Interdisciplinary Geriatric Patient Assessment I</td>
<td>0.2 s.h.</td>
</tr>
<tr>
<td>GSND:5731</td>
<td>Interdisciplinary Geriatric Patient Assessment II</td>
<td>0.2 s.h.</td>
</tr>
<tr>
<td>GSND:5740</td>
<td>Advanced Topics in Geriatric Dentistry and Special Needs I</td>
<td>0.2 s.h.</td>
</tr>
<tr>
<td>GSND:5742</td>
<td>Advanced Topics in Geriatric Dentistry and Special Needs II</td>
<td>0.2 s.h.</td>
</tr>
<tr>
<td>GSND:5750</td>
<td>Geriatric Dental Case Study Seminar I</td>
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</tr>
<tr>
<td>GSND:5751</td>
<td>Geriatric Dental Case Study Seminar II</td>
<td>0.2 s.h.</td>
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<tr>
<td>GSND:5760</td>
<td>Teaching Practicum in Geriatric Dentistry I</td>
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<tr>
<td>GSND:5770</td>
<td>Advanced Clinical Training for Developmentally Disabled Adults I</td>
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</tr>
<tr>
<td>GSND:5771</td>
<td>Advanced Clinical Training for Developmentally Disabled Adults II</td>
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</table>

Advanced clinical education in geriatric dentistry.
Hospital Dentistry

Head
• Kirk L. Fridrich (Oral and Maxillofacial Surgery)

Graduate program director
• Ryan W. Hill

Faculty: http://www.uihealthcare.org/docs/Profiles.aspx?id=225137
Web site: http://www.uihealthcare.org/dentistry/

The College of Dentistry operates a hospital dentistry clinical service at University of Iowa Hospitals and Clinics. The service includes divisions of general dentistry, maxillofacial prosthodontics, and oral and maxillofacial surgery, and it interacts with the college's specialties of orthodontics, periodontics, pediatric dentistry, endodontics, diagnosis, oral pathology, and prosthodontics.

The Hospital Dentistry Program offers a one-year general practice residency.

Residency Program

The general practice residency program prepares dentists for a broader scope of private practice in general dentistry. The program combines clinical and didactic training on an individual basis and meets fundamental requirements of the Commission on Dental Accreditation of the American Dental Association (ADA).

The residency covers one year of hospital-based training. Through postdoctoral clinical, didactic, and hospital experience, residents prepare to meet the oral health needs of a wide range of ambulatory and nonambulatory patients. Rotations and patient experiences are divided between University of Iowa Hospitals and Clinics and the Iowa City Veterans Affairs Medical Center.

Residency training includes use of hospital resources, management of ambulatory patients, inpatients, same-day surgery patients, and emergency medical and dental patients. Residents participate in consultations with other hospital services and are assigned to appropriate hospital services to fulfill the objectives of the training program. They are appointed to the hospital's house staff and have the same privileges and responsibilities as residents in other professional education programs.

Applicants must be U.S. citizens or permanent residents and must be graduates of a dental school accredited by the American Dental Association. They also must be eligible for licensure to practice dentistry in the United States. Application deadline is October 1 for the following July 1. See General Practice Residency Program for admission and application requirements.
Operative Dentistry

Head
• Steven Armstrong

Professional certificate: operative dentistry
Faculty: http://www.dentistry.uiowa.edu/operative-faculty
Web site: http://www.dentistry.uiowa.edu/operative

The Department of Operative Dentistry provides training to predoctoral and postdoctoral students.

D.D.S. Student Training

Course work and clinical experiences in operative dentistry are fundamental to the overall education of Doctor of Dental Surgery students. Operative dentistry course work covers roughly one quarter of curriculum time during the first three years of dental school as students progress toward competency in operative dentistry. The department's primary goal is to educate dental students, using best available evidence, to achieve and maintain optimal patient oral comfort, function, and aesthetics through risk-based diagnosis, prevention, and minimally-invasive treatment of caries and hard tissue lesions of the teeth.

Professional Program of Study

• Certificate in Operative Dentistry
Students must earn the Certificate in Operative Dentistry in conjunction with an M.S. or Ph.D. in oral science; see Oral Science (p. 721) in the Catalog.

Certificate

The Certificate in Operative Dentistry is a professional clinical specialty program that provides dentists with advanced training for teaching, research, and the clinical practice of operative dentistry. The operative dentistry graduate program meets the educational requirements for application to take board certification examinations of the American Board of Operative Dentistry. (The American Dental Association does not recognize operative dentistry as a specialty area.)

Applicants to the certificate program must be graduates of accredited U.S. or recognized foreign dental schools and must meet the admission requirements of the Graduate College. The department may request an interview with an applicant.

Certificate students must be enrolled in the M.S. or Ph.D. program in oral science in order to earn the Certificate in Operative Dentistry. Completion of both programs requires 36 months of full-time study. The M.S. requires additional course work as well as a thesis and oral and written comprehensive exams. Students have some flexibility in their curriculum to take courses that particularly interest them. See Oral Science (p. 721) in the Catalog.

Students must provide their own financial support for the certificate and degree programs, including research and thesis expenses.

Courses

For D.D.S. Students

OPER:8120 Dental Anatomy 3 s.h.
Basic dental terminology and nomenclature, human tooth morphology, creation of tooth crowns with wax.

OPER:8122 Operative Dentistry I 6 s.h.
Principles and design of cavity preparations; placement of restorative materials using simulated patients.

OPER:8240 Operative Dentistry II 5 s.h.
Principles of caries and non-carious lesion management, design of cavity preparations, restoration of teeth, patient management, pain control;esthetic dentistry; tooth bleaching, tooth recontouring, esthetic buildups with dental composite; exercises on mannequins in simulation clinic and procedures performed on patients in operative clinic. Prerequisites: OPER:8122.

OPER:8370 Operative Dentistry III 4 s.h.
Combination of didactic and clinical aspects of operative dentistry; medical and surgical management of dental disease; emphasis on minimally invasive dentistry with advanced esthetic principles.

For Certificate Students

OPER:5126 Operative Dentistry Seminar 0-1 s.h.
Review and critical analysis of operative dentistry literature.

OPER:5140 Operative Dentistry Advanced Clinic 0-3 s.h.
Medical and surgical clinical management of dental disease; special emphasis on minimally invasive dentistry using advanced esthetic principles.

OPER:5234 Selected Applications of Operative Dentistry 0-3 s.h.
Advanced techniques completed on simulated patients.

OPER:5245 Pre-Clinical Teaching 0-3 s.h.
Teaching predoctoral dental students on simulated patients.

OPER:6246 Clinical Teaching 0,2 s.h.
Clinical teaching instruction in operative dentistry clinics.
Oral and Maxillofacial Surgery

Head
• Kirk L. Fridrich

Assistant head
• Richard G. Burton

Director, graduate studies
• Steven L. Fletcher

Professional certificate: oral and maxillofacial surgery
Faculty: http://www.dentistry.uiowa.edu/oral-maxillofacial-surgery-faculty
Web site: http://www.dentistry.uiowa.edu/oral-maxillofacial-surgery

The Department of Oral and Maxillofacial Surgery combines clinical and didactic training to fit the individual interests, abilities, and development of students. Its training program for predoctoral students is based in the College of Dentistry, with some clinical assignments in the oral and maxillofacial surgery division at University of Iowa Hospitals and Clinics. Its certificate program is based primarily in the Oral and Maxillofacial Surgery Residency program at University of Iowa Hospitals and Clinics.

D.D.S. Student Training

The Doctor of Dental Surgery curriculum in oral and maxillofacial surgery is designed to develop a foundation of professional knowledge and surgical skills that will enable students to diagnose and manage surgical problems related to general dentistry practice. The program emphasizes high ethical standards and development of good surgical concepts and judgment.

The clinical portion of the curriculum allows students to develop surgical skills and apply the theoretical knowledge acquired in didactic courses. Theory and application of anesthesia-analgesia, intravenous sedation, and nitrous oxide analgesia techniques are presented through didactic and clinical experiences.

Professional Program of Study

• Certificate in Oral and Maxillofacial Surgery

Certificate

The department offers a four-year residency program that culminates in the Certificate in Oral and Maxillofacial Surgery. The program combines clinical and didactic training to prepare dentists for specialty practice. Every effort is made to adapt the program to the individual interests, abilities, and development of students, but it is essential that all students meet certain fundamental requirements.

Recommendations of the American Dental Association, the Committee on Graduate Training of the American Association of Oral and Maxillofacial Surgeons, and the American Board of Oral and Maxillofacial Surgery have been considered carefully in planning the structure and scope of training.

The residency period covers four years of hospital training, providing an orientation to hospital procedures, integration of basic and clinical sciences, acquisition of surgery principles, and familiarization with varied aspects of health services.

Competence in clinical oral and maxillofacial surgery requires knowledge of the basic medical sciences related to the specialty. In addition to hospital and clinical training, residents take advanced course work in subjects such as applied pharmacology, surgical anatomy, pathology, physiology, and microbiology. They also review closely related disciplines such as roentgenology, anesthesiology, physical diagnosis, and laboratory procedures.

The assumption of increased responsibility and the opportunity for clinical and operating room experience are important aspects of residency training.

Residents gain clinical training in anesthesia through an assigned rotation in the Department of Anesthesia (Carver College of Medicine). Previous advanced training in physical diagnosis, physiology, pharmacology, and pathology take on greater clinical significance, and increased responsibility in the operating room as first assistant and surgeon further develops surgical judgment and skills.

Development and implementation of a research project under staff supervision enhance the value of the residency training.

Senior residents may be given responsibility for major oral and maxillofacial surgical cases during rotations at University of Iowa Hospitals and Clinics. Each fourth-year resident is assigned to a rotation as a clinical and didactic coordinator and assumes responsibility to qualify for examination by the American Board of Oral and Maxillofacial Surgery. To learn more about Iowa's program, visit the Oral and Maxillofacial Surgery Residency web site.

Admission

Students may begin the four-year certificate program only on July 1. Applicants are selected through the post-D.D.S. dental matching program sponsored by the American Association of Oral and Maxillofacial Surgeons. The application deadline for the match in oral and maxillofacial surgery is September 1 for admission the following July. Appointments are made after the match results are revealed and the staff elects to take official action. Appointments are offered on or before February 1 for the following July.

Applicants must have graduated from an accredited college of dentistry, should be in the upper one-fourth of their graduating class, and must be eligible to be licensed to practice dentistry in the United States.

Facilities

The University of Iowa health sciences campus has outstanding basic and clinical science departments that stimulate and support scholarly research and superior clinical practice. Appropriate environments for residency training in oral and maxillofacial surgery are provided by University of Iowa Hospitals and Clinics, the College of Dentistry, and the Carver College of Medicine.
For D.D.S. Students

**OMFS:8115 Anesthesia and Pain Control I** 1 s.h.
Principles, techniques of complete medical history, head and neck examination, cardiovascular and respiratory examination; neuroanatomical, psychophysiological aspects of pain; pharmacologic action and techniques for using local anesthetics.

**OMFS:8230 Basic Oral and Maxillofacial Surgery** 2 s.h.
Principles; indications, contraindications for extractions; evaluation of patient's related medical history; techniques of extraction, minor oral surgery procedures.

**OMFS:8245 Anesthesia and Pain Control II** 1 s.h.
Theory, application, instrumentation of nitrous oxide sedation; emphasis on cardiovascular, respiratory physiology; evaluation of patients, practical techniques for nitrous oxide sedation.

**OMFS:8355 Advanced Oral and Maxillofacial Surgery** 1 s.h.
History, examination, diagnosis, treatment of diseases and traumatic injuries of oral cavity.

**OMFS:8360 Clinical Oral and Maxillofacial Surgery** arr.
Clinical experience at the College of Dentistry, University of Iowa Hospitals and Clinics, Veterans Affairs Iowa City Health Care System.

For Certificate Students

**OMFS:5208 Pain and Anxiety Control** 0-3 s.h.
Nitrous oxide; intravenous, oral, intramuscular anxiety and pain control; pharmacology of agents; complications, their management.
Oral Pathology, Radiology, and Medicine

Head
• Steven D. Vincent

Professional certificates: oral and maxillofacial pathology; oral and maxillofacial radiology
Faculty: http://www.dentistry.uiowa.edu/oral-pathology-radiology-medicine-faculty
Web site: http://www.dentistry.uiowa.edu/oral-pathology-radiology-medicine

The Department of Oral Pathology, Radiology, and Medicine educates predoctoral students and professional students, who may pursue graduate study along with their professional training. The department has diverse curricular responsibility and a faculty with widely varied disciplinary expertise.

D.D.S. Student Training

The Department of Oral Pathology, Radiology, and Medicine teaches Doctor of Dental Surgery and other health care students about diseases that manifest in and around the oral and maxillofacial region. Students learn about the clinical, radiographic, laboratory, histopathologic, and therapeutic features of these diseases and about their etiology and natural history. They also study identification of systemic diseases through physical evaluation of patients.

Professional Programs of Study

• Certificate in Oral and Maxillofacial Pathology
• Certificate in Oral and Maxillofacial Radiology

Oral science involves the study of structure, function, and diseases of the oral and maxillofacial region. Study methods include examination of related histories, evaluation of clinical signs and symptoms, and use of biochemical, microscopic, and radiologic procedures to establish a diagnosis and plan for therapeutic management.

The department's programs are diverse and flexible, allowing students to obtain advanced clinical, didactic, and research-related education while earning a professional certificate. Students working toward one of the department's certificates may pursue a Master of Science in oral science in conjunction with the certificate; see "Graduate Study" below.

Certificates

The department offers the Certificate in Oral and Maxillofacial Pathology and the Certificate in Oral and Maxillofacial Radiology. The educational requirements of each certificate program meet the requirements for preparation of dental specialists set by the Commission on Dental Accreditation of the American Dental Association, the American Board of Oral and Maxillofacial Pathology, or the American Board of Oral and Maxillofacial Radiology.

Admission

Applicants must have successfully completed an accredited program leading to the D.D.S. or D.M.D., or a foreign equivalent, and must meet the admission requirements of the Graduate College. They must have a cumulative g.p.a. of at least 3.00 (or foreign equivalent) to be considered for admission.

International applicants whose first language is not English must present a satisfactory score on the Test of English as a Foreign Language (TOEFL).

The department's faculty makes final decisions on acceptance of applicants who meet the requirements for admission. A personal interview is required.

Graduate Study

Students earning one of the department's professional certificates may pursue a Master of Science in oral science while they work toward the certificate. They pursue the M.S. track that corresponds with their certificate (Certificate in Oral and Maxillofacial Pathology or Certificate in Oral and Maxillofacial Radiology). Each program combines the minimum requirements of the M.S. and the certificate; completion time usually is 36 to 48 months.

All students in the combined programs pursue comprehensive study of basic biologic and health sciences in preparation for teaching and research. They must complete the courses listed below, including the core courses and the basic science and departmental courses listed for their M.S. track. They also must prepare and submit a thesis based on the results of research conducted during their course of study. See Oral Science (p. 721) in the Catalog for additional information about requirements and admission.

CORE COURSES

OPRM:5200 Stomatology Literature Review arr.
OPRM:5226 Oral Pathology for Graduate Students arr.
OPRM:5242 Clinical Oral and Maxillofacial Radiology arr.
ORSC:5200 Seminars in Dental Research 1 s.h.
ORSC:5210 Dental Sciences Research Methodology 2 s.h.
ORSC:5212 Statistical Methods for Dental Research 3 s.h.
ORSC:5215 Research Design in Dentistry 2 s.h.
ORSC:5600 Research in Oral Science (taken for a total of 9 s.h.) 9 s.h.
OTO:8199 Basic Otolaryngologic Science 2 s.h.

ORAL AND MAXILLOFACIAL PATHOLOGY TRACK

OPRM:5227 Surgical Oral Pathology 1 s.h.
OPRM:5240 Histopathology 1 s.h.
OPRM:5256 Advanced Oral Pathology arr.
DPH:6017 Teaching Methods and Evaluation 2 s.h.
ORSC:5280 Advanced Dental Therapeutics 1 s.h.
MED:8133 Mechanisms of Health and Disease II 6 s.h.
MED:8134 Mechanisms of Health and Disease III 6 s.h.
MED:8223 Mechanisms of Health and Disease 6 s.h.

**ORAL AND MAXILLOFACIAL RADIOLOGY TRACK**

OPRM:5243 Practical Oral and Maxillofacial Radiology  arr.


OPRM:5245 Head and Neck Radiology  arr.

FRRB:3110 Medical Physics I  2 s.h.

FRRB:3130 Radiation Safety and Radiobiology  2 s.h.

PATH:8133 Introduction to Human Pathology  4 s.h.

for Graduate Students

**Facilities**

Facilities reserved for the Department of Oral Pathology, Radiology, and Medicine include a radiology special procedures area; an interpretation room; a surgical oral pathology laboratory; a clinical pathology laboratory with areas for histopathology; and a seminar room for small groups of graduate and undergraduate students.

In addition, the College of Dentistry has joint-use research laboratories that are well equipped and staffed for conducting research involving histology, histochemistry, materials technology, radiobiology, ultrastructure, and electron probe analysis and quantification.

**Courses**

**For D.D.S. Students**

OPRM:8120 Fundamentals of Oral Radiology  1 s.h.

Methods of clinical, radiographic examination, record keeping; correlation of basic, clinical sciences.

OPRM:8235 Oral Pathology  4 s.h.

Diseases involving orofacial organs.

OPRM:8245 Introduction to Clinical Oral Radiology  1 s.h.

Principles, techniques of diagnosis, radiology, clinical pathology in clinical practice.

OPRM:8355 Systemic Disease Manifestations  1 s.h.

Clinical medicine for dental students; basic information for patient evaluation.

OPRM:8360 Clinical Oral Diagnosis  1 s.h.

Diagnosis of orofacial diseases by clinical, laboratory, radiographic and treatment planning methods; clinical case analysis.

OPRM:8361 Clinical Oral Radiology  arr.

Making and processing intraoral, extraoral radiographs; principles of radiographic interpretation.

OPRM:8365 Clinical Oral Pathology  1 s.h.

Oral and maxillofacial diseases: integration of the clinical, historical, radiographic features; therapeutic management.

**For Certificate Students**

Courses offered by the graduate programs in oral science are listed in the Oral Science (p. 721) section of the Catalog.

OPRM:5200 Stomatology Literature Review  0-3 s.h.

Current literature in oral and maxillofacial pathology and radiology; presentation of graduate student research; development of lectures or seminars for D.D.S. or graduate students, or continuing education for peers and practicing dentists.

OPRM:5225 Manifestations of Oral and Paraoral Disease  0-3 s.h.

Clinical experience in diagnosing, managing patients.

OPRM:5226 Oral Pathology for Graduate Students  0-1 s.h.

Head and neck diseases, abnormalities.

OPRM:5227 Surgical Oral Pathology  0-1 s.h.

Experience in day-to-day operations of surgical oral pathology laboratory; advanced training in histopathologic diagnosis of oral and maxillofacial diseases. Corequisites: OPRM:5240, if not taken as a prerequisite.

OPRM:5228 Introduction to Surgical Oral Pathology  0-1 s.h.

Day-to-day operations of surgical oral pathology laboratory; histopathologic diagnosis of oral and maxillofacial diseases.

OPRM:5230 Research in Oral Pathology, Radiology, and Medicine  0-3 s.h.

Includes thesis preparation.

OPRM:5238 Introduction to Histopathology  0-1 s.h.

Case studies; histopathologic diagnosis of diseases that affect oral and maxillofacial region.

OPRM:5240 Histopathology  0-1 s.h.

Case studies; advanced training in histopathologic diagnosis of diseases that affect oral and maxillofacial region. Corequisites: ORDN:5202, if not taken as a prerequisite.

OPRM:5241 Hospital Oral Pathology, Radiology, and Medicine  0-3 s.h.

Management of patient consultations, diagnosis, therapy at a hospital-based dental service.

OPRM:5242 Clinical Oral and Maxillofacial Radiology  0-3 s.h.

Radiologic manifestations of diseases; emphasis on craniofacial complex.

OPRM:5243 Practical Oral and Maxillofacial Radiology  0-3 s.h.

Clinic participation; supervision of dental and dental hygiene students, review of their cases; participation in clinical radiology conferences, laboratory exercises.

OPRM:5244 Technical Oral and Maxillofacial Radiology  0-3 s.h.
Experience with technical maintenance of darkroom, clinical equipment; troubleshooting under supervision of radiology staff.

**OPRM:5245 Head and Neck Radiology** 0-3 s.h.
Hospital-based rotation in diagnostic radiology with participation in interpretation sessions; CT, MRI, nuclear medicine, ultrasound.

**OPRM:5246 Craniofacial Radiology** 0-3 s.h.
Hospital-based rotation in diagnostic radiology; exposure to interpretive sessions on ultrasound, CT, MRI, nuclear medicine.

**OPRM:5256 Advanced Oral Pathology** 0-1 s.h.
Diseases involving orofacial organs; emphasis on bibliographic research, biodynamic analysis of pathologic processes, diagnostic interpretation; content adapted to student interests. Requirements: graduate standing in oral pathology.

**OPRM:9300 Oral Pathology Certificate Program** 0 s.h.
Advanced dental clinical and didactic education; nondegree program toward eligibility for board certification in oral and maxillofacial pathology.

**OPRM:9301 Oral Radiology Certificate Program** 0 s.h.
Advanced dental clinical, didactic education; nondegree program toward eligibility for board certification in oral and maxillofacial radiology.
Oral Science

Director
• Christopher Squier (Oral Pathology, Radiology, and Medicine/International Programs)

Graduate degrees: M.S. in oral science; Ph.D. in oral science
Web site: http://www.dentistry.uiowa.edu/

Graduate Programs of Study
• Master of Science in oral science
• Doctor of Philosophy in oral science

Graduate programs in oral science require that students complete courses from a core curriculum and conduct independent research leading to a thesis. The programs prepare graduates for careers in teaching and research.

Students must enroll in a professional certificate program offered by a College of Dentistry department in order to enroll in the Master of Science program in oral science. The following departments offer their certificate students the opportunity to earn M.S. degrees in oral science:
- Endodontics (p. 710)
- Prosthodontics (p. 732)
- Operative Dentistry (p. 715)
- Periodontics (p. 727)
- Oral Pathology, Radiology, and Medicine (p. 718)

Master of Science

The Master of Science program in oral science requires a minimum of 30 s.h. of graduate credit, including 21 s.h. of course work, 9 s.h. of independent research leading to a thesis, and a final examination. M.S. students must spend at least two years in full-time residence at the University of Iowa.

Students pursuing the M.S. normally must be enrolled in a clinical specialty training program offered by a College of Dentistry department. Students should complete the M.S. and the clinical specialty training program in three years of study.

Doctor of Philosophy

The Doctor of Philosophy program in oral science requires a minimum of 72 s.h. of graduate credit, including advanced course work and original research that culminates in the successful defense of a dissertation. Students must pass a comprehensive examination, prepare and gain approval of a research project, and complete and successfully defend a dissertation that describes the results of their research. Completion of the program usually requires at least four years of full-time study.

Admission

Applicants to the M.S. and Ph.D. programs must meet the admission requirements of the Graduate College. Applicants whose first language is not English must score at least 550 (paper-based) or at least 81 (Internet-based) on the Test of English as a Foreign Language (TOEFL); they also may be asked to take the Test of Spoken English.

Programs normally begin July 1 each year.

Applicants to the Ph.D. program are asked to submit a statement describing past research experience and current research interests, and stating how completion of the Ph.D. program fits their career goals.

A personal interview may be requested for either program.

Courses

ORSC:5200 Seminars in Dental Research 0-1 s.h.
ORSC:5210 Dental Sciences Research Methodology 0,2 s.h.
Practical, experimental procedures in dental research; literature and design; writing of research protocols. Offered summer session.

ORSC:5212 Statistical Methods for Dental Research 0,3 s.h.
Descriptive methods, elementary probability, distributions, populations and samples, methods for analyzing percentage data and paired and unpaired measurement data, regression, correlation, and analysis of variance.

ORSC:5215 Research Design in Dentistry 0,2 s.h.
Types of studies used in dentistry; design validity; sampling methodologies; major descriptive and experimental designs used in dental research; application of statistical tests to these designs. Offered spring semester.

ORSC:5220 Pathophysiology of Skin and Oral Mucosa 0,2 s.h.
Biology of skin, oral mucosa; changes in behavior of the tissues in varied physiological, pathological conditions. Offered spring semesters of even years. Prerequisites: ORSC:5210.

ORSC:5240 Pathophysiology of the Pulp-Dentin Complex 0-3 s.h.
Biology of tissue; emphasis on pathological changes. Offered spring semesters of even years. Prerequisites: ORSC:5210.

ORSC:5250 Current Concepts of Cariology 0,2 s.h.
Etiology of dental caries; pathogenesis, development of preventive measures. Offered spring semesters of odd years. Prerequisites: ORSC:5210.

ORSC:5260 Bone and Tooth Support Structure and Implants 0,2 s.h.
Biology of bone and periodontal structures; biologic basis for therapeutic use of dental implants. Offered fall semesters of odd years.

ORSC:5275 Oral Microbiology and Immunology 0,2 s.h.
Principles of microbiology and immunology, aspects of microbial community development in the oral cavity, basic concepts of host/parasite interactions related to development of oral diseases; biological, immunological, and clinical manifestations induced by major oral pathogens. Offered spring semesters of odd years. Requirements: microbiology, biochemistry, and biology. Recommendations: immunology.
ORSC:5280 Advanced Dental Therapeutics  0-1 s.h.
Antimicrobial, analgesic, related therapies; emphasis on drug/drug interactions, dental implications of chronic cardiovascular and central nervous system medications. Offered fall semesters.

ORSC:5600 Research in Oral Science  arr.
Thesis research. Requirements: oral science M.S. or Ph.D. candidacy.

ORSC:5610 Independent Study  0-3 s.h.
Opportunity to pursue in-depth study in a particular area of interest; students meet with faculty member to design plan of study.
Orthodontics

Head
- Thomas E. Southard

Professional certificate: orthodontics
Graduate degree: M.S. in orthodontics
Faculty: http://www.dentistry.uiowa.edu/orthodontics-faculty
Web site: http://www.dentistry.uiowa.edu/orthodontics

The Department of Orthodontics educates predoctoral, professional, and graduate students for careers as practicing dentists, orthodontists, researchers, and teachers. It delivers state-of-the-art treatment to its patients—adults, children, and adolescents with a range of orthodontic, craniofacial, and related issues. The department also conducts major research programs and receives significant funding from the National Institutes of Health.

D.D.S. Student Training

The Department of Orthodontics prepares Doctor of Dental Surgery students to competently recognize and diagnose malocclusions of the teeth. Lecture courses guide D.D.S. students in learning basic concepts of dental and facial growth as well as treatment-oriented subject matter. In a laboratory course, students take and evaluate diagnostic records and fabricate treatment appliances.

Graduate and Professional Programs of Study

- Master of Science in orthodontics
- Certificate in Orthodontics

The graduate program and the professional clinical specialty program in orthodontics prepare competent individuals to practice orthodontics and dentofacial orthopedics. The programs’ objectives are to provide students with an in-depth education in biological and biomechanical principles related to orthodontics; to teach students to diagnose, plan, and deliver comprehensive orthodontic health care service; and to develop students’ research and service skills.

Opportunities are available for research and independent study in the department, and there are special facilities for research in biomechanics and craniofacial growth. Interaction with other departments provides learning and research opportunities in surgical orthodontics, cleft lip and palate treatment, speech pathology, animal experimentation, and human growth.

Master of Science and Certificate

The Master of Science program in orthodontics requires a minimum of 30 s.h. of graduate credit. Students must satisfactorily complete a thesis based on an original research project to qualify for the M.S. degree.

Satisfactory completion of 24 months of intensive study, including lecture courses, seminars, clinical practicum, and a research paper, also qualifies students to receive the Certificate in Orthodontics.

Admission

Applicants must have a D.D.S. degree or equivalent and must meet the admission requirements of the Graduate College. Application deadline is September 1 for entry the following July 1. Applicants are required to come to the University for interviews with department faculty.

Courses

For D.D.S. Students

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>ORDN:8215</td>
<td>Growth and Development</td>
<td>1 s.h.</td>
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<tr>
<td>ORDN:8235</td>
<td>Orthodontic Laboratory</td>
<td>1 s.h.</td>
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<tr>
<td>ORDN:8236</td>
<td>Orthodontic Treatment</td>
<td>1 s.h.</td>
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For Graduate and Certificate Students

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>ORDN:5200</td>
<td>Control Theory and Craniofacial Morphogenetic Systems</td>
<td>0-1 s.h.</td>
</tr>
<tr>
<td>ORDN:5201</td>
<td>Orthodontic Theory: Diagnosis and Treatment Plan</td>
<td>0,2 s.h.</td>
</tr>
<tr>
<td>ORDN:5202</td>
<td>Diagnosis and Treatment Planning</td>
<td>0,2 s.h.</td>
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<tr>
<td>ORDN:5203</td>
<td>Advanced Orthodontic Technique</td>
<td>0-3 s.h.</td>
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<tr>
<td>ORDN:5204</td>
<td>Biomechanics</td>
<td>0-3 s.h.</td>
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<tr>
<td>ORDN:5205</td>
<td>Facial Growth</td>
<td>0-2 s.h.</td>
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<tr>
<td>ORDN:5207</td>
<td>Case Analysis</td>
<td>0-3 s.h.</td>
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<tr>
<td>ORDN:5209</td>
<td>Orthodontic Practicum</td>
<td>0-3 s.h.</td>
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<tr>
<td>ORDN:5210</td>
<td>Orthodontic Seminar</td>
<td>0-3 s.h.</td>
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</tbody>
</table>

Evaluation, discussion, criticism, defense of diagnostic and treatment approaches to orthodontic cases that need, are undergoing, or have completed orthodontic treatment.
ORDN:5217 Cephalometrics 0-3 s.h.
Use of skull X-ray (lateral and/or postero-anterior) in formulating orthodontic diagnosis, treatment plans for malocclusions; cephalometrics as a tool for craniofacial structure research.

ORDN:5220 Craniofacial Anatomy 0-3 s.h.
Literature on anatomy, phylogeny, ontogenesis, physiology of craniofacial structures.

ORDN:5221 Surgical Orthodontic Seminar 0-1 s.h.
Evaluation, discussion, criticism, defense of diagnostic and treatment approaches to orthodontic cases that need, are undergoing, or have completed surgical-orthodontic treatment.

ORDN:5400 Dental Treatment of Maxillofacial Deformities 0,2 s.h.

ORDN:5700 Orthodontics Clinic 0-1 s.h.
Clinical experience in orthodontics clinic.

ORDN:6211 Problems: Orthodontics 0-3 s.h.

ORDN:6212 Research: Orthodontics 0-3 s.h.

ORDN:6215 Orthodontic Journal Club 0-3 s.h.
Current biological, technical publications.

ORDN:6216 Practice Management 0-3 s.h.
Business management of orthodontic practice; solo practice, associateship, partnership, practice corporation.

ORDN:9300 Orthodontic Certificate Program 0 s.h.
Clinical and didactic education toward eligibility for board certification in orthodontics.
Pediatric Dentistry

Head

- Karin Weber-Gasparoni

Professional certificate: pediatric dentistry

Faculty: http://www.dentistry.uiowa.edu/pediatric-faculty

Web site: http://www.dentistry.uiowa.edu/pediatric

The Department of Pediatric Dentistry instructs predoctoral and professional students in the prevention and treatment of dental diseases in children as well as individuals with special health care needs. Instruction combines didactic, laboratory, and clinical experiences and gives special consideration to reviewing current literature and managing dental problems of children with special health care needs. It also emphasizes efficient treatment through proper use of dental auxiliary personnel and record management.

D.D.S. Student Training

All second-year Doctor of Dental Surgery students participate in a one-semester lecture course that includes preclinical exercises in the Simulation Clinic. Third-year D.D.S. students participate in a clerkship, which includes a lecture course and a clinical course. During their fourth year, D.D.S. students participate in a rotation through the department's clinics.

Professional Program of Study

- Certificate in Pediatric Dentistry

The department's certificate program is accredited by the Commission on Dental Accreditation of the American Dental Association.

Certificate

The Certificate in Pediatric Dentistry is a two-year residency program that prepares students for certification by the American Board of Pediatric Dentistry. Certificate students are trained in all phases of pediatric dentistry and have career choices in private practice, education, or research. Special emphasis is placed on development of leadership skills and strategies for serving vulnerable populations.

Approximately 60 percent of the certificate program is devoted to advanced clinical activity, 30 percent to didactic courses and practice teaching, and 10 percent to original research. The program includes a core of didactic, clinical, and research-oriented courses supplemented by electives determined by students' individual interests.

Close associations with the Stead Family Department of Pediatrics in the Roy J. and Lucille A. Carver College of Medicine, the Center for Disabilities and Development, and University of Iowa Hospitals and Clinics permit emphasis on oral rehabilitation under general anesthesia, treatment of children with conscious sedation, instruction in physical diagnosis, and management of children with developmental disabilities.

Admission

Prospective students apply through the American Dental Education Association PASS program. Openings in the program are filled through the Postdoctoral Dental Matching Program. Applicants must meet the admission requirements of the Graduate College.

Financial Support

Stipends for the two-year program are provided by federal agencies and other sources.

Research Opportunities

Clinical and laboratory research projects have financial support from federal agencies and other sources. Major research areas include cariology, dental materials, dentistry for persons with special health care needs, growth and development, fluoride therapy, child behavior management, nutrition, prevention, and access to care.

Faculty

Faculty members hold numerous professional offices at national and state levels, committee memberships, consultancies, and honors in professional organizations. They serve as reviewers for professional journals and federal granting agencies. They also participate regularly in continuing education programs for dentists and other health science personnel. Fifteen of the department's faculty members are diplomates of the American Board of Pediatric Dentistry.

Courses

For D.D.S. Students

PEDO:8240 Pediatric Dentistry Diagnosis and Treatment
3 s.h.
Growth and development, behavior management, diagnostic-preventive-restorative techniques for pediatric patients.

PEDO:8360 Clinical Pediatric Dentistry
arr.
Comprehensive clinical management of pediatric patients.

PEDO:8365 Clinical Seminar in Pediatric Dentistry
1 s.h.
Patient management, case histories, treatment philosophies, issues in contemporary dentistry for children.

For Certificate Students

PEDO:5220 Social, Cultural, and Public Health Issues in Pediatric Dentistry
1 s.h.

PEDO:5700 Advanced Didactic Pediatric Dentistry
0-1 s.h.
Lectures in advanced pediatric dentistry.

PEDO:5702 Seminar in Pediatric Dentistry
0-1 s.h.
Discussion in pediatric dentistry.

PEDO:5704 Pediatric Dentistry Grand Rounds
0-1 s.h.
Pediatric dentistry rounds.

PEDO:5706 Journal Review Practicum
0-1 s.h.
Review of journal material in pediatric dentistry.
PEDO:5720 Diagnosis and Treatment Planning
Diagnosis and treatment planning for pediatric patient.

PEDO:5722 Interdisciplinary Issues for Patients with Special Health Care Needs
0-1 s.h.

PEDO:5724 Oral Health Care for People with Special Health Care Needs
Providing oral health care for individuals with disabilities.

PEDO:5730 Advanced Clinical Pediatric Dentistry
Advanced study in clinical pediatric dentistry.

PEDO:5732 Pediatric Physical Diagnosis
Pediatric physical diagnosis for dental practice.

PEDO:5734 Pediatric Medicine for Dental Practitioners
Pediatric therapy for dental practitioners.

PEDO:5736 General Anesthesia Rotation
0,2 s.h.

PEDO:5738 Clinical Application of Pediatric Conscious Sedation
0-1 s.h.

PEDO:6700 Research in Pediatric Dentistry
0-1 s.h.

PEDO:6710 Practice Teaching in Pediatric Dentistry
0-1 s.h.

PEDO:9300 Pediatric Dentistry Certificate Program
Advanced dental clinical and didactic education; nondegree program toward eligibility for board certification in pediatric dentistry.
Periodontics

Head
- Georgia K. Johnson

Professional certificate: Periodontics
Faculty: http://www.dentistry.uiowa.edu/periodontics-faculty
Web site: http://www.dentistry.uiowa.edu/periodontics

The Department of Periodontics educates predoctoral students as well as professional students, who may elect to pursue graduate study along with their professional training. The department also provides interdisciplinary care for patients with complex treatment needs; generates new knowledge through its research programs; and provides professional service and leadership at all levels, local to worldwide.

D.D.S. Student Training

The periodontal program acquaints Doctor of Dental Surgery students with the diagnosis and management of periodontal diseases. It combines didactic, laboratory, and clinical experience and applies the biological concepts of periodontology to the comprehensive clinical management of patients.

Professional Program of Study

- Certificate in Periodontics

Students working toward the Certificate in Periodontics may pursue the Master of Science in oral science in conjunction with the certificate; see "Graduate Study" below.

Certificate

The Certificate in Periodontics requires 36 months of full-time study, including satisfactory completion of required didactic and clinical courses, satisfactory completion of comprehensive written and oral examinations, and an acceptable literature review or research paper. Opportunities are provided for experience in clinical and basic research.

The certificate program provides a sound foundation for the clinical practice of periodontics. It meets all requirements of the American Dental Association’s Commission on Dental Accreditation for advanced dental education programs in periodontics. It also meets the educational requirements for application to take board certification examinations of the American Board of Periodontology.

Certificate students must be financially prepared for uninterrupted pursuit of their program of study.

Admission

Applicants to the periodontics certificate program must have a D.D.S. degree or the equivalent and must meet the admission requirements of the Graduate College. Applicants must take the National Dental Board Examination and must interview with the department. Visit Iowa Graduate Admissions—College of Dentistry to learn more about applying to the certificate program.

Graduate Study

Students earning the Certificate in Periodontics may pursue a Master of Science in oral science concurrently while working toward certificate completion. The M.S. program requires 36 months of full-time study, including satisfactory completion of required and elective courses, preparation and defense of an acceptable thesis based on original research, and satisfactory completion of comprehensive written and oral examinations. See Oral Science (p. 721) in the Catalog.

Facilities

The department has 22 modern, well-equipped operatories devoted exclusively to periodontics. Hospital experience is available to students in the nearby University of Iowa Hospitals and Clinics.

Research facilities include collegiate laboratories in histology, microscopy, biomaterials, quantitation, tissue culture, molecular biology and biochemistry, and microbiology. Other facilities are available by arrangement with University of Iowa Hospitals and Clinics, Eckstein Medical Research Building, and Medical Laboratories.

Courses

For D.D.S. Students

PERI:8120 Periodontic Methods I 2 s.h.
Normal periodontium, periodontal diseases, diagnosis etiology, epidemiology of periodontal diseases.

PERI:8230 Periodontic Methods II 1 s.h.
Periodontal treatment planning, prognosis, initial phase of periodontal therapy, treatment of acute periodontal problems, overview of surgical procedures.

PERI:8360 Periodontics Clinic arr.
Comprehensive clinical management of periodontal patients.

PERI:8365 Periodontology Seminar 1-2 s.h.
Comprehensive concepts of periodontology, clinical management of patients.

For Certificate Students

Courses offered by the graduate programs in oral science are listed in the Oral Science (p. 721) section of the Catalog.

PERI:5212 Applied Oral Microbiology 0-3 s.h.
Role of microbial factors and host response in pathogenesis of periodontal diseases; interactions between periodontal diseases and systemic diseases/conditions.

PERI:5225 Periodontology Literature Review I: Mucogingival Therapy 0-3 s.h.
Analysis of literature relating to a range of mucogingival conditions affecting the periodontium, different procedures to address/correct them, and expected outcome from each.

PERI:5226 Periodontology Literature Review: Regenerative Therapy 0-3 s.h.
Critical evaluation of rationale, indications, and results of various regeneration procedures and materials used in periodontics.

**PERI:5227 Periodontology Literature Review: Longitudinal Studies**
0-3 s.h.
Effects and effectiveness of mechanical periodontal therapy.

**PERI:5228 Periodontology Literature Review: Occlusion**
0-3 s.h.
Role of occlusal trauma in periodontal diseases; occlusion, mandibular movements, and occlusal adjustment; diagnosis and management of temporomandibular disorders; occlusion related to implants.

**PERI:5229 Periodontology Literature Review: Implants**
0-3 s.h.
Critical review, in-depth analysis, and discussion of classical and current implant literature involving basic and clinical science of surgical and some prosthodontic implantology.

**PERI:5230 Periodontic Literature Review: Resective**
0-1 s.h.
Introduction to language and concepts for resective procedures used in patient treatment.

**PERI:5700 Advanced Periodontology**
0-1 s.h.

**PERI:5710 Case Management Seminar**
0-2 s.h.
Case management seminar in periodontics.

**PERI:5720 Current Topics**
0-1 s.h.
Current topics in periodontics.

**PERI:5740 Periodontal Implant Provisionalization**
0-1 s.h.

**PERI:5750 Advanced Clinical Periodontics**
0-2 s.h.

**PERI:7208 Recent Advances in Periodontics**
0-3 s.h.
Review of current literature.

**PERI:7700 Practice Management**
0-1 s.h.
Practice management in periodontics.

**PERI:7701 Practice Teaching in Periodontics**
0-2 s.h.
Preventive and Community Dentistry

Head
• Daniel Caplan

Graduate degree: M.S. in dental public health
Faculty: http://www.dentistry.uiowa.edu/preventive-faculty
Web site: http://www.dentistry.uiowa.edu/preventive

The Department of Preventive and Community Dentistry educates future and practicing dental and oral health professionals, preparing them to understand and recognize:

• conditions that compromise patients;
• social, cultural, community, and political influences on dental practice;
• principles of preventive dentistry for individuals, groups, and communities; and
• considerations for preventing and treating oral disease in geriatric and special needs patients.

In addition to offering educational programs, the department provides patient care at the College of Dentistry and in a variety of off-campus settings. It also is home to research that advances dental public health.

D.D.S. Student Training

Predoctoral training in preventive, community, and geriatric dentistry is designed to increase Doctor of Dental Surgery students' awareness of preventive dental practices, aspects of dental practices affected by community factors, and care of compromised adult patients.

Community dentistry programs give students opportunities to interact with health care teams and the public in Iowa and around the world. The department conducts off-site community programs statewide, nationwide, and worldwide. It also operates the Special Care Clinic, which is housed in the Dental Science Building.

Using the community dentistry programs as the classroom, D.D.S. students observe and participate in a variety of activities that nurture their awareness of the societal obligations they must assume in order to become effective practitioners.

Graduate Program of Study
• Master of Science in dental public health

Master of Science

The Master of Science program in dental public health requires 40 s.h. of course work and is designed to be completed in two academic years of full-time study. It prepares dentists and dental hygienists to be specialists in dental public health. The program emphasizes research and requires a research project culminating in the completion and defense of a thesis. Successful dentist graduates meet the educational requirements for eligibility to take the certifying examination of the American Board of Dental Public Health.

Applicants must meet the admission requirements of the Graduate College.

Courses

For D.D.S. Students

The department offers courses in preventive and community dentistry for D.D.S. students.

PCD:8116 Fundamentals of Clinical Dentistry
Identification of health and disease in the mouth; practical methods of disease control, philosophy of preventive dentistry; patient assessment, clinical diagnosis.

PCD:8117 Cariology and Preventive Therapies
Multifactorial etiology of dental caries; support data for use of fluorides, sealants, antimicrobials, and plaque control mechanisms in prevention of caries. Prerequisites: PCD:8116.

PCD:8118 Preventive Dentistry Assessment and Patient Care
Patient oral assessment, communication, patient management skills; preventive dentistry risk assessment, oral hygiene instruction for collegiate recall patients; skills in instrumentation for detection, removal of calculus deposits. Prerequisites: PCD:8116 and PCD:8117.

PCD:8245 Clinical Preventive Dentistry
Experience providing complete prophylaxis and preventive services for college patients; application of nutrition principles and communication skills in a clinic setting. Prerequisites: PCD:8118.

PCD:8360 The Practice of Dentistry in the Community I
Issues related to the role of the dental professional at a local and state level, including dental public health, health literacy, cultural competency, and forensic dentistry; the role of the state dental director.

PCD:8361 The Practice of Dentistry in the Community II
Factors that affect the profession and practice of dentistry, including basics of health care systems in the U.S. and in other countries; health care reform; Medicaid; dental insurance; health care delivery systems; legal and malpractice issues; dental utilization and dental workforce; quality of care.

PCD:8485 Broadlawns Medical Center
Dental care to low-income patients in a metropolitan hospital-based clinic; community-related assignments; student team experience in Des Moines.

PCD:8486 Colorado Migrant Program
Experience providing primary dental care and outreach services to a migrant population; broad understanding of needs, resources for migrant, low-socioeconomic populations.

PCD:8487 Community Health Care: Davenport
Experience providing dental care at medical-dental ambulatory health care facility serving Scott County; community-related assignments.

**PCD:8488 St. Lukes Dental Health Center** arr.
Experience providing clinical and outreach services for low-income children and adults with developmental disabilities at St. Luke's Hospital, Cedar Rapids; operative and behavioral dental problems, hospital protocol, special needs of low-socioeconomic clients.

**PCD:8489 Geriatrics and Special Needs Program** arr.
Experience in Special Care Clinic and Geriatric Mobile Dental Unit; comprehensive care for medically, physically, cognitively compromised adults, including frail elderly nursing home residents with portable equipment, other underserved populations.

**PCD:8491 Private Practice Preceptorship** arr.
Development of skills and knowledge necessary for day-to-day practice of dentistry; experience at selected preceptor sites in Iowa.

**PCD:8494 Special Field Clinic** arr.
Extramural experiences developed according to student needs, extramural opportunities.

**PCD:8496 Siouxland Community Health Center** arr.
Experience providing dental care at medical/dental ambulatory health care facility; community-related assignments.

**PCD:8497 ADEAGies/AADR-ADCFP Fellowship** 4 s.h.
Window into day-to-day experiences of dental school faculty members for oral health professional students; exposure to multifarious educational experiences at dental institutions including academics, clinical practice, and biomedical, clinical, educational research, and administration.

**For Graduate Students**

The department offers courses in dental public health for graduate students.

**DPH:5000 Introduction to Dental Public Health** 0,2 s.h.
Science, philosophy, practice of dental public health.

**DPH:5001 Literature Review Methods: Dental Public Health** 0,2 s.h.
Concepts and process of literature review, particularly in area of student's interest.

**DPH:5005 Administration of Public Dental Programs** 0,2 s.h.
Application of general management concepts; practical aspects of planning, financing, staffing, implementing, operating, evaluating dental public health programs at federal, state, local levels.

**DPH:5006 Preventive Programs in Dental Public Health** 0,2 s.h.
Prevention, control methods for major dental conditions, primarily dental caries, periodontal diseases; clinical efficacy, cost-effectiveness; development of comprehensive preventive oral health plan for a community.

**DPH:5008 Field Experience in Dental Public Health** arr.
Arranged with public and voluntary health agencies according to students' and agencies' needs.

**DPH:5009 Advanced Field Experience in Dental Public Health** 1-3 s.h.
Opportunity to research, develop, and implement programmatic objectives with local, state, national, and/or federal agencies and organizations on an issue that is both relevant to the student and the agency; may require off-site visits to agencies or organizations. Prerequisites: DPH:5008.

**DPH:5014 Dental Care Policy and Financing** 0,2 s.h.
Dental financing and policy issues: payment mechanisms for health care service providers, third-party prepayment plans, salaried and public-financed programs, Medicaid and Medicare programs, dental insurance systems, and care of the underserved.

**DPH:5016 Introduction to Statistical Computing** arr.
Use of statistical packages on a personal computer for data management and analysis. Offered summer session.

**DPH:5031 Geriatric Care** 0,2 s.h.
Issues and problems related to oral health care in older adults, especially the frail or functionally dependent.

**DPH:6002 Research Protocol Seminar** 0,2 s.h.
Development of a master's thesis protocol; identification of thesis topic, review of relevant literature, development of research methods, writing.

**DPH:6003 Independent Study: Dental Public Health** 1-3 s.h.

**DPH:6004 Principles of Oral Epidemiology** 0-3 s.h.
Retrospective, prospective, cohort study designs; validity and reliability; distribution and determinants of oral diseases—caries, periodontal diseases, oral cancer, malocclusion, fluorosis, HIV infection, tooth loss, edentulism.

Protocol preparation; data collection, analysis, organization; writing, defense of research.

**DPH:6017 Teaching Methods and Evaluation** 0,2 s.h.
Philosophies of dental education, teaching methodologies, evaluation; focus on learning to write educational objectives, writing and analyzing exam items.

**DPH:6018 Clinical Teaching Practicum: Preventive Dentistry** 0-3 s.h.
Teaching experience in preventive dentistry clinic setting with first-year dental students; outcomes focused on methods in clinical teaching, evaluation, and remediation.
Prosthodontics

Head

- Julie Holloway

Professional certificate: prosthodontics
Faculty: [http://www.dentistry.uiowa.edu/prosthodontics](http://www.dentistry.uiowa.edu/prosthodontics)
Web site: [http://www.dentistry.uiowa.edu/prosthodontics](http://www.dentistry.uiowa.edu/prosthodontics)

Prosthodontics is the dentistry specialty involving crowns, fixed partial dentures (bridges), removable partial dentures, complete dentures, maxillofacial prostheses, and implant prostheses.

D.D.S. Student Training

The Department of Prosthodontics instructs Doctor of Dental Surgery students in the basic principles, practices, and concepts of prosthodontics required for the practice of general dentistry. Students learn through laboratory projects and treatment of patients with differing prosthodontic needs.

Professional Program of Study

- Certificate in Prosthodontics

Students working toward the Certificate in Prosthodontics must pursue the Master of Science or the Doctor of Philosophy in oral science in conjunction with the certificate; see "Graduate Study" below.

Certificate

The Certificate in Prosthodontics requires a minimum of 36 months of study. It prepares individuals for specialty clinical practice in the discipline. The curriculum includes didactic courses and clinical training in all of the disciplines that make up the broad specialty of prosthodontics, including implant prosthodontics, maxillofacial prosthetics, and treatment of temporomandibular disorders. Patient care is completed in close collaboration with the other dental specialties. Clinically related basic science instruction complements the clinical curriculum.

The certificate program is accredited by the Commission on Dental Accreditation of the American Dental Association. Successful completion of the program satisfies the formal training requirement for eligibility to take the American Board of Prosthodontics certification examination.

Admission

Applicants to the prosthodontics certificate program must meet the admission requirements of the Graduate College. They must hold a D.D.S. or a D.M.D. degree from a dental school accredited by the American Dental Association or an equivalent degree.

The certificate program begins around July 1 each year. Applications are accepted year-round; those received by August 15 are considered for admission the following July. A personal interview is required for qualified applicants.

Graduate Study

Students earning the Certificate in Prosthodontics must pursue a Master of Science or a Doctor of Philosophy in oral science while they work toward the certificate. The graduate programs prepare individuals for careers in dental education and research and for independent study and professional growth.

Both graduate programs require more courses in the biomedical sciences and research methodology than the certificate program requires. Students must prepare and defend a thesis (M.S.) or dissertation (Ph.D.) based on original research. Facilities and support personnel for research are available through the college's Dows Institute for Dental Research. See Oral Science in the Catalog.

Facilities

Most didactic, clinical, and laboratory instruction and patient treatment takes place in the Department of Prosthodontics, which is located in the Dental Science Building. The building also houses the Doctor of Dental Surgery (D.D.S.) program, training programs in specialties recognized by the American Dental Association, and the Dows Institute for Dental Research.

The college and the department provide supporting technologies that include cone beam CT radiography, implant imaging software, laboratory CADCAM systems, laser surgery, clinical operating microscopes, and digital shade matching.

Advanced prosthodontic students spend time at University of Iowa Hospitals and Clinics, where they work closely with medical professionals in other disciplines to treat medically compromised prosthodontic patients and those who require maxillofacial rehabilitation.

Courses

For D.D.S. Students

**PROS:8120 Treatment of Dentulous Patients: Introduction to Occlusion Lecture**
1 s.h.
Introduction to principles of occlusion and their clinical application.

**PROS:8121 Treatment of Dentulous Patients: Introduction to Occlusion Lab**
1 s.h.
Patient simulation exercises demonstrating principles of occlusion.

**PROS:8122 Treatment of Dentulous Patients: Fixed Prosthodontics for Single Anterior Teeth Lecture**
1 s.h.
Basic principles of fixed prosthodontics for single-unit anterior teeth; basic principles of tooth preparation, clinical steps, and digital procedures for fabrication of anterior single-tooth all-ceramic crowns and interim crowns. Prerequisites: PROS:8120 and PROS:8121.

**PROS:8123 Treatment of Dentulous Patients: Fixed Prosthodontics for Single Anterior Teeth Lab**
1 s.h.
Patient simulation exercises in single anterior tooth preparation, and fabrication of single-unit anterior all-ceramic and interim restorations. Prerequisites: PROS:8120 and PROS:8121.

1 s.h.
Basic biomechanical principles of fixed posterior single tooth prosthodontics; diagnosis and treatment planning for dentate patients including occlusion. Prerequisites: PROS:8120 and PROS:8121 and PROS:8122 and PROS:8123.

PROS:8125 Treatment of Dentulous Patients: Fixed Prosthodontics for Single Posterior Teeth Lab
Patient simulation exercises in single posterior tooth preparation and laboratory fabrication of single-unit posterior definitive and interim restorations. Prerequisites: PROS:8120 and PROS:8121 and PROS:8122 and PROS:8123.

PROS:8240 Treatment of Partially Edentulous Patients: Fixed Multi-Unit Prosthodontics Lecture
Basic biomechanical principles of fixed prosthodontics for multiple-unit fixed prostheses; diagnosis and treatment planning for partially edentulous patient, including occlusion and esthetic concerns.

PROS:8241 Treatment of Partially Edentulous Patients: Fixed Multi-Unit Prosthodontics Patient Simulation I
Patient simulation exercises in preparation and fabrication of a three-unit fixed partial dental prosthesis and interim restoration.

PROS:8242 Treatment of Partially Edentulous Patients: Single Tooth Implant Lecture
Principles, clinical steps, materials, and laboratory procedures necessary for single tooth fixed implant treatment. Prerequisites: PROS:8240 and PROS:8241.

PROS:8243 Treatment of Partially Edentulous Patients: Single Tooth Implant Patient Simulation
Clinical steps in laboratory procedures for single tooth implant surgical guide fabrication and restoration. Prerequisites: PROS:8240 and PROS:8241.

PROS:8244 Treatment of Partially Edentulous Patients: Removable Partial Prosthodontics Lecture
Basic biomechanical principles of tooth replacement with removable partial prosthodontics; diagnosis and treatment planning for partially edentulous patients. Prerequisites: PROS:8240 and PROS:8241 and PROS:8242 and PROS:8243.

PROS:8245 Treatment of Partially Edentulous Patients: Removable Partial Prosthodontics Patient Simulation
Laboratory exercises in basic principles, clinical steps, and laboratory procedures necessary for fabrication of removable partial dentures. Prerequisites: PROS:8240 and PROS:8241 and PROS:8242 and PROS:8243.

PROS:8246 Treatment of Edentulous Patients: Removable Complete Prosthodontics Lecture
Fundamental principles of diagnosis and treatment planning for edentulous patients, surgical and prosthodontic protocols for oral rehabilitation of edentulism.

PROS:8247 Treatment of Edentulous Patients: Removable Complete Prosthodontics Patient Simulation
Laboratory exercises in basic principles, clinical steps, and laboratory procedures necessary for fabrication of complete dentures, including implant over-dentures. Prerequisites: PROS:8240 and PROS:8241 and PROS:8242 and PROS:8243 and PROS:8244 and PROS:8245.

PROS:8250 Clinical Readiness in Prosthodontics

PROS:8360 Prosthodontic Clinic
Experience supplemented by individual supervision, demonstration.

PROS:8365 Prosthodontic Seminar
Knowledge in biological, basic sciences and technique applied to clinical fixed and removable prosthodontics procedures.

Certificate Courses
Courses offered by the graduate programs in oral science are listed in the Oral Science (p. 721) section of the Catalog.

PROS:5700 Advanced Clinical Prosthodontics

PROS:5710 Advanced Removable Prosthodontic Technique

PROS:5720 Advanced Instrument Technique

PROS:5730 Advanced Implant Techniques

PROS:5740 Advanced Fixed Prosthodontics Technique

PROS:5750 Clinical Issues and Treatment Planning in Prosthodontics

PROS:6220 Fixed Prosthodontics Literature Review I
Fixed prosthodontic procedures; assigned readings, discussion of related research.

PROS:6221 Fixed Prosthodontics Literature Review II
Porcelain-fused-to-metal and ceramic restorations, color science and esthetics; assigned readings, discussion of related research.
PROS:6222 Implant Literature Review 0-4 s.h.
Implant prosthodontics; assigned readings, discussion of related research.

PROS:6223 Occlusion Seminar 0-4 s.h.
Occlusion and the temporomandibular system; assigned readings and discussion of related research.

PROS:6224 Graduate Restorative Materials 0-2 s.h.
Dental materials science; mechanical, physical, and chemical properties of restorative materials; selection and manipulation.

PROS:6225 Complete Denture Literature Review 0-4 s.h.
Complete denture prosthodontics; assigned readings, discussion of related research.

PROS:6226 RPD Literature Review 0-4 s.h.
Removable partial denture prosthodontics; assigned readings, discussion of related research.

PROS:6700 Maxillofacial Prosthodontics Seminar 0-1 s.h.

PROS:7700 Maxillofacial Prosthodontics Rotation 0-1 s.h.
College of Education

Dean
  • Nicholas Colangelo
Executive associate dean
  • Christopher H. Morphew
Associate dean, academic affairs and graduate programs
  • David B. Bills
Associate dean, teacher education and student services
  • Nancy J. Langguth

Undergraduate major: elementary education (B.A., B.S., granted by the College of Liberal Arts and Sciences)
Undergraduate minors: educational psychology; human relations
Graduate degrees: M.A.; M.A.T.; M.S.; Ed.S.; Ph.D.
Graduate certificates: college teaching; online teaching
Web site: http://www.education.uiowa.edu/

The nation's first university-level professorial chair in education was established at the University of Iowa in 1872. The department became the School of Education in 1907; and the College of Education, structured largely as it is today, was founded in 1913. Since then, the college's growth has mirrored the growth of the University.

Over the years, College of Education faculty members have been leaders in a variety of educational fields. Particularly noteworthy have been their contributions in the fields of educational testing and measurement. These contributions helped lay the foundation for today's testing and measurement industry, making Iowa City one of the best-known centers for this educational specialty.

The college has four departments: Educational Policy and Leadership Studies (p. 744); Psychological and Quantitative Foundations (p. 759); Rehabilitation and Counselor Education (p. 774); and Teaching and Learning (p. 793).

Teacher Education Programs and Student Teaching

The College of Education offers teacher preparation programs in elementary education and in secondary education for students earning bachelor's degrees. It offers the major in elementary education with a Teacher Education Program (TEP) for students earning a Bachelor of Arts or a Bachelor of Science from the College of Liberal Arts and Sciences. It offers a secondary education TEP for students earning bachelor's degrees with certain majors from the College of Liberal Arts and Sciences. The college also provides a number of specialized elementary and secondary teaching endorsement programs.

Graduate and postbaccalaureate students also may complete a Teacher Education Program; see "Graduate and Postbaccalaureate Admission to TEPs" below and the Teaching and Learning (p. 793) section of the Catalog.

Preparation for special education teaching is offered primarily at the graduate level. In addition, an instructional strategist program is available as an added endorsement for undergraduate students admitted to an elementary education program.

Undergraduate students admitted to a Teacher Education Program must complete all requirements for graduation from the College of Liberal Arts and Sciences, including the General Education Program (p. 313). They must satisfy General Education's Quantitative or Formal Reasoning requirement with a college-level mathematics course.

The Office of Education Services provides information on Teacher Education Programs; offers assistance with admission, student field experiences, and teacher licensure/certification; and serves as a liaison with other University units and external agencies. For more information, visit the office's web site.

Undergraduate Admission to TEPs

Undergraduate applicants to the University of Iowa who wish to become teachers may indicate their interest in the elementary education major or a secondary-level Teacher Education Program (TEP) on their application for admission. Application materials for Teacher Education Programs are available from the Office of Education Services or on the office's web site.

Acceptance to a Teacher Education Program is prerequisite to registration for most College of Education undergraduate courses.

APPLICATION DEADLINES

Application deadlines for all Teacher Education Programs are as follows.

    Summer session and fall semester: March 1
    Spring semester: October 1

Late applications are not accepted.

GENERAL REQUIREMENTS

Admission to Teacher Education Programs is competitive. Admission requirements may vary by program area. Faculty members in each program area review and select students to be admitted to their program. In order to be considered for admission to a Teacher Education Program, an undergraduate student must satisfy the following requirements: admission to the University of Iowa; a minimum amount of credit for college-level work; a minimum grade-point average; minimum scores on a preadmissions test; and a preadmission volunteer field experience in a regular K-12 classroom setting. There may be additional requirements. Teacher Education Program application materials and current minimum application requirements are available on the Office of Education Services web site.

New Direct Admissions Policy

Any student entering the University of Iowa who, upon graduation from high school, has a composite score equal to or greater than 27 on the ACT and a minimum high school g.p.a. of at least 3.80 will be directly admitted into the elementary Teacher Education Program.

Any student who, upon graduation from high school, has a high school g.p.a. of at least 3.20 and who has been accepted into a music studio will be directly admitted into the K-12 music licensure program. Admission is contingent upon submission and acceptance of official verification of a music student's high school grade-point average prior to the start of his or her first year at the University of Iowa.
Graduate and Postbaccalaureate Admission to TEPs

Students who have completed a baccalaureate degree may be admitted to a Teacher Education Program (TEP) as graduate or undergraduate students. Students must apply to the TEP and to the Graduate College or the College of Liberal Arts and Sciences. In some programs they may apply for a master’s degree objective—either a Master of Arts in Teaching (M.A.T.) or in selected majors, a Master of Arts (M.A.).

Students who choose to pursue a graduate-level teacher preparation program must be eligible for admission to the Graduate College, which requires a g.p.a. of at least 3.00 in all previous college course work. They must submit an official Graduate Record Exam (GRE) General Test score report, with scores that meet the minimum score requirement. They also must submit a complete application to the Teacher Education Program; see the Iowa Graduate Admissions web site.

Students also may apply to the College of Liberal Arts and Sciences as postbaccalaureate students with senior standing. Students who choose this option must apply to the appropriate Teacher Education Program, following the undergraduate admissions procedure, and must meet the general requirements for undergraduate admission to the University of Iowa; see the Iowa Undergraduate Admissions web site.

Application deadlines for graduate students and postbaccalaureate students with senior standing are March 1 and October 1.

TEP Standards and Policies

Students in the Teacher Education Program must meet grade-point average requirements each semester. Students who do not meet the requirements are placed on probation; those who fail to meet the requirements in a successive semester may be removed from the Teacher Education Program or denied admission to student teaching. For more information on standards and policies, consult the Office of Education Services.

Electronic Portfolio

Students in the Teacher Education Program document their achievement of professional standards on ePortfolio, a web-based program in which they collect instructional artifacts and performances assigned in all their courses. Students receive instruction on the ePortfolio requirement beginning with the required course EDTL:3002 Technology in the Classroom (teacher education) and EALL:4081 ePortfolio Production (educational leadership).

Student Teaching

The final phase of the Teacher Education Program (TEP) is the professional semester, devoted to supervised student teaching and directed observation in a variety of situations. The student teaching semester is a full-time, all-day, experience. Faculty members, professional staff, and advanced graduate students who are experienced teachers serve as supervisors.

Periodic seminars provide for discussion and evaluation of student teachers’ experiences. Transfer credit may not be used to satisfy the student teaching requirement.

To be admitted to the student teaching semester, students must submit a separate application to the Office of Education Services in the College of Education. All course work in education, for the major, and for the degree must be completed before the student teaching semester. Applications are submitted during the calendar year before the student teaching semester. The deadline is November 30 for students planning to student teach the following fall semester and April 30 for students planning to student teach the following spring semester.

Admission to student teaching requires program area faculty approval as well as verification of satisfactory progress in meeting both College of Education professionalism standards and program area standards, which are set at the time of admission to the TEP. In some programs, standards are higher than the college's required g.p.a. of at least 2.70. Students should consult with their advisors regarding specific requirements for the program areas.

For more information, contact the Office of Education Services.

WAIVERS

Students who have completed courses that they wish to substitute for program requirements should consult with their advisors.

URBAN STUDENT TEACHING

Students who want to advance their educational interests through student teaching in an urban setting may apply through the Office of Student Field Experiences. The urban districts include Clark County, Nevada (Las Vegas area); Chicago Public Schools; Aldine, Texas (Houston area); Rialto, California (Los Angeles area); and St. Louis Park, Minnesota (Minneapolis area). These options are open to all education majors who meet the requirements established for these student teaching sites. For more information about this and other programs, contact the Office of Education Services.

INTERNATIONAL STUDENT TEACHING

International student teaching experiences are available primarily through Global Gateway for Teachers, an Indiana University Program working in collaboration with the University of Iowa. Sites include Australia, China, Costa Rica, Ecuador, England and Wales, Greece, India, Ireland, Italy, Japan, Kenya, New Zealand, Norway, Russian Federation, Scotland, Spain, and Turkey.

Interested students must meet the regular requirements for student teaching and must have the approval of their advisor and the appropriate program coordinator. In most locations, students are assisted with housing by the on-site coordinator.

International assignments are for eight weeks. Students complete an eight-week assignment in a stateside placement followed by an eight-week assignment in an international placement. Secondary education students in some program areas (for instance, English education) are required to complete a full semester of student teaching in the United States before student teaching at an international site.

For more information about international student teaching opportunities, contact the Office of Education Services.

Teacher Licensure/Certification

The Iowa Board of Educational Examiners issues teacher, support service, and administrator licenses on the
recommendation of Iowa colleges and universities whose programs have been approved by the Iowa Department of Education. All University of Iowa preparation programs have Iowa Department of Education approval. Licensure/certification requirements across the nation are subject to change. Students who plan to seek employment in a state other than Iowa should make every effort to be informed about current requirements in that state. Many states require some type of competency testing. Generally, students who apply out-of-state should first secure Iowa licensure.

To be recommended by the University of Iowa, applicants must complete all requirements of the appropriate approved program. A minimum of 20 s.h. of course work applied to meet program requirements must be earned at the University of Iowa. Fingerprinting is required for all new applicants for Iowa licensure; the State of Iowa has outlined specific procedures for the fingerprinting process.

As a requirement for completion of an approved Teacher Education Program for initial teaching licensure, the state of Iowa requires a passing score on two tests: a test that measures pedagogy and a test that measures knowledge of at least one content area. Current requirements are for Praxis II tests that are specific to a student's program. The tests are required before recommendation for licensure or certification to any state.

The College of Education Office of Education Services provides Iowa application forms, fingerprinting procedures, and licensure/certification assistance to all students completing approved programs offered by the college. It also provides assistance to individuals interested in adding endorsements to their Iowa license based on completion of State of Iowa minimum licensure requirements.

State of Iowa Requirements
All University of Iowa students seeking an Iowa teaching license must complete EPLS:4180 Human Relations for the Classroom Teacher and EDTL:4900 Foundations of Special Education, or approved substitutes. Human relations courses offered through community colleges are not accepted. In the State of Iowa, applicants must be at least 21 years old to be granted a teaching license. Applicants who have been found guilty of a felony are barred from receiving an Iowa teaching license. Appeals may be filed directly with the Iowa Board of Educational Examiners.

Undergraduate Programs of Study

Elementary Education Major
The College of Education offers the undergraduate major in elementary education for students earning a Bachelor of Arts or a Bachelor of Science degree from the College of Liberal Arts and Sciences. See Teaching and Learning (p. 793) for details about the major.

Honors in Education
The College of Education Honors Opportunity Program is open to sophomores, juniors, and seniors who have maintained a g.p.a. of at least 3.50. Students with lower grade-point averages who have demonstrated research potential also may be accepted, based on the recommendations of faculty and/or staff members and the education honors advisor. Honors Opportunity Program students must take EHOP:4100 Honors Seminar in Education, EHOP:4101 Senior Honors Project, and complete five additional honors experiences. Successful completion of the program results in recognition of the student as a College of Education honors graduate. The Honors Opportunity Program is housed in and administered by the Belin-Blank Center.

Minors
The College of Education offers two minors for students who wish to be better informed about education: one in educational psychology and one in human relations. The minors may help support students' future career objectives and help students prepare to be better informed as parents, as taxpayers, or as future members of local boards of education. See Psychological and Quantitative Foundations (p. 759) to learn more about the minor in educational psychology; see Rehabilitation and Counselor Education (p. 774) to learn more about the minor in human relations.

Graduate Programs of Study
Graduate study in the College of Education is guided by the policies of the Graduate College, with additional requirements set by the College of Education's faculty. Graduate students in education register in the Graduate College and receive their degrees from that college. See the Manual of Rules and Regulations of the Graduate College.

Students admitted to Ph.D. programs in fall 2015 must satisfy their doctoral program's new research requirements.

Degree Programs Offered
The College of Education offers the following graduate degrees and programs.

DEPARTMENT OF EDUCATIONAL POLICY AND LEADERSHIP STUDIES
M.A., Ed.S., and Ph.D. in educational policy and leadership studies; the following programs are available: Educational leadership (offered in the M.A., Ed.S., and Ph.D.)
Higher education and student affairs (offered in the M.A., Ed.S., and Ph.D.)
School curriculum and assessment policy (offered in the Ed.S.)
Schools, culture, and society (offered in the M.A. and Ph.D.)

DEPARTMENT OF PSYCHOLOGICAL AND QUANTITATIVE FOUNDATIONS
M.A., Ed.S., and Ph.D. in psychological and quantitative foundations; the following programs are available: Counseling psychology (offered in the Ph.D.)
Educational measurement and statistics (offered in the M.A. and Ph.D.)

DEPARTMENT OF REHABILITATION AND COUNSELOR EDUCATION
M.A. and Ph.D. in rehabilitation and counselor education; the following programs are available:
Counselor education and supervision (offered in the Ph.D.)
Couple and family therapy (offered in the Ph.D.)
Rehabilitation and mental health counseling (offered in the M.A.)
Rehabilitation counselor education (offered in the Ph.D.)
School counseling (offered in the M.A.)

DEPARTMENT OF TEACHING AND LEARNING
M.A., M.A.T., M.S., and Ph.D. in teaching and learning; the following programs are available:
Art education (offered in the M.A.)
Developmental reading (offered in the M.A.)
English education (offered in the M.A. and M.A.T.)
Foreign language and English as a Second Language (ESL) Education (offered in the M.A., M.A.T., and Ph.D.)
Language, literacy, and culture (offered in the Ph.D.)
Mathematics education (offered in the M.A., M.A.T., and Ph.D.)
Science education (offered in the M.A.T., M.S., and Ph.D.)
Social studies education (offered in the M.A. and Ph.D.)
Special education (offered in the M.A. and Ph.D.)

Master of Arts
The College of Education offers a Master of Arts. Some of the college's M.A. programs are offered with thesis as well as without thesis. Nonthesis programs usually provide more specialized course work than do thesis programs. Although a nonthesis program is not necessarily terminal, students who expect to continue their studies in a doctoral program are urged to select a thesis program in order to gain more experience in research procedures. Students who complete a nonthesis M.A. and are admitted to a Ph.D. program may be asked to submit evidence of writing and research skills to their advisor or department during the early part of their doctoral program. For information about programs that offer a thesis option, see the program descriptions under "Graduate Programs of Study" in College of Education department sections of the Catalog.

Course work completed more than 10 years before the session in which the degree is to be conferred must be evaluated to determine how much credit may be accepted toward the degree requirements. Students must earn at least 24 s.h. in University of Iowa courses after formal admission to a master's degree.

Master of Arts in Teaching
The M.A.T. program is designed for academically superior liberal arts and sciences graduates who completed few or no professional education courses in their undergraduate programs. It is a nonthesis program with requirements that range from 45 s.h. to 67 s.h. of credit. See Teaching and Learning (p. 793) in the Catalog.

The program leads to a master's degree and licensure as a secondary teacher in the fields of English, foreign languages, and science education. Admission to the program requires a g.p.a. of at least 3.00 in undergraduate course work. The program includes 18 s.h. of graduate course work in the student's teaching field. Students must complete a minimum of 20 s.h. of graduate work in education to satisfy licensure requirements.

A Master of Arts program with a secondary education major in social studies leads to initial teacher licensure. See "M.A.: Social Studies Education"/"Program B Requirements" in the Teaching and Learning (p. 793) section of the Catalog.

Master of Science
Thesis programs are available for M.S. students in science education. The degree requirements are similar to those for a Master of Arts.

Specialist in Education
The Ed.S. is granted upon completion of a prescribed two-year postbaccalaureate program designed for students preparing for professional work in fields such as administration and supervision, and special services. Of the minimum 60 s.h. required for the degree, 28 s.h. must be in the specialization area; the rest may be earned in cognate fields, supervised experience, research, and elective courses. The research must culminate in a written report.

Other requirements for the Ed.S. are the same as for the master's degree, except that an Ed.S. requires students to complete 15 s.h. of resident work on campus in one 12-month period or in two summer sessions. Course work completed 10 years before the final examination must be evaluated to determine the amount of credit that may be accepted toward program requirements.

Not all programs offer an Ed.S. degree. For a list of programs and degrees offered, see "Graduate Programs of Study" above.

Doctor of Philosophy
The Ph.D. is the most advanced academic degree. It is conferred upon students who have demonstrated superior scholarship and mastery of research skills in course work as well as in the preparation and defense of a dissertation. Ph.D. students must complete two full-time semesters of course work after they have earned 24 s.h. of graduate credit and have been admitted to the Ph.D. program.

Certificates
The Certificate in College Teaching requires 12 s.h. of graduate credit. The certificate program is open to all University of Iowa students working toward a Ph.D. or other terminal graduate degree. The certificate program complements discipline-oriented graduate programs and prepares students for careers in postsecondary education. It requires course work, supervised teaching experience, and preparation of a teaching portfolio. To learn more or to apply, see Graduate Certificate in College Teaching.

The Certificate in Online Teaching requires 12 s.h. of graduate credit and is offered completely online. The certificate program is open to all University of Iowa graduate degree programs and to individuals who are enrolled in the Graduate College as nondegree students. The certificate program develops students' skills in using technology to solve instructional problems associated with distance and time. The certificate's online format uses the techniques and approaches that the program teaches. To learn more or to apply, see Certificate in Online Teaching (COT).

Professional Improvement
Students who are interested in taking courses as nondegree students should apply for nondegree status to the Graduate College. They can then be admitted by a department on a nondegree basis by contacting the department. Students must be admitted to a department
in order to complete a program objective such as teacher licensure.

Extramural Education

Through the Division of Continuing Education, selected College of Education courses are offered at off-campus sites and hours outside the traditional schedule. If taken after formal admission to a specific program, some of these courses may be applied to meet residency requirements for degrees. Students who plan to complete a degree program should apply for admission to the Graduate College and satisfy all application requirements for the degree program they wish to enter.

Special regulations govern such course work. Students should obtain prior approval from their program advisor before registering in extramural courses. Students not regularly admitted to the University of Iowa also may register in extramural courses, but credit earned before admission does not count toward residency requirements.

Support Units and Resources

Belin-Blank Center for Gifted Education and Talent Development

The Connie Belin and Jacqueline N. Blank International Center for Gifted Education and Talent Development conducts research, training, and service in gifted education. It also gathers and disseminates information on the education of gifted students.

The center is located in the Blank Honors Center. Its programs and services include the Belin-Blank Fellowship Program in Gifted Education; the Honors Opportunity Program; Invent Iowa; Scholastic Art & Writing Awards; the Henry B. and Jocelyn Wallace National Research Symposium on Talent Development; the Wallace Assessment and Counseling Clinic, which specializes in twice-exceptionality; practicum and internship experiences; course work in gifted education (including state endorsement); academic talent searches for students in grades 2-9; a number of precollage programs for gifted students in grades 2-12; and programs for international students. The center also administers the Iowa Online Advanced Placement Academy.

The Belin-Blank Center administers three University-level student programs: the Iowa Talent Project, developed for minority students from gifted programs in Des Moines and Cedar Rapids, Iowa; the Belin-Blank STEM Academy, a highly selective early-entrance program for students who have completed their sophomore or junior year in high school; and the Hong Kong Scholars Program, an early decision program that admits selected high school seniors from Hong Kong to the University of Iowa.

The center also provides practicum and internship experiences for undergraduate and graduate students and coordinates course work for the Iowa Talented and Gifted Endorsement.

The Belin-Blank Center houses the Acceleration Institute, which is dedicated to the study of curricular acceleration for academically talented children.

For more information, contact the Belin-Blank Center.

Blommers Measurement Resources Library

The Paul Blommers Measurement Resources Library includes books, journals, research reports, and reference materials related to educational and psychological measurement, testing, assessment, and evaluation, as well as an extensive collection of published and unpublished tests. The library supports the teaching and research needs of faculty, staff, and students at the University of Iowa, primarily serving the College of Education.

Center for Advanced Studies in Measurement and Assessment

The Center for Advanced Studies in Measurement and Assessment (CASMA) pursues interdisciplinary research-based initiatives that lead to advances in the methods and practice of educational measurement and assessment. CASMA performs, promotes, fosters, and disseminates research in measurement and psychometric methodologies that respond to contemporary needs and initiatives in testing.

Currently, the center devotes considerable resources to research on equating, scaling, and generalizability theory; it also offers workshops and training sessions on those topics.

Extensive free suites of computer programs for equating are available on the CASMA web site. The site also features research reports and technical notes on measurement topics such as generalizability theory, equating methods, revolutions and evolutions in educational testing, and decision consistency with complex assessments.

Center for Disability Research and Education

The Center for Disability Research and Education (CDRE) provides a bridge between research and practice to facilitate interdisciplinary collaboration and implementation of evidence-based practices and to conduct research that meets the needs of individuals with disabilities.

Center for Evaluation and Assessment

The Center for Evaluation and Assessment (CEA) conducts evaluations, research studies, and professional development initiatives. The center's mission is to promote the sound use of assessment results, provide high-quality evaluation services to clients, create effective training activities for graduate students, improve the quality of evaluation theory and practice, and contribute to research on program evaluation and assessment.

The center conducts evaluations in a broad range of areas: clinical and translational science, minority recruitment and retention, delivery of social and human services, curriculum and instruction, professional training, and the impact of public policy on PK-12 education. The center's staff members consult with universities, school systems, and other policy-making organizations in Iowa and nationwide that use evaluation studies and assessments to make important decisions regarding individuals or organizations. The center also provides training and professional development in program evaluation and assessment.
Center for Research on Undergraduate Education

The Center for Research on Undergraduate Education (CRUE) is dedicated to the study of undergraduate education in America, from how academic and social experiences affect students to the methods schools use to improve students' chances for success in the classroom and beyond graduation. CRUE brings a methodologically balanced approach to the study of undergraduate education.

Collaborative Writing Consultancy

The Collaborative Writing Consultancy provides graduate students with a writing tutor who can assist with academic writing to revise, discuss, and offer a one-to-one workshop setting as graduate students prepare papers. This is a collaborative process, requiring both student and tutor to improve the paper's content.

Cooperating Schools Program

The Cooperating Schools Program (CSP) is a University-wide service that facilitates placement of research projects and service-learning projects conducted by faculty, staff, and students in public schools throughout Iowa. The program provides information to help researchers obtain permission to conduct research in Iowa schools. The Cooperating Schools Program was instituted at the request of school administrators charged with the responsibility of approving research projects in their schools.

Education Technology Center

The Education Technology Center (ETC) provides computer services to College of Education faculty, staff, and students. In addition to Internet access, services include collegiate file and application servers; standard office tools; specialized applications such as media production tools and qualitative and quantitative analysis programs; secure folders and directories; and electronic mailing lists for faculty, staff, and student groups. The ETC also provides web site and digital signage (kiosk) development for College of Education departments, offices, and groups.

The Education Technology Center provides faculty with technical and design support for online course management, research technologies, distance education, multimedia, and ePortfolio production.

Polycom videoconferencing, SMART Boards and SMART Podiums, and wireless access are available throughout the college. Every classroom and conference room has a digital presentation system, and five classrooms are outfitted for videoconferencing and distance education instruction.

Faculty members and students can check out wireless laptops, computer projectors, audience response systems (clickers), digital audio recorders, digital video cameras, iPads, and other devices from the center. In all, the College of Education supports more than 850 computers, laptops, PDAs, and smartphones as well as seven servers.

Grant and Research Services Center

The Grant and Research Services Center (GRSC) provides grant and research-related support services for the college's faculty, staff, and students. GRSC staff members help identify internal and external funding sources, prepare and submit grant proposals and application materials, provide grant accounting services, and help in the preparation of applications for Human Subjects/Institutional Research Board review. The college also provides limited funds for faculty research, professional development, and travel.

Institute on Disability and Rehabilitation Ethics

The Institute on Disability and Rehabilitation Ethics (IDARE) is a cross-disciplinary, cross-institutional online community of scholars. Its goal is to use research, education, and consultation to improve the quality of ethical practice experienced by people with disabilities who receive services from rehabilitation, health, mental health, and social service professionals. IDARE works to influence disability policy and practice development nationally and locally and to influence professional organizations' consideration of ethical issues that affect people with disabilities and other marginalized populations.

Iowa Center for Assistive Technology Education and Research

The Iowa Center for Assistive Technology Education and Research (ICATER) helps to ensure equal access and opportunities for persons with disabilities by advancing assistive technology through research, education, and service. The center collaborates with University and community programs to provide technical assistance that enhances the services and resources available to educators, service providers, and persons with disabilities. It also sponsors workshops and education programs. The center's assistive technology laboratory is available for student use, demonstrations, consultations, and research.

Iowa Testing Programs

Iowa Testing Programs (ITP) provides assessment expertise to schools in the State of Iowa and consultation to the Iowa Department of Education and to area education agencies. Its faculty and staff develop standardized educational tests, such as the widely used Iowa Assessments, for use in elementary and secondary schools, as well as other assessment tools to support instruction and learning. Iowa Testing Programs also conducts research studies in educational measurement and evaluation, publishes the results of these studies, sponsors lectures and symposia, provides consulting and in-service training to educators and school systems, and provides training experience for graduate students in educational measurement and evaluation.

Libraries

University of Iowa Libraries provides a wide variety of resources in print and online. Course reserve materials are available at the Main Library, just across the street from the College of Education; at the Hardin Library for the Health Sciences, on the health sciences campus; and at the Science Library, near the center of campus. An education librarian, whose office is in the College of Education, is available to help students with their research projects and assist faculty members and teaching assistants with their research and instructional needs.

Office of Graduate Teaching Excellence

The Office of Graduate Teaching Excellence (OGTE) is dedicated to excellence in college teaching and the preparation of future faculty. The office facilitates opportunities for research, teaching, and service. Through
the Iowa Education Fellows Program (i-fellows), OGTE develops and conducts workshops and seminars that address the developmental needs of College of Education doctoral students, from their first semester on campus through completion of their degrees. The office also guides graduate students through the process of earning a Graduate College Certificate in College Teaching.

**Office of Education Services**

The Office of Education Services assists students, faculty, staff, and the general public in graduate and undergraduate admission, Graduate College examinations, student field experiences, and teacher licensure/certification. It also serves as a liaison with other University units, including the Graduate College, the College of Liberal Arts and Sciences, the Office of Admissions, and the Office of the Registrar, and with external agencies, including the Iowa Department of Education, out-of-state teacher licensure/certification departments, and school district personnel in Iowa and outside of the state. A variety of application and information materials are available at the office and on its web site.

**Statistics Outreach Center**

The Statistics Outreach Center (SOC), a service of the College of Education and Iowa Testing Programs, helps the college's faculty, staff, and students use quantitative statistical methods to produce high-quality research. The center offers short-term consulting on statistical data analysis and grant proposals to the College of Education at no charge and provides services to departments and grants outside the college on a fee basis.

**Teacher Leader Center**

The Teacher Leader Center (TLC) helps students in the Teacher Education Program realize their career and professional goals and become leaders as 21st-century teachers. The center provides students with access to key individuals in the Teacher Education Program (TEP) and offers core student support in one central location. Its technology-enhanced Learning Commons has collaborative work spaces for students, faculty, and staff. The facility models new and innovative technologies in education and supports seminars, workshops, and presentations. Community partnerships with area education agencies, community organizations, and schools provide access to classrooms where future teachers can innovate, improve, collaborate, develop, and discover their identities as teacher leaders.

**UI Helping Professional Workshops**

The UI Helping Professionals Workshops (IHELP) program provides affordable workshops intended to enhance the personal and professional development of helping professionals. The program offers Continuing Education Units (CEU's) for community, agency, and education practitioners working with or interested in individuals, groups, families, and organizations.

**Financial Support**

College of Education students may be eligible for scholarships, awards, or graduate assistantships. Information about financial support for students is available at Graduate Student Grants & Assistantships on the college's web site. The Graduate College posts a list of open assistantships on its web site; see Graduate Assistant Job Postings.

Students interested in employment opportunities in the college's support units and special resources should contact the director of each facility and indicate their interests, their academic and experience records, and their career or degree goals at the University of Iowa.

**Graduate Assistantships**

Individual academic programs provide opportunities for teaching, research, or service assistantships as well as for fellowships and related employment opportunities. Inquiries should be addressed to the chair of the department or the director of the program in which the student believes he or she can provide service or achieve an outstanding academic record. Assistantship appointments are usually, but not always, made by the program area.

**Special Graduate Research Assistantships in Education**

The Iowa Testing Programs provides funds to support a limited number of special graduate assistantships in education, in which students do research work under the direction of a faculty member of their choice. Students must be enrolled for at least 6 s.h. but not more than 12 s.h. per semester; assistantships are for the academic year and are renewable for a limited number of years. Students admitted to or pursuing any advanced degree program offered by the College of Education are eligible to apply, provided they are committed to a professional career in the United States.

Applicants must submit transcripts of all completed college work (undergraduate and graduate), recommendation forms specific to the assistantship, and scores on the Graduate Record Exam (GRE) General Test. For assistantship application forms, contact the Iowa Testing Programs director. Application deadline is late February.

**Scholarships and Awards**

The College of Education presents a number of awards funded by donors; recipients must meet the criteria established by the donors for their awards. Recipients are presented with their award at a spring semester luncheon. For more information, see Scholarships and Awards on the college's web site.

- **Duane D. Anderson Memorial Scholarship**: awarded to a transfer student from an Iowa community college who is currently enrolled in a program in the College of Education.
- **Jack Bagford Elementary Education Scholarship**: presented to an undergraduate or graduate student in elementary education who will be student teaching during the academic year following the award; recipient must be a resident of Iowa.
- **David and Connie Belin Honors Award**: presented to graduating seniors who have completed all requirements for the Honors Opportunity Program.
- **Blommers-Hieronymus-Feldt Fellowship**: presented to doctoral students in educational measurement and statistics.
- **Lowell Brandt Rehabilitation Counseling Award**: presented to graduate students pursuing a master's degree in the rehabilitation counseling program.
Barry Bratton Award for Achievement in Design of Instructional Processes: presented to graduate students who have completed course work that reflects a commitment to the systemic design and improvement of instructional processes and materials.

Dr. Bettye M. Caldwell and Dr. Fred T. Caldwell Scholarship: presented to undergraduate students interested in pursuing careers in early childhood development including the fields of education, sociology, psychology, and other related academic programs.

Jake and Kimberly Chung Scholarship: presented to a teacher education student for their student teaching semester.

Debra Clausen Memorial Scholarship: presented to a graduate student in the College of Education who will work at the Hospital School (now the Center for Disabilities and Development) to evaluate and develop learning programs for students with mental disabilities, including Down’s Syndrome, or to students pursuing careers in special education.

T. Anne Cleary Psychological Research Scholarship: presented to students in the Department of Psychological and Quantitative Foundations.

John Leonard Davies Scholarship: presented to a student who is a first- or second-semester senior in the Department of Teaching and Learning who is viewed as being creative and having outstanding potential for success in the field of K-12 education.

Harvey H. Davis Memorial Scholarship: presented to outstanding graduate students in educational leadership with preference given to students interested in the financing of education.

Dr. Mary Agnella Gunn Memorial Scholarship: presented to worthy undergraduate or graduate students in education.

John H. Haefner Memorial Scholarship: presented to a student who will be student teaching in the area of social studies.

Gladys and Margaret Harvey Education Scholarship: presented to students who show financial need and are enrolled in the College of Education.

Thelma Grandia Scholarship: presented to undergraduate or graduate teacher education students based on financial need.

Emma E. Holmes Education Scholarship: presented to an outstanding undergraduate or graduate student in any program in the College of Education; based on merit and need, the recipient must be a U.S. citizen with first preference for a student in the top 20 percent of their class, second preference for a student with demonstrated financial need.

Albert Hood Promising Scholar Award: presented to a doctoral student in the Department of Rehabilitation and Counselor Education and a student in the higher education and student affairs program with an approved prospectus.

H.D. Hoover Fund for Excellence: presented to a graduate student working on mathematics achievement testing in the elementary grades.

Howard R. Jones Achievement Award: presented to worthy undergraduate or graduate students in education.

Kyle C. and Eula B. Jones Scholarship: presented to undergraduate and graduate students planning careers in elementary and secondary education and administration.

Charlotte and Ruby Junge Scholarship: presented to undergraduate or graduate students in elementary or secondary education who will be student teaching for a full semester.

Daniel G. Loetscher Memorial Science Education Scholarship: presented to students pursuing secondary education with an emphasis in the sciences, with preference given to those pursuing an emphasis in chemistry.

Perry Eugene McClennen Memorial Scholarship: presented to an outstanding graduate student in educational administration.

Sheila E. McFarland Memorial Scholarship: presented to a student who will be student teaching for a full semester in the area of elementary education, preference for this award will be given to an Iowa resident.

Leonard A. Miller Memorial Scholarship: presented to an outstanding first-year M.A. student in rehabilitation counseling.

Minority Student Award: presented to undergraduate or graduate students of color.

Helen Mackin Nichol Memorial Scholarship: presented to students from Iowa who are in secondary education and plan to teach and work with mentally and emotionally disturbed children.

Melvin R. Novick Award in Educational Measurement and Statistics: presented to a third- or fourth-year doctoral student in educational measurement and statistics who has at least a year of study remaining.

Paul Ostad Scholarship: presented to a full- or part-time graduate student in the College of Education whose career or scholarly interests focus on the concerns and needs of international students.

Margaret P. Park Scholarship: presented to deserving students in the College of Education with preference given to students from St. Louis County, Minnesota; Rock Island County, Illinois; or Iowa.

Guy and Gladys Peterson Scholarship: presented to students admitted to the Teacher Education Program who have completed at least 12 s.h. of education course work.

Betty Piercy Award: presented to a deserving student in the field of reading.

Ann Ramsey and Richard E. Posey Scholarship: presented to a student who is a junior pursuing a career in teaching or education.

Rolland Ray Award: presented to doctoral students completing a dissertation concerned with measurement in mathematics education, science education, social studies education, or English education.

Mary Maxine Redmond Scholarship: presented to undergraduate students from Iowa enrolled in the College of Education.

Judith Young Saunders Scholarship: presented to an undergraduate or graduate student who is pursuing a degree in teacher education, with preference given to students with severe visual impairments.
Judy Skalsky Memorial Scholarship: presented to an undergraduate or graduate student majoring in art education.

Margaret A. Sloan Scholarship: presented to undergraduate or graduate students in the College of Education, preference will be given to Iowa residents enrolled in elementary education.

Lloyd Smith Scholarship: presented to students in elementary social studies.

Franklin D. Stone and Louise P. Stone International Scholarship: presented to an outstanding international student pursuing a Ph.D. in the College of Education.

James and Coretta Stroud Fellowship: presented to an outstanding graduate student in educational psychology.

Grace Phelps Stucker Scholarship: presented to an undergraduate or graduate teacher education student.

Edgar M. and Evelyn Benzler Tanruther Scholarship: presented to undergraduate and/or graduate students in elementary education.

University High School Innovative Development in Education Award (IDEA): presented to students during their secondary student teaching experience.

Emily C. Wagner Scholarship: presented to an undergraduate student in secondary education with an English education teaching degree who will be student teaching in the academic year following the award, preference for students who are residents of Iowa with a g.p.a. of at least 3.00 and demonstrated financial need.

Erwin and Louise Wasta International Scholarship: presented to an international student in the College of Education.

Faculty

All tenure-track faculty members hold earned doctorates in their teaching fields, and many have had teaching or administrative experience in the public schools. Several hold joint appointments in the College of Liberal Arts and Sciences.

Courses

Most College of Education courses are offered by the college’s departments and programs. They are listed and described in the corresponding General Catalog sections; see the links under "Index: Academic Programs" toward the top right on this page. The college also offers the following interdepartmental courses.

Education Interdepartmental, Graduate

EALL:4130 Introduction to Grant Writing 3 s.h.
Comprehensive training in grant proposal writing; basics of project development and management; core principles for writing small and large proposals to public and private funding sources; finer points of grant writing to increase competitiveness of future proposals and applications; for students with limited grant writing experience. Same as MUSM:4150.

EALL:5150 Introduction to Educational Research 3 s.h.
Principles of empirical educational research; logic of inquiry for both quantitative and qualitative research methodologies.

Education Interdepartmental, Graduate

EALL:7387 Introduction to Online Post-Secondary Course Design and Facilitation 3 s.h.
Knowledge of distance learning and teaching at the post-secondary level; instructional design principles relevant to development of online courses.

EALL:7475 Ph.D. ePortfolio in College Teaching 3 s.h.
Framework for connecting authentic evidence of scholarly work and teaching competencies; use of advanced web and multimedia technologies to link artifacts to ePortfolio templates.

Education Honors Opportunity Program, Upper-Level Undergraduate and Graduate

EHOP:4100 Honors Seminar in Education 2 s.h.
Research in education and related professions in collaboration with a College of Education faculty member of student’s choice; preparation for senior honors project.

EHOP:4101 Senior Honors Project 1-2 s.h.
Collaboration with a faculty member on research project; written report. Prerequisites: EHOP:4100.

Departments

Educational Policy and Leadership Studies (p. 744)
Psychological and Quantitative Foundations (p. 759)
Rehabilitation and Counselor Education (p. 774)
Teaching and Learning (p. 793)

Majors Offered with Other Colleges

Science Education (p. 788)

Certificate Programs

Multicultural Education and Culturally Competent Practice (p. 757)
Online Teaching (p. 758)
UI REACH (p. 826)
Educational Policy and Leadership Studies

Chair
• Debora L. Liddell

Program coordinator, educational leadership
• Liz Hollingworth

Program coordinator, higher education and student affairs
• Jodi Linley

Program coordinator, schools, culture, and society
• Christine A. Ogren

Graduate degrees: M.A. in educational policy and leadership studies; Ed.S. in educational policy and leadership studies; Ph.D. in educational policy and leadership studies

Faculty: http://www.education.uiowa.edu/epls/people
Web site: http://www.education.uiowa.edu/epls/

The Department of Educational Policy and Leadership Studies offers academic programs that prepare administrators, professional personnel, teachers, and researchers in the fields of educational leadership, higher education and student affairs, and schools, culture, and society. The department also offers joint programs with other College of Education departments and with other University of Iowa colleges.

Graduate Programs of Study
• Master of Arts in educational policy and leadership studies
• Specialist in Education in educational policy and leadership studies
• Doctor of Philosophy in educational policy and leadership studies

The department offers graduate degree programs in three major areas within educational policy and leadership studies:

Educational leadership (offered in the M.A., Ed.S., and Ph.D.), including an interdisciplinary program in school curriculum and assessment policy (offered in the Ed.S.);
Higher education and student affairs (offered in the M.A., Ed.S., and Ph.D.); and
Schools, culture, and society (offered in the M.A. and Ph.D.).

The areas are described below under "Graduate Study Areas," followed by information about each degree program.

Applicants for admission to University of Iowa graduate degree programs must meet the admission requirements of the Graduate College; see the Manual of Rules and Regulations of the Graduate College.

Graduate Study Areas

Educational Leadership
Study in educational leadership prepares individuals for leadership positions. In addition to graduate degree programs, the area includes principal licensure and superintendent endorsement.

Licensure
To be eligible for recommendation by the University of Iowa for licensure in Iowa as a principal or superintendent/area education agency administrator, students must complete the appropriate program. The specific requirements for each program are available from the Department of Educational Policy and Leadership Studies and the Office of Education Services.

Students who hold an M.A. must satisfy all core requirements and must complete at the University of Iowa the minimum semester-hour program for each licensure level they seek. Because each administrative license has specific requirements, candidates are required to plan their programs with their advisors’ approval.

Superintendent Endorsement
The superintendent endorsement curriculum is designed to prepare individuals for licensure as a school superintendent (pre-K-12) as well as for other school district leadership positions; for the chief administrator position in Iowa’s area education agencies (AEA) as well as other AEA leadership positions; and for leadership positions in state or federal departments of education and related agencies.

The superintendent endorsement requires a total of 30 s.h. of credit.

Higher Education and Student Affairs
Advanced study in higher education and student affairs draws upon diverse perspectives from varied disciplines and professional fields to analyze critical issues and policies and their effects on students, faculty, administrators, staff, and other members of the higher education community. It also explores the complex interactive relationships among institutions of higher education, the external environment, and society at large.

Graduate degree programs in higher education and student affairs prepare professionals and scholar practitioners to serve as administrators, researchers, educators, and analysts in institutions of higher and postsecondary education and in related public and private agencies. The programs provide opportunities for concentrated study in student affairs administration; higher education policy and leadership; teaching, learning, and curriculum; and cultural foundations of higher education.

Schools, Culture, and Society
Schools, culture, and society is an interdisciplinary area that enhances students’ ability to analyze the influence of social, historical, and philosophical factors that frame contemporary issues in the formal social enterprise of education.

M.A.: Educational Leadership
The Master of Arts program in educational leadership requires a minimum of 36 s.h. of graduate credit and is
offered without thesis. The program prepares individuals for appointments as school principals and for positions in area education agencies and state departments of education.

**CORE REQUIREMENTS**

With the aid of an advisor, each M.A. student prepares a plan of study that includes the following core requirements.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EPLS:6201</td>
<td>Foundations of School Administration</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>EPLS:6236</td>
<td>Administration of Students with Special Needs</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>EPLS:6242</td>
<td>Research for Effective School Leaders</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>EPLS:6260</td>
<td>Contemporary Management Strategies for the Pre-K-12 Principal</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>EPLS:6285</td>
<td>School and Community Relationships</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>EPLS:6298</td>
<td>Legal Aspects of School Personnel</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>EPLS:6381</td>
<td>Analysis and Appraisal of Curriculum</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>EPLS:6383</td>
<td>Supervision and Evaluation</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

For Iowa licensure as a principal, students must meet the human relations requirement of the State of Iowa. Students must complete the core requirements listed above and the following required clinical courses.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EPLS:6400</td>
<td>Early Childhood Leadership Clinical</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>EPLS:6401</td>
<td>Elementary Leadership Clinical</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>EPLS:6402</td>
<td>Secondary Leadership Clinical</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>EPLS:6403</td>
<td>Special Education Leadership Clinical</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

Students earning an M.A. without principal licensure are not required to complete the clinical courses. Instead, they complete a series of electives approved by their advisors.

**COMPREHENSIVE EXAMINATION**

The M.A. comprehensive examination for students earning principal licensure consists of a three-hour examination. Students earning an M.A. without licensure complete a six-hour comprehensive examination consisting of two three-hour written exams. Students must be registered in the Graduate College during their comprehensive examination semester if they plan to graduate at the end of that semester.

**ADMISSION**

Applicants to the M.A. program in educational leadership must meet the admission requirements of the Graduate College. Admission decisions are made through a faculty review process. Factors considered include recommendations, grade-point average, Graduate Record Examination (GRE) General Test scores, an essay demonstrating writing ability, and other evidence of academic ability and professional promise.

**Ed.S.: Educational Leadership**

The Specialist in Education program in educational leadership requires 36 s.h. of graduate credit. The program prepares candidates to be superintendents in Iowa or to hold other district-level leadership positions in K-12 school districts. It also prepares them for appointments as area education agency chief administrators and for jobs in state or federal departments of education.

Students in the Ed.S. program must have an Iowa administration license. They obtain the superintendent endorsement (State of Iowa endorsement 171) upon completing the required Ed.S. course work.

Ed.S. students must complete 26 s.h. of course work. Many educational leadership courses are offered by distance education; see ISIS for information about courses offered during current semesters. They also must complete 10 s.h. of clinical work and must maintain an ePortfolio. The Ed.S. program culminates with the student's presentation of the ePortfolio to his or her committee.

**ADMISSION**

Applicants to the Ed.S. program in educational leadership must meet the admission requirements of the Graduate College and of the educational leadership program. Required application materials include transcripts, official Graduate Record Examination (GRE) General Test scores, three letters of recommendation, and a personal statement of career goals. Admission is based on grade-point average and GRE scores, promise for scholarly and professional growth, and recommendations. Complete applications are reviewed as they are received.

**Ph.D.: Educational Leadership**

The Doctor of Philosophy program in educational leadership requires a minimum of 90 s.h. of graduate credit. The program prepares scholarly professionals for leadership positions in a wide range of educational and public sector settings. Ph.D. students acquire strong backgrounds in leadership, policy, and research. They equip themselves to discover, integrate, and apply knowledge as transformational leaders.

The Ph.D. in educational leadership requires the following work.

- **Common courses**: 12 s.h.
- **Cognates**: 9 s.h.
- **Electives**: 29 s.h.
- **Concentration area courses**: 12 s.h.
- **Research**: 18 s.h.

Students also complete the comprehensive examination and a dissertation, described below.

Many educational leadership courses are offered by distance education; see ISIS for information about courses offered during current semesters.

**REQUIRED RESEARCH COURSES**

All educational leadership Ph.D. students must complete EALL:5150 Introduction to Educational Research during the first year of their Ph.D. program. They also must complete a minimum of 15 s.h. in qualitative and quantitative course work, with at least 9 s.h. from one area (qualitative or quantitative) and at least 6 s.h. from the other. Students select from courses listed at Ph.D. Research Requirements.

**COMPREHENSIVE EXAMINATION**

Ph.D. students must satisfactorily complete a written take-home comprehensive examination consisting of three parts. The first part covers the student's major area of study, and the second covers two additional concentration areas. The third is on the student's outside area of
study and is prepared by faculty members outside the Department of Educational Policy and Leadership Studies. The written exams are followed by an oral examination.

**DISSERTATION**
All students must write a dissertation based on an original research project in an area of educational leadership. Students must earn 10 s.h. of credit for dissertation research. The doctoral program culminates with a final oral defense of the dissertation. Students must be registered at the University of Iowa during the session in which they graduate.

**ADMISSION**
Applicants to the Ph.D. program in educational leadership must meet the admission requirements of the Graduate College and of the educational leadership program. They also must satisfy the residency requirement of two full-time (at least 9 s.h.) registrations. Required application materials include transcripts, official Graduate Record Examination (GRE) General Test scores, three letters of recommendation, and a personal statement of career goals. Admission is based on grade-point average and GRE scores, promise for scholarly and professional growth, and recommendations. Complete applications are reviewed as they are received.

**Ed.S.: School Curriculum and Assessment Policy**
The Specialist in Education program in school curriculum and assessment policy requires 36 s.h. of graduate credit beyond the master's degree (required credit may vary depending on the student’s academic background, experiences, needs, and interests).

The interdisciplinary program trains graduate students to become school leaders who know how to use assessment information for accountability purposes and curriculum evaluation. The program offers concentrations in policy, measurement and statistics, and curriculum and draws on course work from across the College of Education. Graduates are qualified to serve as educational leaders in the areas of school policy, assessment, and curriculum at federal, state, and district levels.

For more information on the educational leadership programs, see Department of Educational Policy and Leadership Studies.

**M.A.: Higher Education and Student Affairs**
The Master of Arts program in higher education and student affairs requires a minimum of 40 s.h. of graduate credit. The program prepares graduates for entry-level and midlevel positions in two- and four-year institutions.

Students choose one of two tracks when they apply to the program: the student affairs track or the higher education policy/administration track. Through these two tracks, the program prepares individuals for positions in advising, programming, administration, assessment, management, and policy in higher education settings.

**EXAMINATION**
Students complete a take-home written examination based on the program core and their chosen track.

**ADMISSION**
Applicants to the M.A. program in higher education and student affairs must meet the admission requirements of the Graduate College. Admission is based on grade-point average, Graduate Record Examination (GRE) General Test scores, and promise for professional growth. Transcripts, GRE scores, a résumé or curriculum vita, three letters of recommendation, and a statement of educational goals are required. Application deadline is December 15 for admission the following fall. Applicants who are recommended for admission are invited to come to campus on spring Campus Visit Day, during which they interview for assistantships. Full-time M.A. students must be employed at an approved site.

**Ed.S.: Higher Education and Student Affairs**
The Specialist in Education program in higher education and student affairs requires 60 s.h. of graduate credit. The program provides advanced graduate study in administration, policy studies, and specializations developed in consultation with an advisor. The Ed.S. also may be awarded upon completion of a joint program of graduate work in higher education and an academic field, or upon completion of a higher education sequence following a master's degree program in a different field. Students must meet the Graduate College residency requirement.

**REQUIRED COURSES**
The Ed.S. program of study must include the following:
- at least 18 s.h. in professional education and related fields;
- at least 28 s.h. in the student’s specialization area;
- 10 s.h. of electives, all approved by a student's advisor; and
- 4 s.h. of research credit in EPLS:7395 Educational Specialist Research.

Depending on the student’s career goals, the program may include an appropriate structured and supervised internship, determined in consultation with the advisor.

**COMPREHENSIVE EXAMINATION**
A culminating experience is required of all students, the nature of which will be contracted with the advisor. An oral examination of the culminating experience may be required.

**RELATED FIELD**
Students majoring in another field who want to complete a related field in higher education and student affairs should consult with a higher education and student affairs faculty member early in their study. Plans of study are developed individually.

**ADMISSION**
Applicants to the Ed.S. program in higher education and student affairs must meet the admission requirements of the Graduate College. Admission is based on grade-point average, Graduate Record Exam (GRE) General Test scores, and promise for professional growth. Transcripts, GRE scores, three letters of recommendation, and a statement of educational goals are required.
Ph.D.: Higher Education and Student Affairs

The Doctor of Philosophy program in higher education and student affairs requires 90 s.h. of graduate credit. The program prepares faculty and scholarly practitioners for leadership positions in student affairs and academic administration and for positions as graduate faculty members, leaders in conducting research about college students and higher education, policy analysts in postsecondary institutions and in public or private agencies, and teachers and academic leaders at two-year and four-year colleges.

The program integrates the academic experience with the cocurricular learning experiences of students and studies the outcomes of both. The curriculum is organized around three core areas: higher education administration and policy; teaching, learning, and the college experience; and diversity, equity, and foundations of higher education. Students take courses in each area and specialize in one.

The higher education administration and policy area studies organizational policy, leadership, and change. It helps administrators develop expertise in planning, evidence-based decision making, and effective leadership and organizational management. Individuals interested in enrollment management and institutional research should find this area appealing.

The teaching, learning, and the college experience area studies college teaching and learning and the ways in which college affects students. It enables educators to become more effective in designing, implementing, and evaluating powerful curricular and cocurricular initiatives. It should appeal to teaching faculty, institutional researchers, faculty development professionals, and leaders of student success initiatives.

The diversity, equity, and foundations of higher education area helps educators prepare to lead social change within their organizations and to facilitate difficult dialogues designed for interpersonal growth and development. It should appeal to chief diversity officers and other administrators called upon to develop curricula around social justice and to individuals interested in the empirical study of diversity in higher education.

The 90 s.h. required for the Ph.D. includes a substantive common core (24 s.h.), a research core (18 s.h.); a specialization (12 s.h.); graduate electives, including transfer course work (24 s.h.); and dissertation research (12 s.h.).

To fulfill the Graduate College residency requirement, doctoral students must enroll for a minimum of 9 s.h. in each of two semesters or a minimum of 6 s.h. in each of three semesters.

SUBSTANTIATIVE COMMON CORE

The substantive common core provides foundational understanding of higher education and general knowledge that all students must master, regardless of their career goals and interests. All courses in the core (24 s.h.) must be completed at the University of Iowa.

- EPLS:6216 Finance in Higher Education 3 s.h.
- EPLS:6220 History of Higher Education 3 s.h.
- EPLS:6221 The College Curriculum 3 s.h.

RESEARCH CORE

The research core (18 s.h.) assures that the student achieves scholarly autonomy and initiative.

Basic Research Methods (6 s.h.)

This course is required.

- EPLS:6206 Research Process and Design 3 s.h.

One of these:

- EPLS:7373 Qualitative Research Design and Methods (strongly recommended)
- EDTL:7070 Introduction to Qualitative Methods in Literacy Research
- PSQF:7331 Seminar: Educational Psychology I—Current Topics (when topic is qualitative educational research methods)
- RCE:7338 Essentials of Qualitative Inquiry 3 s.h.

Statistics/Linear Regression (9 s.h.)

All of these (taken in this order):

- EPLS:5240 Topics in Education (when topic is data coding and management) 2 s.h.
- PSQF:6243 Intermediate Statistical Methods 4 s.h.
- EPLS:6370 Quantitative Methods for Policy Analysis 3 s.h.

Advanced/Specialized Research Methods (3 s.h.)

Students should work with their advisor to choose one course appropriate to their dissertation design.

Qualitative Methods

- EPLS:5240 Topics in Education (when topic is introduction to historical methodology) 3 s.h.
- EPLS:7392 Mixed Methods Research 3 s.h.
- EDTL:7071 Critical Discourse Analysis in Educational Research 3 s.h.
- EDTL:7072 Advanced Methods of Literacy Research: Qualitative Data Analysis and Reporting 3 s.h.
- EDTL:7073 Ethnographic Methods, Theories, and Texts 3 s.h.
- RCE:7444 Qualitative Research in the Multicultural Context 3 s.h.

Another comparable research methods course approved by advisor and higher education and student affairs program

Quantitative Methods

- EPLS:5240 Topics in Education (when topic is multilevel modeling) 3 s.h.
- EPLS:6209 Survey Research and Design 3 s.h.
- POLI:7003 Advanced Methodology 4 s.h.
- PSQF:6246 Design of Experiments 4 s.h.
SOC:7170 Advanced Statistical Modeling of Data 3 s.h.
SOC:7180 Structural Equation Modeling 3 s.h.

Another comparable research methods course approved by advisor and higher education and student affairs program

SPECIALIZATION AREA
The specialization gives students the opportunity to develop expertise in one area. Most students complete the common core before declaring one of the following three specializations: higher education administration and policy; teaching, learning, and the college experience; or diversity, equity, and foundations of higher education. Each specialization has its own course requirements and options.

GRADUATE ELECTIVES
Students choose 24 s.h. of elective graduate course work in consultation with their advisors. A student and his or her advisor may determine that some of the graduate elective work may be drawn from appropriate previous graduate course work that complements other aspects of the student's doctoral program.

COMPREHENSIVE EXAMINATION
The Ph.D. comprehensive examination consists of a set of take-home questions with a limited time to respond. Questions are based on the substantive core and a student's concentration. The written examination is followed by an oral examination.

DISSERTATION
The dissertation is a major research study planned in collaboration with the student's advisor. Students must write a formal dissertation proposal and submit it for approval, first to their advisor and then to the members of their doctoral committee. Students and their advisors determine when the proposal is complete. Students must earn 12 s.h. of dissertation research credit. The doctoral program culminates with a final oral defense of the dissertation.

Students must be registered at the University of Iowa each fall and spring semester from the semester in which they complete their comprehensive examination through the semester in which they defend their dissertation and graduate.

ADMISSION
Applicants to the Ph.D. program in higher education and student affairs must meet the admission requirements of the Graduate College. Each applicant must submit a personal statement explaining his or her professional goals, experiences, and research plans; undergraduate and graduate grade-point averages; undergraduate and graduate transcripts; three letters of recommendation; a résumé or curriculum vita, and scores on the Graduate Record Exam (GRE) General Test. Application deadline is December 1 for admission the following fall.

For more information on higher education and student affairs programs, see Department of Educational Policy and Leadership Studies.

M.A.: Schools, Culture, and Society
The Master of Arts program in schools, culture, and society requires a minimum of 32 s.h. of graduate credit and is offered without thesis. The program develops students' ability to analyze the influence of social, historical, and philosophical factors that frame contemporary issues in education.

M.A. students complete at least 24 s.h. in schools, culture, and society courses in three disciplinary areas: philosophy, history, and sociology. They earn 12 s.h. in one of the disciplinary areas and 6 s.h. in each of the other two areas. The remaining 8 s.h. of course work must be in a concentration area appropriate to the student's career and academic goals.

Students must satisfactorily complete a six-hour comprehensive examination covering the program's three disciplinary areas and the student's concentration area. The examining committee may elect to hold an oral examination after the exam.

ADMISSION
Applicants to the M.A. program in schools, culture, and society must meet the admission requirements of the Graduate College. A personal interview with one or more members of the program's faculty is recommended. Undergraduate and/or graduate emphases in education, sociology, and the humanities (philosophy, history, and so forth) provide good background for graduate study of schools, culture, and society, although other emphases also may be useful. Each applicant must submit a personal statement explaining his or her professional goals, experiences, and research plans; undergraduate and graduate grade-point averages; undergraduate and graduate transcripts; three letters of recommendation; a résumé; and scores on the Graduate Record Exam (GRE) General Test. Application deadline is February 15 for admission the following fall.

Ph.D.: Schools, Culture, and Society
The Doctor of Philosophy program in schools, culture, and society requires a minimum of 90 s.h. of graduate credit. The program develops students' ability to analyze the influence of social, historical, and philosophical factors that frame contemporary issues in education.

Ph.D. students complete a common core (12 s.h.), a disciplinary foundation (12 s.h.), an interdisciplinary focus (9 s.h.), cognate courses (27 s.h.), research tools (18 s.h.), and a dissertation (12 s.h.).

COMMON CORE
All Ph.D. students in schools, culture, and society must complete all four courses in the common core (12 s.h.).

EPLS:5102 History of American Education 3 s.h.
EPLS:5126 Twentieth-Century Educational Movements 3 s.h.
EPLS:5130 Sociology of Education 3 s.h.
EPLS:5156 Philosophies of Education 3 s.h.
DISCIPLINARY FOUNDATION

Students choose one of three disciplinary foundation areas: sociology, history, or philosophy. They complete 12 s.h. in the area by taking three courses offered by the Department of Educational Policy and Leadership Studies (prefix EPLS) and one course offered by the corresponding department in the College of Liberal Arts and Sciences: sociology (prefix SOC), history (prefix HIST), or philosophy (prefix PHIL). The following lists provide examples of courses appropriate for the three disciplinary foundation areas.

Sociology
EPLS:5131 Race, Class, and Gender Inequalities in Education 3 s.h.
EPLS:5134 Education and the World of Work 2-3 s.h.
EPLS:5142 Sociology of Higher Education 3 s.h.
EPLS:5210 Education and Social Change 2-3 s.h.
EPLS:5240 Topics in Education (when topic is sociology of education) 2-3 s.h.

History
EPLS:5123 History of Ethnic/Minority Education 2-3 s.h.
EPLS:5240 Topics in Education (when topic is history of education) arr.
EPLS:6220 History of Higher Education 3 s.h.
EPLS:6237 History of the Teaching Profession 3 s.h.
EPLS:6238 Gender and Education in Historical Perspective 3 s.h.

Philosophy
EPLS:5155 Critical Thinking 3 s.h.
EPLS:5157 Ethics in Education 3 s.h.
EPLS:5158 John Dewey and Education 2-3 s.h.
EPLS:5240 Topics in Education (when topic is philosophy of education) arr.
EPLS:6358 Seminar in the Philosophy of John Dewey 3 s.h.

INTERDISCIPLINARY FOCUS

Students choose one of two interdisciplinary focus areas: diversity and equity, or policy contexts. They take three courses in that area (total of 9 s.h.) chosen from the corresponding list below. At least two of the courses (6 s.h.) must be from outside their disciplinary foundation area (see "Disciplinary Foundation" above).

Diversity and Equity
EPLS:5104 Education in the Third World 2-3 s.h.
EPLS:5123 History of Ethnic/Minority Education 2-3 s.h.
EPLS:5154 Education, Race, and Ethnicity 2-3 s.h.
EPLS:5157 Ethics in Education 3 s.h.
EPLS:6237 History of the Teaching Profession 3 s.h.
EPLS:6238 Gender and Education in Historical Perspective 3 s.h.
EPLS:6275 Diversity and Equity in Higher Education 3 s.h.
A relevant course from another department, with advisor's approval

Policy Contexts
EPLS:5134 Education and the World of Work 2-3 s.h.
EPLS:5157 Ethics in Education 3 s.h.
EPLS:5210 Education and Social Change 2-3 s.h.
EPLS:6225 Introduction to Public Policymaking 3 s.h.
EPLS:6228 Policy Design and Implementation 2-3 s.h.
EPLS:6237 History of the Teaching Profession 3 s.h.
EPLS:6270 Policy and Politics of Leadership 3 s.h.
One relevant course from another department, with advisor's approval

COGNATE COURSES

Students must complete at least 27 s.h. of additional graduate-level course work in a field or fields that are relevant to their scholarly and professional goals. Students commonly complete some or all of the 27 s.h. with relevant graduate-level course work from other University of Iowa programs or with approved transfer credit from other institutions. A student's advisor, in consultation with other faculty members in the program, determine which course work to accept.

RESEARCH TOOLS

Students who have taken courses that may be equivalent to EPLS:6206 Research Process and Design, EPLS:7373 Qualitative Research Design and Methods, PSQF:6243 Intermediate Statistical Methods, or SOC:6170 Introduction to Sociological Data Analysis may submit the course syllabus to their advisor. The advisor will share the syllabus with a committee of the schools, culture, and society faculty, who will determine whether the alternate course work meets the benchmarks of the required course. If so, the student may substitute an advanced and/or specialized course for the basic or intermediate course.

All students must take at least 18 s.h. in research methods as part of their schools, culture and society Ph.D. program.

Basic Research Methods (6 s.h.)
This course is required.
EPLS:6206 Research Process and Design 3 s.h.
One of these:
EPLS:7373 Qualitative Research Design and Methods (strongly recommended) 3 s.h.
EDTL:7070 Introduction to Qualitative Methods in Literacy Research 3 s.h.
PSQF:7331 Seminar: Educational Psychology I—Current Topics (when topic is qualitative educational research methods) 3 s.h.
RCE:7338 Essentials of Qualitative Inquiry 3 s.h.

Intermediate Statistics and Linear Regression (9 s.h.)
All of these:
EPLS:5240 Topics in Education (when topic is data coding and management) 2 s.h.
EPLS:6370 Quantitative Methods for Policy Analysis 3 s.h.
PSQF:6243 Intermediate Statistical Methods 4 s.h.

Advanced and/or Specialized Research Methods (3 s.h.)
Students choose one course appropriate to their dissertation design in consultation with their advisor.
Qualitative or Non-Quantitative Courses

EPLS:5195 Research in Cross-Cultural Settings 3 s.h.
EPLS:5240 Topics in Education (when topic is historical methodology in education or analysis of philosophical argumentation) 3 s.h.
EPLS:7392 Mixed Methods Research 3 s.h.
EDTL:7071 Critical Discourse Analysis in Educational Research 3 s.h.
EDTL:7072 Advanced Methods of Literacy Research: Qualitative Data Analysis and Reporting 3 s.h.
EDTL:7073 Ethnographic Methods, Theories, and Texts 3 s.h.
EDTL:7751 Advanced Qualitative Data Analysis 3 s.h.
HIST:7197 The Art and Craft of Historical Writing arr.
HIST:7199 History Workshop: Theory and Interpretation arr.
PSQF:6265 Program Evaluation 3 s.h.
RCE:7444 Qualitative Research in the Multicultural Context 3 s.h.

Quantitative Courses

EPLS:5176 Demographic Techniques for Educational Research 3 s.h.
EPLS:5240 Topics in Education (when topic is multilevel modeling) 3 s.h.
EPLS:6209 Survey Research and Design 3 s.h.
POLI:7003 Advanced Methodology 4 s.h.
PSQF:6249 Factor Analysis and Structural Equation Models 3 s.h.
SOC:5160 Research Design and Methods 3 s.h.
SOC:7170 Advanced Statistical Modeling of Data 3 s.h.
SOC:7180 Structural Equation Modeling 3 s.h.

Students that want to enroll in a course that is not listed above, and wish to receive credit toward their program requirements, must obtain prior approval from their advisor and from the schools, culture, and society program.

COMPREHENSIVE EXAMINATION

The comprehensive examination consists of three take-home exams, each with a maximum of 12 pages. The first exam covers the common core, the second covers the student's interdisciplinary focus area, and the third covers the student's disciplinary foundation area.

DISSERTATION

After completing the comprehensive examination, Ph.D. students write a formal dissertation prospectus and submit it for approval first to their dissertation advisor and then to the members of their dissertation committee. The dissertation prospectus must be formally approved by the dissertation advisor and the dissertation committee before a student may begin his or her dissertation research.

Students must earn 12 s.h. of dissertation research credit. The dissertation process culminates with a final oral defense of the dissertation. Students must register at the University of Iowa each fall and spring semester until the dissertation is successfully defended and the Ph.D. is awarded.

ADMISSION

Applicants to the Ph.D. program in schools, culture, and society must meet the admission requirements of the Graduate College. A personal interview with one or more members of the program's faculty is recommended. Undergraduate and/or graduate emphases in education, sociology, and the humanities (philosophy, history, and so forth) provide good background for graduate study of schools, culture, and society, although other emphases also may be useful. Each applicant must submit a personal statement explaining his or her professional goals, experiences, and research plans; undergraduate and graduate grade-point averages; undergraduate and graduate transcripts; three letters of recommendation; and scores on the Graduate Record Exam (GRE) General Test. Admission is for fall semester entry. Application deadline is January 15 for admission the following fall.

For more information on schools, culture, and society programs, see Department of Educational Policy and Leadership Studies.

Courses

Lower-Level Undergraduate

EPLS:1029 First-Year Seminar 1 s.h.
Small discussion class taught by a faculty member; topics chosen by instructor; may include outside activities (e.g., films, lectures, performances, readings, visits to research facilities). Requirements: first- or second-semester standing.

EPLS:2098 The Student Affairs Profession 3 s.h.
Introduction to field of student affairs in context of higher education; focus on foundations of profession, including a brief history of field, professional associations, institutional differences, professional and ethical standards, functional areas in higher education, student learning and developmental theory, overview of graduate preparation, and current topics.

Upper-Level Undergraduate and Graduate

EPLS:3000 Foundations of Education 3 s.h.
Overview of American education, preschool through secondary; aims, history, philosophy of education; professional ethics, legal responsibilities; school curriculum, organization, finance, school law, political and social issues.

EPLS:4081 ePortfolio Production 1-2 s.h.
Experience producing an ePortfolio and uploading it to the Internet; practical experience using digital tools, content and design related to ePortfolio production; experience using a web browser and access to the Internet and to a digital camera or scanner. Requirements: able to perform basic computer functions and use a World Wide Web browser. Same as PSQF:4081, EALL:4081, EDTL:4081, RCE:4081.

EPLS:4110 Administration and Policy in Gifted Education 2 s.h.
Policy, administrative, evaluation issues in developing and maintaining gifted programs in a school setting; participants develop gifted program and policies for a school; for school executives and coordinators of gifted programs.

**EPLS:4111 Evaluation of Gifted Programs** 1 s.h.
Fundamentals of program evaluation essential for exemplary gifted programs.

**EPLS:4113 Staff Development for Gifted Programs** 1 s.h.
Planning, content, and delivery of staff development regarding gifted students and their needs.

**EPLS:4150 Leadership and Public Service I** 3 s.h.
Preparation for providing public service to a local community; leadership skills for effective mentoring of children in grades 6-10.

**EPLS:4151 Leadership and Public Service II** 2 s.h.
Preparation to provide leadership and public service to a local community agency; being a leader and a public servant in the context of societal oppressions such as racism, sexism, able-bodyism; part of the human relations minor. Prerequisites: EPLS:4150.

**EPLS:4180 Human Relations for the Classroom Teacher** 3 s.h.
Influence of social factors such as discrimination, diversity, equity, racism, sexism, and ethnic and socioeconomic pluralism on American schools and classrooms; for teacher education candidates. GE: Values, Society, and Diversity.

**Graduate**

**EPLS:5100 Issues and Policies in Higher Education** 3 s.h.
Development of the idea of a university; selected functions, issues, policies of American higher education.

**EPLS:5102 History of American Education** 3 s.h.
Purposes of public education, diversity, and control of schooling from a historical perspective; emphasis on conflicting interpretations of pivotal events and educational movements; connections between educational policies and larger historical developments.

**EPLS:5104 Education in the Third World** 2-3 s.h.
Educational implications of various development issues, including role of media, and multinational corporations and foreign aid; educational dilemmas currently facing Third World governments.

**EPLS:5116 Characteristics of Effective Instruction: Assessment for Learning** 3 s.h.
Professional development sequence designed for practicing teachers to develop conceptual knowledge and understanding of Assessment for Learning implementation and practice, a key component of effective instruction; training modules are aligned with the Iowa Department of Education’s “Characteristics of Effective Instruction,” with videos of best practice across the state.

**EPLS:5123 History of Ethnic/Minority Education** 2-3 s.h.
Educational histories of American ethnic and minority groups; comprehensive understanding of American educational history, context for contemporary educational policy discussions.

**EPLS:5126 Twentieth-Century Educational Movements** 2-3 s.h.
Current educational policy debates concerning diversity and equity, historical roots of these policies; historical context for 20th-century equal education opportunity movements.

**EPLS:5130 Sociology of Education** 3 s.h.
Effects of school and school organization on educational outcomes; course-taking patterns and tracking, desegregation, differences in school sector; focus on entire span of student's academic career; examination of school and organizational effects at the primary, secondary, and postsecondary levels of education. Same as SOC:5130.

**EPLS:5131 Race, Class, and Gender Inequalities in Education** 3 s.h.
Role of ascribed characteristics (e.g., race, class, gender) on educational opportunities and outcomes; achievement gaps, school desegregation, social and cultural capital, peer influence, family attributes, neighborhood influence, influence of significant others, course-taking patterns, and educational destinations. Same as SOC:5165.

**EPLS:5134 Education and the World of Work** 2-3 s.h.
Relationship between education and work in individual and organizational behavior, and between educational and economic systems; economics, psychology, sociology, education.

**EPLS:5142 Sociology of Higher Education** 3 s.h.
Sociological approach to study of higher education; issues of inequality and stratification in higher education; focus on relationship between higher education and larger economic and demographic processes; college access, college destinations, attainment, and returns to a college degree. Same as SOC:5680.

**EPLS:5150 Sociology of Education** 3 s.h.
Role of education in ethnic and racial groups in contemporary and/or historical context. GE: Values, Society, and Diversity.

**EPLS:5155 Critical Thinking** 3 s.h.
Formal and informal logic and probabilistic reasoning; focus on construction and critical analysis of arguments; introduction for students planning research in social foundations.

**EPLS:5156 Philosophies of Education** 2,3,5 s.h.
Principal educational philosophers and philosophies that have influenced Western education; emphasis on how philosophical ideas and conflicts have shaped the educational scene.

**EPLS:5157 Ethics in Education** 3 s.h.
Major theories of the nature of ethical action and of value judgment; theoretical accounts related to the practical decision making contexts of teaching.
EPLS:5158 John Dewey and Education  2-3 s.h.
Dewey's philosophy of instrumentalism, with emphasis on his theories of knowledge, valuation, aesthetics, especially as applied to educational theory and practice.

EPLS:5165 Introduction to Program and Project Evaluation  3 s.h.
Skills and knowledge required for conducting evaluations of products, projects, and programs; recent scholarship on evaluation and project management. Same as PSQF:5165.

EPLS:5176 Demographic Techniques for Educational Research  3 s.h.
Basic demographic concepts, techniques, resources; life table analysis, enrollment projections, demographic measurement, shift-share analysis.

EPLS:5195 Research in Cross-Cultural Settings  3 s.h.
Cultural, psychological, logistical issues in conducting research in foreign settings; development of a research plan, recent debates in ethnographic research literature.

EPLS:5210 Education and Social Change  2-3 s.h.
Role of educational institutions, in connection with political and economic structures, in the process of social change; illumination of theories of social change through case studies of educational systems in both less-developed and industrialized nations. Same as SOC:5810.

EPLS:5230 Alternative Models of Schooling  2-3 s.h.
Popular alternatives to K-12 and postsecondary education; homeschooling, boarding schools, charter schools, magnet schools; construction of a conceptual framework for understanding alternatives.

EPLS:5240 Topics in Education  arr.
Seminar for intensive study of one problem, issue, or work field.

EPLS:5245 The American Professoriate  3 s.h.
Research on college and university faculty members; perspectives on faculty careers, values, beliefs, role in shared governance; tenure process and policies; issues unique to faculty members of color and women faculty members.

EPLS:5247 Multiculturalism in Higher Education  3 s.h.
Theory and application of multicultural competency in higher education.

EPLS:5250 Introduction to Student Affairs  3 s.h.
Foundations of student affairs work; overview of institutional cultures, legal issues, ethical principles, standards of practice in student affairs.

EPLS:5251 College Students and Their Environments  3 s.h.
Characteristics of college students and issues they face; students' institutional, social, cultural environments; impact of environments on student learning, development.

EPLS:5252 Administration of Higher Education and Student Affairs  3 s.h.
Administrative structures and processes in higher education settings. Requirements: higher education and student affairs major.

EPLS:5253 Assessment in Higher Education and Student Affairs  3 s.h.
Theories, practices, and issues relevant to assessment of student outcomes and institutional effectiveness in higher education; basic overview of research, assessment, and evaluation; elements of assessment design, including methods for data collection and analysis; relevant ethical and political dilemmas; practical assessment activities. Requirements: M.A. standing in higher education and student affairs program.

EPLS:5278 Helping Skills in Student Affairs Work  3 s.h.
Development of ability to identify, understand, and intentionally apply the active attending and influencing skills; readings and class presentations.

EPLS:6201 Foundations of School Administration  3 s.h.
Organization and administration of American public education; principles and concepts of leadership and organizations; socioeconomic, political, and professional factors relating to education and school administration.

EPLS:6202 Information Resources  3 s.h.
Research strategies, information literacy skills, University of Iowa Libraries and other sources for research.

EPLS:6206 Research Process and Design  3 s.h.
Research process, with emphasis on fundamentals of experimental design, internal and external validity, correlational designs, and statistical inference.

EPLS:6209 Survey Research and Design  3 s.h.
Survey design and implementation; writing and evaluation of survey questions; error in survey research; techniques to reduce error; sampling; postcollection processing of survey data. Prerequisites: EPLS:6206 or PSQF:4143. Same as PSQF:6209.

EPLS:6216 Finance in Higher Education  3 s.h.
Theory, research, policy, and practice related to public and private funding of higher and postsecondary education.

EPLS:6217 Theory and Practice of Leadership  2-3 s.h.
Theory-based literature and critiques of leadership as applied to educational institutions.

EPLS:6218 The Law and Higher Education  3 s.h.
The role of law as it affects postsecondary institutions; analysis of case law in specific areas of concern to administrators, faculty, staff, students.

EPLS:6220 History of Higher Education  3 s.h.
History of postsecondary education in the United States; emphasis on conflicting interpretations of pivotal developments; consideration of access, curriculum, student life, academic freedom, role of universities in society, and balance of teaching, research and service from a historical perspective.
EPLS:6221 The College Curriculum 3 s.h.
Issues, principles, policies, and practices in college curriculum development; diverse philosophical, historical, cultural, social, psychological, political foundations of contemporary college curricula; perspectives on and models of college curriculum, related processes of teaching and learning; principles and practices that guide design and change of higher education curriculum.

EPLS:6222 Introduction to Policy Analysis and Evaluation 3 s.h.
Theoretical and technical approaches to analysis and evaluation of contemporary public policies.

EPLS:6224 Organizational Theory and Administrative Behavior 3 s.h.
Theories and concepts of organizational behavior applied in structural, organizational, administrative contexts of American education.

EPLS:6225 Introduction to Public Policymaking 3 s.h.
Overview of state level higher education structures and policies; research on state level policy processes.

EPLS:6226 Educational Management 2-3 s.h.
Literature and research on management; emphasis on American education.

EPLS:6228 Policy Design and Implementation 2-3 s.h.
Review of literature, emphasis on policy drafting skills for administration and management in education and other settings.

EPLS:6236 Administration of Students with Special Needs 3 s.h.
Foundation for and skill practice in tasks performed by directors of special education and others administering to needs of special education students, and economically and socially deprived students; for prospective school administrative personnel. Same as EDTL:6936.

EPLS:6237 History of the Teaching Profession 3 s.h.
History of public school teaching, and teachers' problematic professional status; teacher education in the 19th and 20th centuries; formation and activities of teacher unions in the 20th century.

EPLS:6238 Gender and Education in Historical Perspective 3 s.h.
Gender in context of history of education in the United States; coeducation in common schools, academies, and high schools; women's arrival and experiences as college students; masculinity in higher education; single-sex versus coeducation; emphasis on conflicting historical interpretations. Same as GWSS:6238.

EPLS:6242 Research for Effective School Leaders 3 s.h.
Fundamental language of contemporary research; identification and application of basic research components to contemporary educational leadership problems; applicability of research toward effective decision making.

EPLS:6260 Contemporary Management Strategies for the Pre-K-12 Principal 3 s.h.
Leadership skills and management techniques for daily organization and operation of schools; emphasis on climate, communication, group processes, conflict resolution, curriculum management.

EPLS:6265 Standards-Based Education and Accountability 3 s.h.
Standards-based education; academic content standards, K-12 articulation, alignment studies, use of standardized test results to evaluate academic programs.

EPLS:6266 Program Evaluation 3 s.h.
Theoretical issues and considerations in evaluation of educational and social programs; evaluation design, methodology; metaevaluation; evaluation utilization. Same as PSQF:6265.

EPLS:6270 Policy and Politics of Leadership 3 s.h.
Current issues from academic journals, states, think tanks, consortia.

EPLS:6273 The College Student 3 s.h.
Overview of theories, research, practices, and issues relevant to understanding students in institutions of higher education. Requirements: Ph.D. standing in Higher Education and Student Affairs program.

EPLS:6275 Diversity and Equity in Higher Education 3 s.h.
Historical, contemporary, theoretical, and empirical aspects of diversity and equity in higher education; unique experiences of members of historically under-represented groups; challenges of transforming institutions to make them more responsive to the experiences of diverse groups.

EPLS:6285 School and Community Relationships 3 s.h.
Community analysis, politics and education, power groups and influences, school issues and public responses, public relations strategies.

EPLS:6290 Master's Project arr.
Research for the nonthesis program; topic approved by advisor.

EPLS:6293 Individualized Instruction arr.
Readings, special projects, and/or studies that reflect joint instructor/student interest.

EPLS:6298 Legal Aspects of School Personnel 3 s.h.
Teacher and student: liability, negotiations, rights, privileges, responsibilities of school personnel; principles of law derived from court decisions; constitutional and statutory provisions; for teachers and administrators.

EPLS:6301 Professional Seminar in Student Affairs I 1 s.h.
Orientation to field; writing and academic support.
EPLS:6302 Professional Seminar in Student Affairs II 1 s.h.
Working with groups in higher education.

EPLS:6303 Professional Seminar in Student Affairs III 1 s.h.
Consulting, training, and curriculum development in student affairs.

EPLS:6304 Professional Seminar in Student Affairs IV 1 s.h.
Professional identity, job search support.

EPLS:6311 Seminar: Research Topic in Education 2-3 s.h.
Topic submitted by students, faculty.

EPLS:6315 Orientation to the Superintendency 3 s.h.
Leadership theory and research of the superintendent's role of increasing student achievement; personal goals for communication; ethics, integrity, flexibility, reflective, and collaborative leadership; expectations of the superintendent by the board of directors; defining one's role; developing an entry plan; dealing with social/emotional isolation of superintendency; and influences in the larger political, social, economic, legal, and cultural context.

EPLS:6317 Operational Leadership and Management 1 s.h.
Managing fiscal and physical resources responsibly, efficiently, and effectively; effective communication of school operations; leadership and management of nutrition program, transportation program, facilities, construction; board policy, legal issues; state reporting, ethical decision-making; relationship building, problem solving amidst barriers and various stakeholder groups.

EPLS:6319 Human Resources Leadership 2 s.h.
Leadership theory and research of the superintendent's role of aligning human resources practice and increasing student achievement; employment law; contract negotiations process/collective bargaining; contract maintenance; recruiting, selecting, developing, and retaining employees; working with labor unions and Public Employee Relations Board; special education law; Evaluator 2 Training. Requirements: Evaluator 1 Training.

EPLS:6321 Social Advocacy Summit 1 s.h.
Summit format; challenges and opportunities in Iowa's K-12 schools with changing demographics; opportunity for K-12 school districts and higher education institutions to engage in conversation on how to meet the needs of students and local school districts.

EPLS:6323 School Finance 2 s.h.
Manage fiscal and physical resources; communicate effectively with internal and external audiences regarding school operations; comply with state and federal mandates and local board policies; align educational programs, plans, actions, and resources with the district vision and goals.

EPLS:6325 Organizational and Educational Leadership 2 s.h.
Facilitate connections of students and families to health and social services that support a focus on learning as a district level leader in a school district; collaboratively establish a culture that welcomes and honors families and community and seeks ways to engage them in students learning; AEA structure, compliance and regulatory functions including special education.

EPLS:6329 Legislative Summit 1 s.h.
Collaborate with families and community members, respond to diverse community interests and needs, and mobilize community resources as a district level leader in a school district; work with legislators, build advocacy groups in a community, engage stakeholders, how to lobby legislators and meet with local senate and house representatives to participate in lobbying.

EPLS:6332 College Student Psychosocial and Identity Development 3 s.h.
Theoretical models of psychosocial and identity development in college students; applications to student affairs work.

EPLS:6333 Practicum arr.
Small-scale research projects; supervised experience in planning, design, management, analysis, reporting of research activities; assignments to current and personal faculty research projects; student assumes major responsibility.

EPLS:6334 College Student Learning, Cognitive, and Moral Development 3 s.h.
Learning and development of college students; theoretical models of learning, cognitive development, moral development; applications to student affairs work.

EPLS:6336 Impact of College on Students 3 s.h.
Introduction to literature; career and economic returns, values and attitudes, learning and cognitive development, assessment and methodological issues of studying college outcomes. Prerequisites: EPLS:6206.

EPLS:6358 Seminar in the Philosophy of John Dewey 3 s.h.
John Dewey and education; extensive reading of the works of Dewey and of contemporary authors who comment on, interpret, or employ Deweyan philosophy. Prerequisites: EPLS:5158.

EPLS:6370 Quantitative Methods for Policy Analysis 3 s.h.
Methodological strategies for quantitative research; analysis of secondary data to investigate educational issues and policies; recoding variables, summation scaling and factor analysis, missing data, sample design and survey estimation, model building; implementation of linear and binary regression, regression diagnostics; hands-on experience conducting statistical analysis of social data. Prerequisites: PSQF:4143 and PSQF:6243.

EPLS:6381 Analysis and Appraisal of Curriculum 3 s.h.
Comprehensive investigation of systematic procedures and resources for identifying and evaluating essential features and constituent elements of a given school district's curricular offering; state and federal requirements of the curricular program; for persons in administration, curriculum, and supervision programs or positions.

**EPLS:6383 Supervision and Evaluation** 3 s.h.
Data collection and management skills; data-driven leadership; coaching and feedback techniques; teacher quality legislation; research and best practice regarding teacher evaluation, supervision; teaching standards.

**EPLS:6400 Early Childhood Leadership Clinical** 3 s.h.
Classroom instruction and supervised experience with problems in early childhood educational administration; organization, planning, evaluation, decision making.

**EPLS:6401 Elementary Leadership Clinical** 3 s.h.
Supervised experience working with problems in educational administration, including organization, planning, evaluation, decision making; individual project in a school setting.

**EPLS:6402 Secondary Leadership Clinical** 3 s.h.
Supervised experience working with problems in educational administration, including organization, planning, evaluation, decision making; individual project in a school setting.

**EPLS:6403 Special Education Leadership Clinical** 3 s.h.
Supervised experience working with problems in educational administration, including organization, planning, evaluation, decision making; individual project in a school setting.

**EPLS:6404 Central Administration Clinical** 3 s.h.
Supervised experience working with problems in educational administration, including organization, planning, evaluation, decision making; individual project in a school setting.

**EPLS:6410 Supervision and Evaluation** 2 s.h.
Clinical experience aligned with course topics and assignments in the human resources leadership course; completion of clinical in a K-12 school or other appropriate educational organization; development of a clinical plan based on course requirements, career goals, and student interests with guidance from a university professor and local school district mentor.

**EPLS:6425 Organizational and Educational Leadership Clinical** 1 s.h.
Clinical experience aligned with course topics and assignments in the organizational and educational leadership course; completion of clinical in a K-12 school or other appropriate educational organization; development of a clinical plan based on course requirements, career goals, and student interests with guidance from a university professor and local school district mentor.

**EPLS:7291 Administration of Educational Programs and Personnel** 3 s.h.
Personnel and program planning examined against statements of educational purpose; interrelationships and internal consistencies of program and staff administration from perspectives of philosophy, psychology, learning theory, sociology, curriculum theory.

**EPLS:7367 Seminar: Current Issues in Special Education Administration** arr.
New developments in administration; new content each year. Prerequisites: EPLS:6236.

**EPLS:7373 Qualitative Research Design and Methods** 3 s.h.
Theory and practice of qualitative research design and methodology; exploratory field experience in collection and analysis of data; individual and focus group interviews, participant observation. Requirements: Ph.D. standing.

**EPLS:7380 Practicum in College Teaching** arr.
Supervised college teaching experience in courses related to major academic areas; collaboration with faculty course instructors.

**EPLS:7385 Teaching and Learning in Higher Education** 3 s.h.
Current theoretical and empirical literature on teaching and learning in higher education; focus on development of effective teaching practice. Same as PSQF:7385, GRAD:7385, EDTL:7385, RCE:7385.
### EPLS:7392 Mixed Methods Research 3 s.h.
Introduction to mixed methods research in education; knowledge and skills necessary to conduct mixed methods study; history and language of mixed methods research; identification and processing arguments for and against mixed methods research; extend understanding of research in education; how to assess strengths and weaknesses of published mixed methods studies; investigation of one or more mixed methods research designs in depth; application of mixed methods research design to a research proposal. Prerequisites: EALL:5150. Requirements: formal introduction to quantitative and qualitative research methods, and familiarity with basic steps of research process. Recommendations: direct experience conducting research studies not required. Same as EDTL:7410.

### EPLS:7395 Educational Specialist Research arr.
Individual instruction in the design, research, and writing of a research project of significant quality for upper-level graduate work.

### EPLS:7431 Seminar: Research on College Students 3 s.h.
College student learning and development, outcomes, persistence. Requirements: enrollment in educational policy and leadership studies Ph.D. program.

### EPLS:7432 Multicultural Initiatives 3 s.h.
Impact of culture, race, ethnicity, and intersection of identity in higher education, student affairs, and community agency settings; knowledge, skills, and competencies needed by teachers, student affairs professionals, social workers, counselors, and educational administrators to facilitate individual empowerment through relationships; focus on different ways to design multicultural initiatives to various professional work settings to promote diversity. Requirements: Ph.D. standing or advanced-level M.A. standing. Recommendations: introductory course on issues of race, culture, gender and/or any course on sociopolitical issues or structural oppression strongly recommended.

### EPLS:7433 Current Issues in Higher Education and Student Affairs 3 s.h.
Current issues related to higher education; opportunity to clarify perspectives; review of literature in a particular area of interest; readings, class discussions, independent research, consultations with professionals in the field, student presentations. Requirements: higher education and student affairs Ph.D. standing.

### EPLS:7444 Advanced Practicum in Student Affairs arr.
Supervised work experience in student affairs settings.

### EPLS:7493 Ph.D. Thesis arr.
Supervision of research, design, and writing of Ph.D. thesis; individual instruction.
Multicultural Education and Culturally Competent Practice

Academic coordinator

- Diana Sproles

Graduate certificate: multicultural education and culturally competent practice
Web site: http://ogi.grad.uiowa.edu/me-ccp-information

The certificate program in multicultural education and culturally competent practice helps students develop culturally competent practice as they continue in their academic and professional careers. The program raises awareness of how worldview, values, beliefs, and biases shape the ways in which individuals and groups interact, interpret, and learn from each other. It is based on the need for a proactive and sustained approach to educational reform, advocacy, and social justice.

Graduate Program of Study

- Certificate in Multicultural Education and Culturally Competent Practice

Certificate

The Certificate in Multicultural Education and Culturally Competent Practice requires a minimum of 15 s.h. of graduate credit. Students must maintain a g.p.a. of at least 3.00 in all University of Iowa course work for the certificate. Students may count 6 s.h. of work for their major program of study toward the certificate.

The certificate program is open to students who are enrolled in the University of Iowa Graduate College or who hold an undergraduate degree. Students must register on the certificate web site.

The Certificate in Multicultural Education and Culturally Competent Practice requires the following course work.

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>GRAD:6140 Introduction to Multicultural Education and Culturally Competent Practice</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>Approved electives</td>
<td>9 s.h.</td>
</tr>
<tr>
<td>Capstone course covering research and application in multiculturalism and cultural competent practice</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>
Online Teaching

Coordinator
• Kathy L. Schuh

Graduate certificate: online teaching
The growth of online teaching presents a need to address course quality, instructor training, assessment of teaching effectiveness and student learning, and retention. The Certificate in Online Teaching is an online graduate program designed to prepare students for the realities of online teaching and to help them expand their career options.

Graduate Program of Study
• Certificate in Online Teaching

The Certificate in Online Teaching is administered by the Department of Psychological and Quantitative Foundations (p. 759) and is granted by the Graduate College.

Certificate
The Certificate in Online Teaching requires 12 s.h. of graduate credit and is offered completely online. The certificate program is open to students enrolled in University of Iowa graduate degree programs and to individuals who are enrolled in the Graduate College as nondegree students.

The certificate program develops students' skills in using technology to solve instructional problems associated with distance and time. The certificate's online format uses the techniques and approaches that the program teaches.

The certificate requires the following course work.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>S.H.</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSQF:6205</td>
<td>Design of Instruction</td>
<td>3</td>
</tr>
<tr>
<td>PSQF:6211</td>
<td>Universal Design and Accessibility for Online Instruction</td>
<td>3</td>
</tr>
<tr>
<td>PSQF:6215</td>
<td>Web-Based Learning</td>
<td>3</td>
</tr>
<tr>
<td>PSQF:6216</td>
<td>Tools and Utilities for Online Teaching</td>
<td>3</td>
</tr>
</tbody>
</table>
Psychological and Quantitative Foundations

Chair
• Timothy N. Ansley

Undergraduate minor: educational psychology
Graduate degrees: M.A. in psychological and quantitative foundations; Ed.S. in psychological and quantitative foundations; Ph.D. in psychological and quantitative foundations

Faculty: http://www.education.uiowa.edu/pq/people
Web site: http://www.education.uiowa.edu/pq

The Department of Psychological and Quantitative Foundations offers programs in four areas: counseling psychology, educational measurement and statistics, educational psychology, and school psychology. These programs have two general goals: to help students acquire the knowledge and skills necessary to function effectively in settings that require the application of psychological and quantitative principles; and to extend knowledge and understanding of the teaching/learning process as it occurs in a variety of settings. The department's degree programs incorporate both goals, but the Master of Arts and Specialist in Education programs emphasize the first goal, and the Doctor of Philosophy programs emphasize the second.

Undergraduate Program of Study
• Minor in educational psychology

In addition to offering a minor for undergraduates, the department offers a course that is approved for the Quantitative or Formal Reasoning area of the College of Liberal Arts and Sciences General Education Program (p. 313), PSQF:1020 Elementary Statistics and Inference.

Minor
The minor in educational psychology is open to all College of Liberal Arts and Sciences students enrolled in an undergraduate degree program. The minor provides an enriched background in educational psychology, education testing, and research methods in education. It does not lead to certification for public school teaching. Students earning the minor select a department advisor, who helps them choose appropriate course work.

The minor in educational psychology requires 15 s.h., including 12 s.h. earned at the University of Iowa and 12 s.h. earned in courses numbered 3000 or above. Students must maintain a g.p.a. of at least 2.50 in all courses for the minor and in all UI courses for the minor. Course work in the minor may not be taken pass/nonpass. Transfer credit must be approved in order to count toward the minor.

Course work for the minor must include 15 s.h. selected from the following list.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSQF:1075</td>
<td>Educational Psychology and Measurement</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>PSQF:4106</td>
<td>Child Development</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>PSQF:4111</td>
<td>Human Motivation</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>PSQF:4120</td>
<td>Psychology of Giftedness</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>PSQF:4130</td>
<td>Early Adolescent Development</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

PSQF:4133 The Adolescent and Young Adult 3 s.h.
PSQF:4134 Parent-Teacher Communication 1-3 s.h.
PSQF:4143 Introduction to Statistical Methods 3 s.h.
PSQF:4150 Introduction to Educational Measurement 3-4 s.h.
PSQF:5165 Introduction to Program and Project Evaluation 3 s.h.
PSQF:6203 Tools and External Representations in Learning Processes 3 s.h.
PSQF:6205 Design of Instruction 3 s.h.

Contact the Office of Education Services for more information about the minor.

Graduate Programs of Study

• Master of Arts in psychological and quantitative foundations
• Specialist in Education in psychological and quantitative foundations
• Doctor of Philosophy in psychological and quantitative foundations

The department offers graduate degree programs in four major areas within psychological and quantitative foundations:

Counseling psychology (offered in the M.A. and Ph.D.);
Educational measurement and statistics (offered in the M.A. and Ph.D.);
Educational psychology (offered in the M.A. and Ph.D.); and
School psychology (offered in the Ed.S. and Ph.D.).

Each program is described below.

Applicants for admission to University of Iowa graduate degree programs must meet the admission requirements of the Graduate College; see the Manual of Rules and Regulations of the Graduate College.

M.A.: Counseling Psychology (Hong Kong)

The Master of Arts in counseling psychology program is held in Hong Kong. It provides students with education in the theories, research, and scholarship about the principles and foundational knowledge in counseling psychology. Students learn relevant psychological interventions, strategies, and remediation to work with people in order to effectively solve problems, respond to client situations, and plan for the future. Since there is no supervised practicum component to this degree, students who graduate with the M.A. are not eligible to practice counseling psychology or be licensed in the United States. However, students will be qualified to apply for doctoral programs in professional psychology and counseling fields, such as clinical counseling, school psychology, counselor education, rehabilitation counseling, and school counseling.

The M.A. in counseling psychology requires a minimum of 34 s.h. of graduate credit with no thesis. Prerequisites for some of the required courses may mean that students will need to complete additional course work. Students are expected to maintain a minimum g.p.a. of 2.75 in all work for the degree. Courses are taught year round, and each course covers one month of instruction and one month of...
The Ph.D. program in counseling psychology requires the following work.

**RESEARCH REQUIREMENT**

The following courses are required.

All of these:

- PSQF:6243 Intermediate Statistical Methods 4 s.h.
- PSQF:7331 Seminar: Educational Psychology I—Current Topics (when topic is qualitative educational research methods) 3 s.h.
- PSQF:7394 Supervised Research in Counseling Psychology (at least 4 s.h. is required; students enroll for 1 s.h. per semester for up to four semesters) 4 s.h.

Qualitative and quantitative methodology is discussed in PSQF:7394 Supervised Research in Counseling Psychology, which is directed each semester by faculty advisors. Research from each student is discussed and evaluated, critiqued, and supported.

One of these:

- PSQF:6244 Correlation and Regression 4 s.h.
- PSQF:6246 Design of Experiments 4 s.h.

**BASIC PSYCHOLOGY**

All students are required to have a thorough grounding in the basic discipline of psychology. This may be achieved through a minimum of 3 s.h. of credit in each of the following four areas: biological bases of behavior, cognitive-affective bases of behavior, social bases of behavior, and history and systems. Students complete an additional 6 s.h. in the area of individual differences.

**COUNSELING PSYCHOLOGY CORE**

The following courses are required.

All of these:

- PSQF:6223 & PSQF:6225 Introduction to Counseling Psychology Practice/Research I-II 6 s.h.
- PSQF:6235 Multicultural Counseling 3 s.h.
- PSQF:7305 Psychotherapy I: Dynamic and Phenomenological Approaches 3 s.h.
- PSQF:7306 Psychotherapy III: Work Psychology and Career Interventions 3 s.h.
- PSQF:7309 Personality Assessment 3 s.h.
- PSQF:7310 Intelligence Assessment 3 s.h.
- PSQF:7356 Process and Outcomes in Counseling Psychotherapy 3 s.h.
- PSQF:7365 Psychotherapy II: Cognitive and Behavioral Approaches 3 s.h.
- PSQF:7434 Practicum in Counseling Psychology 3 s.h.
- PSQF:7452 Leadership, Consultation, and Supervision 3 s.h.
- PSQF:7453 Advanced Practicum in Counseling Psychology (repeatable) 1-3 s.h.
- PSQF:7465 Issues and Ethics in Professional Psychology 3 s.h.

Students must enroll in practicums to reach a specified level of client contact, supervision, and additional experience hours. The first practicum's site is typically University Counseling Service. Subsequent placements at other sites must have prior approval of the counseling director.
psychology faculty. Students must successfully complete one semester of PSQF:6299 M.A. Project: The Portfolio before enrolling in PSQF:7453 Advanced Practicum in Counseling Psychology.

ELECTIVES
Elective courses are determined in collaboration with the major advisor.

INTERNSHIP
Students spend a calendar year in an internship setting approved by the counseling psychology faculty. The faculty determines student readiness to apply for the internship based on completion of all or almost all required course work, satisfactory progress toward completion of the portfolio requirement, and successful completion of practicum requirements. Internships usually require geographic relocation.

COMPREHENSIVE EXAM AND DISSERTATION
Comprehensive examinations are written in counseling psychology ethics and issues. The comprehensive examination is structured as a component of the portfolio review. For more information, contact the program coordinator.

The dissertation research study is planned in collaboration with the doctoral student’s major advisor. Dissertation credit ranges from 12 to 15 s.h.

ADMISSION
Applicants to the Ph.D. program in counseling psychology must meet the admission requirements of the Graduate College. Preference is given to applicants who have an undergraduate g.p.a. above 3.00 and a graduate g.p.a. above 3.50; an undergraduate major, minor, or substantial course work in psychology; a Graduate Record Examination (GRE) General Test verbal score of 152 or higher, quantitative score of 151 or higher, and analytical writing score of 3.5 or higher; and previous research and counseling experience.

Application materials must include a Graduate College application form; official transcripts of all previous college work; an official report of GRE General Test scores (the GRE advanced test in psychology is recommended but not required); a personal statement outlining career goals and reasons for seeking advanced training in counseling psychology; and three letters of recommendation from individuals qualified to assess the applicant’s potential for completing the doctoral program. The faculty encourages applications from minorities, women, and persons from a wide range of backgrounds and academic preparation. The program typically accepts between five and eight students each year.

Students begin the program in fall. Application deadline is December 1; admission decisions usually are made by March 1. Applicants are invited to campus for interviews before final selection.

M.A.: Educational Measurement and Statistics
The Master of Arts program in educational measurement and statistics requires a minimum of 30 s.h. of graduate credit with thesis and 32 s.h. of graduate credit without thesis. The program provides students with basic knowledge of educational measurement and research methodology. Graduates find employment in large school systems, state departments of education, test publishing organizations, and research centers. The program also is appropriate for students who wish to broaden their knowledge of measurement and research methodology for personal development or professional improvement.

All M.A. students must complete a core of courses (approximately 26 s.h.) that includes a graduate-level survey course in educational psychology, elementary and intermediate courses in statistical methods, a course in educational research methodology, and courses in the development and use of evaluation instruments. Students who already have completed equivalent courses at another institution may add more advanced courses to the core.

Thesis students complete 2 s.h. of additional course work beyond the core and earn 2-4 s.h. of thesis credit. Nonthesis students complete 6 s.h. of additional course work beyond the core.

The six-hour comprehensive examination typically includes three-hour examinations in educational measurement and in applied statistics. With the approval of the M.A. committee, a student may take two-hour examinations in these fields plus a two-hour examination in educational psychology or a substitute area. Three-hour examinations assume a minimum of three courses in the area; two-hour examinations assume a minimum of two courses in the area.

ADMISSION
Applicants to the M.A. program in educational measurement and statistics must meet the admission requirements of the Graduate College. They should have a combined verbal and quantitative score of at least 300 on the Graduate Record Examination (GRE) General Test. Completion of at least one college mathematics course and experience as a teacher or researcher are desirable. Applicants who do not meet these requirements but who show offsetting evidence of superior ability may be granted conditional admission.

Applicants must submit a statement of purpose that explains how the educational measurement and statistics program will help them accomplish their educational and vocational goals.

For information about admission dates, contact the educational measurement and statistics program coordinator.

Ph.D.: Educational Measurement and Statistics
The Doctor of Philosophy program in educational measurement and statistics requires a minimum of 90 s.h. of graduate credit. The program prepares students for senior professional positions in educational measurement, evaluation, and statistical methods. Graduates find employment in colleges and universities, state and federal agencies, large public and private school systems, test publishing firms, and research centers.

During the first year of graduate study, a student and his or her advisor plan a program of study appropriate for the student’s interests and vocational objectives. The typical program involves advanced work in educational measurement, data analysis methods, research
methodology, and educational psychology. Work in other
University of Iowa departments is encouraged.

Students who concentrate in statistics and intend to teach
at the college level take courses in the mathematical
type of statistics. Those who concentrate in educational
measurement and evaluation take appropriate courses in
curriculum, counseling, or higher education.

All students are required to develop familiarity with
computer programming techniques and equipment.

Students who enter the program without completing an
M.A. thesis must complete a substitute project before
taking the Ph.D. comprehensive examinations.

After completing most of their course work, students take
the comprehensive examination, which typically consists
of three 3-hour written examinations on educational
measurement, applied statistics, and program evaluation,
or approved substitute areas, such as educational
psychology or mathematical statistics, in which a student
has completed at least 9 s.h. of course work. In place
of one written examination, the student's committee
may assign a project involving analytical and evaluative
skills, or research creativity. The written examinations are
followed by an oral examination in which the committee
seeks further evidence of the student's command of the
three fields. A single decision is made on all aspects of the
comprehensive examination.

Work for the Ph.D. concludes with the dissertation, which
is included in the 90 s.h. required for the degree.

RESEARCH REQUIREMENT
One of these:

PSQF:6220 Quantitative Educational Research 3 s.h.
Methodologies
An equivalent course comparable in content
and level of rigor, such as EALL:5150

Quantitative Requirements
This course:

PSQF:6243 Intermediate Statistical Methods 4 s.h.

Two of these:

PSQF:6244 Correlation and Regression 4 s.h.
PSQF:6246 Design of Experiments 4 s.h.
PSQF:6247 Nonparametric Statistical Methods 3 s.h.
PSQF:6249 Factor Analysis and Structural
Equation Models 3 s.h.
PSQF:6252 Introduction to Multivariate
Statistical Methods 3 s.h.
EPLS:5176 Demographic Techniques for
Educational Research 3 s.h.
EPLS:6206 Research Process and Design 3 s.h.
EPLS:6209 Survey Research and Design 3 s.h.
EPLS:6370 Quantitative Methods for Policy
Analysis 3 s.h.

Qualitative Requirements
The following course may be taken on a non-graded basis
with approval of a student's program and advisor.

One of these:

PSQF:7331 Seminar: Educational Psychology
I—Current Topics (when topic is qualitative
educational research methods) 3 s.h.
EDTL:7070 Introduction to Qualitative Methods
in Literacy Research 3 s.h.
EPLS:7373 Qualitative Research Design and
Methods 3 s.h.
RCE:7388 Essentials of Qualitative Inquiry
An equivalent course comparable in content
and level of rigor 3 s.h.

One of these:

PSQF:5165 Introduction to Program and
Project Evaluation 3 s.h.
PSQF:6265 Program Evaluation 3 s.h.
PSQF:7331 Seminar: Educational Psychology
I—Current Topics (when topic is conducting
research online) 3 s.h.
CNW:6654 Forms of the Essay (when topic is
the ethnographic essay) arr.
EDTL:6267 Seminar: Current Issues in Art
Education (when topic is qualitative methods)
3-4 s.h.
EDTL:7071 Critical Discourse Analysis in
Educational Research 3 s.h.
EDTL:7072 Advanced Methods of Literacy
Research: Qualitative Data Analysis and
Reporting 3 s.h.
EDTL:7073 Ethnographic Methods, Theories,
and Texts 3 s.h.
EDTL:7410 Mixed Methods Research 3 s.h.
EDTL:7751 Advanced Qualitative Data
Analysis 3 s.h.
EDTL:7774 Qualitative Research with
Computer-Aided Qualitative Data Analysis
Software 3 s.h.
EDTL:7953 Seminar: Single Subject Design
Research 3 s.h.
EPLS:5195 Research in Cross-Cultural Settings
3 s.h.
EPLS:5240 Topics in Education (when topic is
introduction to historical methodology)
arr.
HIST:7197 The Art and Craft of Historical
Writing arr.
HIST:7199 History Workshop: Theory and
Interpretation arr.
RCE:7438 Advanced Qualitative Research
Seminar in Rehabilitation and Counselor
Education 3 s.h.
RCE:7444 Qualitative Research in the
Multicultural Context 3 s.h.

ADMISSION

Applicants to the Ph.D. program in educational
measurement and statistics must meet the admission
requirements of the Graduate College. They must have
a combined verbal and quantitative score of at least 300
on the Graduate Record Examination (GRE) General Test
and must hold an M.A. from an accredited institution. At
least one year of professional experience in teaching,
research, or a related field is desirable. Applicants who
expect to concentrate in statistics should have training
in college mathematics through differential and integral
calculus. Applicants who do not meet these requirements
but who show offsetting evidence of superior ability may be granted conditional admission.

Applicants must submit a statement of purpose that explains how the educational measurement and statistics program will help them accomplish their educational and vocational goals.

For information about admission dates, contact the educational measurement and statistics program coordinator.

M.A.: Educational Psychology

The Master of Arts in educational psychology is designed to help students become more effective practitioners by enhancing their ability to make responsible and creative decisions about how to help all of their students learn. By providing an evidence-based perspective on instructional approaches that work, it also addresses the emphasis on teachers' accountability for choosing empirically supported approaches.

The M.A. in educational psychology is designed for working educators. Many of the program courses are offered in late afternoons, evenings, and summers. Each student's progress is evaluated by the faculty after one academic year (two semesters) of study and during subsequent years.

The M.A. in educational psychology requires a minimum of 30 s.h. of graduate credit. A thesis is not required. Students develop a program of study in consultation with their advisors.

Students complete a required common core, select educational psychology courses and electives appropriate to their professional goals, and complete a capstone portfolio project. The two core courses, which are taken during the first year, prepare students for the M.A. program. Educational Psychology [PSQF:6200] introduces them to a broad sampling of topics in educational psychology (e.g., development, cognition, motivation). Also during the first year, students begin their portfolios, which they continue to build throughout the program and complete during their final M.A. semester.

Full-time M.A. students typically take at least 9 s.h. each semester, with the option of additional summer session work; they usually complete the program in four semesters. Part-time M.A. students take 3-6 s.h. each semester; they usually complete the degree in two or three years.

Students may apply to substitute equivalent course work from another institution or department for required or recommended courses.

CORE COURSES

The following courses are required (9 s.h.).

Both of these:
PSQF:6200 Educational Psychology 3 s.h.
EALL:5150 Introduction to Educational Research 3 s.h.

One of these options:
PSQF:6299 M.A. Project: The Portfolio 3 s.h.
Comprehensive exam and an additional educational psychology course 3 s.h.

CONTENT COURSES

Educational psychology—15-21 s.h. from these:
PSQF:4106 Child Development 3 s.h.
PSQF:4111 Human Motivation 3 s.h.
PSQF:4130 Early Adolescent Development 3 s.h.
PSQF:4133 The Adolescent and Young Adult 3 s.h.
PSQF:6203 Tools and External Representations in Learning Processes 3 s.h.
PSQF:6204 Foundations of the Learning Sciences 3 s.h.
PSQF:6205 Design of Instruction 3 s.h.
PSQF:6208 Designing Educational Multimedia 3 s.h.
PSQF:6215 Web-Based Learning 3 s.h.
PSQF:6217 Seminar in College Teaching 1-3 s.h.
PSQF:6281 Cognitive Theories of Learning 3 s.h.
PSQF:6301 Human Abilities 3 s.h.

Students may request permission to substitute other courses with consent of their advisor.

ELECTIVES

Students select two electives (6 s.h.) based on their interests and in consultation with their advisors. Electives typically are chosen from areas outside educational psychology.

PORTFOLIO PROJECT

The program's capstone project is a portfolio. Students enroll in PSQF:6299 M.A. Project: The Portfolio (3 s.h.) during their final M.A. semester.

The portfolio is a creative and highly individual project. Each student's portfolio reflects his or her own unique learning and synthesis of knowledge. Students begin building the portfolio during their first year, making an entry as they complete each course throughout the M.A. program. Portfolio entries vary widely. For example, the entry for a technology course might include a website a student developed for the course, while the entry for a development course might detail an intervention program the student constructed to address problems of student aggression.

During enrollment in PSQF:6299, a student revises and reflects on the portfolio contents and then presents the portfolio as the culmination of his or her work throughout the program. The portfolio's goal is to show how understanding and practical application of educational psychology can help the student become a more effective educator.

This course:
PSQF:6299 M.A. Project: The Portfolio 3 s.h.

ADMISSION

Applicants to the M.A. program in educational psychology must meet the admission requirements of the Graduate College, including the minimum grade-point average. Viable applicants have a verbal score of at least 146 and a quantitative score of at least 149 on the Graduate Record Examination (GRE) General Test; successful applicants usually score higher. International applicants whose first language is not English must submit acceptable scores on the Test of English as a Foreign Language (TOEFL). Teaching experience is desirable but not required.
Application deadline for fall semester entry is February 1 with review beginning soon after. Admission decisions are announced approximately six weeks after the application deadline.

Applicants who accept admission or financial aid and do not relinquish either one on or before April 15 are committed not to solicit or accept another offer. Offers made by the program after April 15 include the provision that the offer is void if the applicant has accepted and continues to hold a previous offer from another program listed in the American Psychological Association publication Graduate Study in Psychology and Associated Fields. This policy is consistent with standards set by the association's Board of Educational Affairs.

**Ph.D.: Educational Psychology**

Educational psychology is characterized by empirical research and theory typical of the social and behavioral sciences. The Doctor of Philosophy program in educational psychology requires a minimum of 72 s.h. of graduate credit. It is designed to help students master the core content and methods of educational psychology and acquire the depth of knowledge and methodological sophistication necessary for original research that contributes to the discipline.

Students work closely with their advisor to define a program that matches their goals and interests. They develop a plan of study in consultation with their advisors. Those who begin the program after earning a master's degree or with course work from another program may be able to waive some of the Ph.D. program's requirements. Students who enter the program without completion of a M.A. thesis are required to complete a research practicum in which students assist with and later design and carry out original research during their first or second year. Students who have completed an empirical M.A. thesis acceptable to the faculty may omit the second-year project.

The program of study includes substantive areas within educational psychology and the learning sciences, including courses in cognition, development, learning theory, and the design of instruction, learning environments, and learning technologies. Other learning opportunities include a research practicum in which students assist with and eventually design and carry out original research, a slate of research courses that meet the College of Education’s research requirements, a minor area of the student’s choice, and a dissertation in the student’s area of interest.

**RESEARCH REQUIREMENT**

The heart of educational psychology as a field is the creation, dissemination, and use of rigorous research to better understand and address educational issues. While many of the required courses address various aspects of the guiding principles set out by the National Research Council, students engage in the following course work and research-related activities.

**Required Course Work**

Quantitative and qualitative research methods—both of these:

- PSQF:6220 Quantitative Educational Research Methodologies 3 s.h.
- PSQF:7331 Seminar: Educational Psychology I—Current Topics (when topic is qualitative educational research methods) 3 s.h.

Central to understanding research in the field is the understanding and use of statistical methods.

Statistics—this course:

- PSQF:6243 Intermediate Statistical Methods 4 s.h.

Based on the types of questions encountered in the field, students benefit from additional exposure to quantitative methods.

Quantitative methods—one of these:

- PSQF:6244 Correlation and Regression 4 s.h.
- PSQF:6246 Design of Experiments 4 s.h.
- PSQF:6247 Nonparametric Statistical Methods 3 s.h.
- PSQF:6252 Introduction to Multivariate Statistical Methods 3 s.h.

**Research Project**

In consultation with a faculty member, students design, implement, and present an original second-year research study. This experience provides the opportunity to conduct a pilot study that will strengthen their thesis in terms of methods, instruments, theoretical grounding, or focus of research question. Student presentations of their research are open to the public. Students are encouraged to submit their study results for broader dissemination at a local, regional, or national conference.

- PSQF:6230 Research in Educational Psychology 3 s.h.

**Additional Course Work**

To develop specific competencies that are related to research, doctoral students in educational psychology are encouraged to select from the following elective courses.

- PSQF:6245 Applied Multivariate Analysis 3 s.h.
- PSQF:6257 Educational Measurement and Evaluation 3 s.h.
- PSQF:6265 Program Evaluation 3 s.h.
- PSQF:7331 Seminar: Educational Psychology I—Current Topics (when topic is research writing in education or conducting research online; 3 s.h. each) 3 s.h.

Advanced qualitative course (consult with advisor)

- Mixed methods course (consult with advisor)

**Research-Related Activities**

Students are encouraged to participate in research experiences beyond their course work. They are encouraged to

- attend research conferences as a presenter or audience member;
- become members of professional research organizations such as the American Educational Research Association;
- volunteer as proposal reviewers for conferences in their areas of expertise later in their program of study; and
- work with faculty members on faculty research projects.
REQUIRED COURSES
All of these:

PSQF:6200 Educational Psychology 3 s.h.
PSQF:6205 Design of Instruction 3 s.h.
PSQF:6281 Cognitive Theories of Learning 3 s.h.
PSQF:7493 Ph.D. Thesis in Psychological and Quantitative Foundations (minimum requirement) 10 s.h.

CORE COURSES
Selection of courses depend on the student's area of specialization.
At least 15 s.h. from these:

PSQF:6203 Tools and External Representations in Learning Processes 3 s.h.
PSQF:6204 Foundations of the Learning Sciences 3 s.h.
PSQF:6206 Advanced Child Development 3 s.h.
PSQF:6208 Designing Educational Multimedia 3 s.h.
PSQF:6215 Web-Based Learning 3 s.h.
PSQF:6275 Constructivism and Design of Instruction 3 s.h.
PSQF:7331 Seminar: Educational Psychology I—Current Topics (topics vary; may be repeated if content is related to educational psychology)

ELECTIVES
Students may take up to 9 s.h. of elective course work. Students can take PSQF:6217 Seminar in College Teaching and/or additional research courses. See "Research Requirement" above. Other courses may be included in consultation with the advisor.

MINOR AREA
Students must complete a minimum of 12 s.h. that constitute a coherent program of course work outside educational psychology and beyond the courses listed above. The minor area may be from a foundation discipline such as psychology or in another area of education such as mathematics education, educational philosophy, or program evaluation. Courses must be numbered 5000 or above, can span across departments and colleges, and must be consistent with a plan approved by a student's advisor.

COMPREHENSIVE EXAMINATION
The Ph.D. comprehensive examination emphasizes competence and depth in one or more narrowly defined areas of research and theory. Students choose from three options in consultation with their advisor and with the approval of the examining committee, composed of five faculty members and does not necessarily include the same faculty members as the dissertation committee. The options are a review article, an extended research activity, or a traditional comprehensive examination. For details of each option's requirements, contact the Department of Psychological and Quantitative Foundations.

ADMISSION
Applicants to the Ph.D. program in educational psychology must meet the admission requirements of the Graduate College, including the minimum grade-point average. They must have a verbal score of at least 150 and a quantitative score of at least 152 on the Graduate Record Examination (GRE) General Test; successful applicants usually score higher. International applicants whose first language is not English must submit acceptable scores on the Test of English as a Foreign Language (TOEFL). Applicants who do not meet all admission requirements may be granted conditional admission on the basis of other evidence, such as high grade-point average, strong academic preparation, and highly supportive recommendations. Conditional admission is rare.

Admission is for fall entry. Application deadline is February 1; late applications might not be considered. Review of applications begins soon after, when applicants who wish to be considered for fellowships and other awards are screened. Admission decisions are announced approximately six weeks after the application deadline.

Applicants who accept admission or financial aid and do not relinquish either one on or before April 15 may not solicit or accept another offer. Offers made by the program after April 15 include the provision that the offer is void if the applicant has accepted and continues to hold a previous offer from another program listed in the American Psychological Association publication Graduate Study in Psychology and Associated Fields. This policy is consistent with standards set by the association's Board of Educational Affairs.

Ed.S.: School Psychology
The school psychology program admits students at either the Specialist in Education (Ed.S.) or Doctor of Philosophy (Ph.D.) levels. Also, students in the doctoral program may be granted an Ed.S. once they complete the requirements.

The educational specialist program in school psychology requires a minimum of 66 s.h. of graduate credit. The program provides course work and supervised field experience in education and psychology, enabling graduates to qualify for Iowa licensure as a school psychologist (State of Iowa Endorsement 236).

The curriculum includes courses in psychological foundations, psychoeducational foundations, school psychology, and research methods. Other requirements include a written portfolio and a project paper prepared in conjunction with PSQF:7342 Research Project in School Psychology.

The plan of study is as follows.

FALL SEMESTER, FIRST YEAR
All of these:

PSQF:5218 Foundations of School Psychology 4 s.h.
PSQF:6251 Individual Intelligence Testing 3 s.h.
EDTL:4900 Foundations of Special Education 3 s.h.
EDTL:7953 Seminar: Single Subject Design Research Pre-practicum

SPRING SEMESTER, FIRST YEAR
All of these:

PSQF:6206 Advanced Child Development 3 s.h.
PSQF:6238 Assessment of Learning Differences 3 s.h.
PSQF:6263 Consultation Theory and Practice 3 s.h.
PSQF:7237 Beginning Practicum in School Psychological Service 3 s.h.
PSQF:7342 Research Project in School Psychology (Ed.S. project) 1 s.h.

SUMMER SESSION, FIRST YEAR
One of these:
PSQF:6235 Multicultural Counseling 3 s.h.
RCE:5202 Introduction to Group Counseling 3 s.h.
RCE:5222 Counseling Children and Adolescents in Schools 3 s.h.
Both of these:
PSQF:7237 Beginning Practicum in School Psychological Service (community practicum) 2 s.h.
PSQF:7342 Research Project in School Psychology (Ed.S. project) 1 s.h.

FALL SEMESTER, SECOND YEAR
All of these:
PSQF:7313 Psychopathology in Childhood 3 s.h.
PSQF:7337 Advanced Practicum in School Psychology (schools) 3 s.h.
PSQF:7342 Research Project in School Psychology (Ed.S. project) 1 s.h.
PSQF:7345 Academic Interventions 3 s.h.
PSQF:7466 Psychological Services to Children, Adolescents, and Families: Legal and Ethical Standards (ethics) 3 s.h.

SPRING SEMESTER, SECOND YEAR
All of these:
PSQF:6243 Intermediate Statistical Methods 4 s.h.
PSQF:6244 Correlation and Regression 4 s.h.
PSQF:6246 Design of Experiments 4 s.h.
PSQF:7331 Seminar: Educational Psychology I—Current Topics (when topic is qualitative educational research methods) 3 s.h.

To receive credit for additional courses, students must obtain prior approval from their advisor and the school psychology program.

PROGRAM CORE
The following courses are required.
All of these:
PSQF:6238 Assessment of Learning Differences (taken with PSQF:7237) 3-4 s.h.
PSQF:6251 Individual Intelligence Testing (taken with PSQF:7237) 3 s.h.
PSQF:6263 Consultation Theory and Practice (taken with PSQF:7337) 3 s.h.
PSQF:7224 Introduction to School Psychology Practice 3 s.h.
PSQF:7237 Beginning Practicum in School Psychological Service (minimum of 150 hours required) 3 s.h.
PSQF:7313 Psychopathology in Childhood 3 s.h.
PSQF:7315 Social and Emotional Assessment of Children and Adolescents 3 s.h.
PSQF:7337 Advanced Practicum in School Psychology (minimum of 750 hours required) 12 s.h.
PSQF:7352 Seminar: Behavioral Assessment and Evaluation 3 s.h.
PSQF:7367 Social Psychology and Social Systems 3 s.h.
PSQF:7380 Practicum in College Teaching (optional) 1-3 s.h.
PSQF:7390 Supervision of School Psychology Practicum/Internship 1 s.h.

Ph.D.: School Psychology
The Doctor of Philosophy program in school psychology requires a minimum of 125 s.h. of graduate credit. The program is fully accredited by the American Psychological Association.

The program's goal is to prepare doctoral-level school psychologists who will promote psychology as a science and contribute to the advancement of the profession. The faculty endorses a scientist/practitioner model of training and expects students to become competent researchers and proficient practitioners.

Ph.D. students develop a plan of study in consultation with their academic advisors. All students are required to have a thorough grounding in the basic discipline of psychology, which may be achieved through earning a minimum of 3 s.h. of credit in each of the following areas: biological bases of behavior, cognitive/affective bases of behavior, social bases of behavior, individual differences, and history and systems.

Students are required to complete yearly portfolio reviews, which include oral examinations; carry out a preliminary dissertation research project equivalent in scope to an M.A. thesis; participate in an internship; and complete a doctoral dissertation, earning a minimum of 10 s.h. in PSQF:7493 Ph.D. Thesis in Psychological and Quantitative Foundations.

RESEARCH REQUIREMENT
All of these:
PSQF:6243 Intermediate Statistical Methods 4 s.h.
PSQF:6244 Correlation and Regression 4 s.h.
PSQF:6246 Design of Experiments 4 s.h.
PSQF:7331 Seminar: Educational Psychology I—Current Topics (when topic is qualitative educational research methods) 3 s.h.

To receive credit for additional courses, students must obtain prior approval from their advisor and the school psychology program.

PROGRAM CORE
The following courses are required.
All of these:
PSQF:6238 Assessment of Learning Differences (taken with PSQF:7237) 3-4 s.h.
PSQF:6251 Individual Intelligence Testing (taken with PSQF:7237) 3 s.h.
PSQF:6263 Consultation Theory and Practice (taken with PSQF:7337) 3 s.h.
PSQF:7224 Introduction to School Psychology Practice 3 s.h.
PSQF:7237 Beginning Practicum in School Psychological Service (minimum of 150 hours required) 3 s.h.
PSQF:7313 Psychopathology in Childhood 3 s.h.
PSQF:7315 Social and Emotional Assessment of Children and Adolescents 3 s.h.
PSQF:7337 Advanced Practicum in School Psychology (minimum of 750 hours required) 12 s.h.
PSQF:7352 Seminar: Behavioral Assessment and Evaluation 3 s.h.
PSQF:7367 Social Psychology and Social Systems 3 s.h.
PSQF:7380 Practicum in College Teaching (optional) 1-3 s.h.
PSQF:7390 Supervision of School Psychology Practicum/Internship 1 s.h.
PSQF:7437 Internship in School Psychology 3 s.h. (one year full-time or two years half-time; total of 1800 hours required)
Program course work in evaluation
Students must enroll in practicums to reach a specified level of client contact, supervision, and additional experience hours. Placements must have prior approval of the school psychology faculty. Students must successfully complete one semester of PSQF:7237 Beginning Practicum in School Psychological Service before enrolling in PSQF:7337 Advanced Practicum in School Psychology. Students must adhere to the most recent ethical principles and standards of the American Psychological Association.

ADMISSION
Applicants to the Ph.D. program in school psychology must meet the admission requirements of the Graduate College. Preference is given to applicants with an undergraduate major in psychology or education and a g.p.a. above 3.00. A combined verbal and quantitative score of 308 or higher and an analytic writing score of 4 or higher on the Graduate Record Examination (GRE) General Test are recommended but not required. The faculty also encourages applications from individuals with an M.A. or Ed.S. and experience as psychologists or other human service providers.

Applications must include three letters of recommendation, a personal statement of interest and goals, and a writing sample. Complete application materials, including transcripts and test scores, must be received by January 1 to be considered for fall entry. Admission decisions are usually made by March 15. The program admits from six to eight students each year.

Courses

Lower-Level Undergraduate
Students may receive credit for only two of these three courses: STAT:1010 Statistics and Society, STAT:1020 Elementary Statistics and Inference (same as PSQF:1020 Elementary Statistics and Inference), and STAT:1030 Statistics for Business. Credit for STAT:1010 Statistics and Society is given only if the course is taken before STAT:1020 Elementary Statistics and Inference (same as PSQF:1020 Elementary Statistics and Inference) or STAT:1030 Statistics for Business.

PSQF:1020 Elementary Statistics and Inference
Graphing techniques for presenting data, descriptive statistics, correlation, regression, prediction; logic of statistical inference, elementary probability models, estimation and tests of significance. Requirements: one year of high school algebra or MATH:0100. GE: Quantitative or Formal Reasoning. Same as STAT:1020.

PSQF:1026 Mindfulness: Being Here With It All
Training in Mindfulness-Based Stress Reduction; application to dealing with life changes (i.e., transition to University life); navigating daily life (academics, roommates, schedules); improving academic skills; self-regulation of emotions; questions of meaning and purpose.

PSQF:1027 Mindfulness Foundations in the Helping Professions
Training in Mindfulness-Based Practices; application to personal and professional life.

PSQF:1029 First-Year Seminar 1 s.h.
Small discussion class taught by a faculty member; topics chosen by instructor; may include outside activities (e.g., films, lectures, performances, readings, visits to research facilities).

PSQF:1075 Educational Psychology and Measurement 3 s.h.
Principles and classroom applications of cognitive and social development, learning and cognition, motivation, and assessment.

PSQF:2115 Introduction to Counseling Psychology 3 s.h.
Historical and philosophical foundations of counseling psychology; theories, application, and work of counseling psychologists.

PSQF:2116 Applied Child and Adolescent Psychology 3 s.h.
Overview of child and adolescent development, psychopathology, and basic-level intervention; foundation for working in applied child and adolescent mental health settings; typical areas of psychological difficulty, including developmental disorders, ADHD, depression, anxiety, substance use; contextual and environmental factors; including abuse, poverty, neglect.

Upper-Level Undergraduate and Graduate

Exploration of research-based implications for teaching, learning, and daily living; skillful engagement of demands educators face in personal and professional lives; mindfulness as paying attention in present moment and relating wisely to what is occurring; specific mindfulness practices that integrate awareness into daily living; how research and program evaluations throughout the world document that consistent practice of mindfulness improves attention and concentration; ability to respond skillfully to stress, self-regulation of emotion, physical and mental health, communication, life satisfaction.

PSQF:3103 Early Childhood Guidance 4 s.h.
Effective communication, understanding child development and behavior, appropriate limits and rules, structuring problem solving and consequences, fostering self control, organizing classroom environment and curriculum to support child behavior, methods to address persistent and challenging behaviors; nurturance and child guidance via parenting, child rearing practices, and child-family relations.

PSQF:3104 Multicultural Issues in Counseling and Psychology 3 s.h.
Introduction to multicultural competencies and its importance to counseling, psychology, and helping professions; psychological concepts and research pertaining to privilege; race, race, culture, sexual orientation, social class and classism, and their application in culturally adapted psychotherapy interventions; how these matters and other cultural identities and constructs are handled and used in applied psychology and counseling; focus on intersection of research and practice.

PSQF:4081 ePortfolio Production 1-2 s.h.
Experience producing an ePortfolio and uploading it to the Internet; practical experience using digital tools, content and design related to ePortfolio production; experience using a web browser and access to the Internet and to a digital camera or scanner. Requirements: able to perform basic computer functions and use a World Wide Web browser. Same as EALL:4081, EDTL:4081, RCE:4081, EPLS:4081.

PSQF:4106 Child Development 3 s.h.
Theories and research findings about typical course of child development, differences in development. Requirements: junior standing.

PSQF:4111 Human Motivation 3 s.h.
Principles of motivation and their application to applied settings, especially to the classroom as teachers try to motivate students. Requirements: junior standing.

PSQF:4120 Psychology of Giftedness 3 s.h.
Theories of learning, child development, motivation; issues unique to gifted education. Same as RCE:4120.

PSQF:4121 Identification of Students for Gifted Programs 3 s.h.
Interpretation of standardized tests and other measurement instruments used to identify academic talent and program effectively for grades K-12; ability, aptitude, achievement tests; current issues in the uses of various instruments. Same as RCE:4121.

PSQF:4122 Math Programming for High Ability Students 1 s.h.
Unique challenges and opportunities confronted by teachers of high-ability students; theory and practice, development of program outlines for implementation. Same as EDTL:4022.

PSQF:4123 Academic Acceleration: Providing Excellence and Equity in Education for High Ability Students arr.
Acceleration as an effective curricular intervention for high-ability students; forms of acceleration, research evidence for acceleration, and process of implementing acceleration; reasons for persistent negative attitudes about acceleration; advocacy for acceleration; skills for effective practice and implementation. Requirements: computer with internet access, sound card, Adobe Reader, and Adobe Flash Player.

PSQF:4125 Counseling and Psychological Needs of the Gifted 1 s.h.
Psychological aspects of giftedness, counseling techniques appropriate for gifted children, adolescents; socio-emotional concerns, career development, underachievement. Same as RCE:4125.

PSQF:4126 Cognitive and Affective Needs of Underachieving Gifted 1 s.h.
Diagnostic strategy for identifying types of underachievement, teaching and counseling interventions appropriate for each. Same as RCE:4126.

PSQF:4127 Research and Theory in Talent/Giftedness 1 s.h.
Biennial research symposium. Same as RCE:4127.

PSQF:4128 Neuroscientific Implications for Gifted 1 s.h.
Neurology of behavior and neurodegenerative disease; the psychology of learning and memory, its application to gifted education.

PSQF:4129 Creativity: Issues and Applications in Gifted Education 1 s.h.
Theories that underpin contemporary definitions of creativity; instruments developed to measure creativity; activities in the school environment that enhance or inhibit student creativity. Same as RCE:4129.

PSQF:4130 Early Adolescent Development 3 s.h.
Psychological growth and development of the early adolescent (ages 10-14), including the physical, cognitive, social, emotional, and sexual development of the middle-school aged child.

PSQF:4133 The Adolescent and Young Adult 3 s.h.
Psychological and social aspects of adolescence and young adulthood; emphasis on theory, research, and practical applications.

PSQF:4134 Parent-Teacher Communication 1-3 s.h.
Realities of working with parents; interpersonal skills; options for parent support services. Same as EDTL:4934.

PSQF:4136 Home/School/Community Partnerships 3 s.h.
Issues related to collaboration among families, educators, community members in implementing school programs. Same as EDTL:4936.

PSQF:4143 Introduction to Statistical Methods 3 s.h.
Analysis, interpretation of research data; descriptive statistics; introduction to probability, sampling theory, statistical inference (binomial, normal distribution, t-distribution models); linear correlation, regression. Same as STAT:4143.

PSQF:4150 Introduction to Educational Measurement 3-4 s.h.
Test development procedures, reliability, validity, item writing, evaluation of item and test characteristics; classroom assessment methods; interpretation of scores from standardized achievement and aptitude tests; no background in statistics assumed.
PSQF:4520 Bayesian Statistics 3 s.h.
Bayesian statistical analysis, with focus on applications; Bayesian and frequentist methods compared; Bayesian model specification, choice of priors, computational methods; hands-on Bayesian data analysis using appropriate software; interpretation and presentation of analysis results. Prerequisites: STAT:3200 and (STAT:3100 and STAT:3101) or STAT:3120 or (STAT:4100 and STAT:4101). Same as STAT:4520.

Graduate

PSQF:5165 Introduction to Program and Project Evaluation 3 s.h.
Skills and knowledge required for conducting evaluations of products, projects, and programs; recent scholarship on evaluation and project management. Same as EPLS:5165.

PSQF:5193 Special Readings and Projects arr.
Supervised individual study. Requirements: senior standing.

PSQF:5194 Continuing Education Individual Study arr.
Supervised individual study.

PSQF:5199 Topical Workshop in Psychological and Quantitative Foundations
School, educational, and counseling psychology and allied disciplines; for professionals and graduate students in education, mental health, social services, related fields.

PSQF:5218 Foundations of School Psychology 3-4 s.h.
Introduction to field of school psychology; becoming competent practitioners and leaders in school and community settings; roles and functions of school psychologists; ethical standards and issues in the profession of psychology; legal issues involved in practice of school psychology; current topics and trends. Corequisites: PSQF:7224.

PSQF:5226 Assessment of Giftedness 3 s.h.
Training and practice in assessment of gifted children. Same as RCE:5226.

PSQF:6200 Educational Psychology 3 s.h.
Psychology of the learning/instruction process: theoretical perspectives on learning, instruction, motivation, and assessment; developmental concepts, social processes, individual variation, learning and technology, biological basis of learning.

PSQF:6203 Tools and External Representations in Learning Processes 3 s.h.
Theories and issues in the use of technology in learning and teaching; project to design a technology-supported learning solution for an educational problem.

PSQF:6204 Foundations of the Learning Sciences 3 s.h.
Foundations of Interdisciplinary science of learning; theory and method of study of cognition in sociocultural context; design-based approaches to research on learning.

PSQF:6205 Design of Instruction 3 s.h.
Introduction to processes used to design, develop, implement, and evaluate effective instruction; projects.

PSQF:6206 Advanced Child Development 3 s.h.
Theories of social and cognitive development; in-depth study of several current controversies in the field.

PSQF:6208 Designing Educational Multimedia 3 s.h.
Theory, design, and evaluation of instructional software.

PSQF:6209 Survey Research and Design 3 s.h.
Survey design and implementation; writing and evaluation of survey questions; error in survey research; techniques to reduce error; sampling; postcollection processing of survey data. Prerequisites: EPLS:6206 or PSQF:4143. Same as EPLS:6209.

PSQF:6211 Universal Design and Accessibility for Online Instruction 3 s.h.
Universal Design for Learning (UDL) framework; introduction to accessibility for online learning environment; use of UDL with any curriculum to provide more students with access to learning, including online learning environment.

PSQF:6215 Web-Based Learning 3 s.h.
Theory and practice of designing web sites to support or deliver instruction; student team project to create an instructional web site that integrates the theory and principles from class readings.

PSQF:6216 Tools and Utilities for Online Teaching 3 s.h.
Guidance for future online teachers in making well-informed decisions on what technologies need to be adopted and applied for high quality, successful online educational programming in a variety of environments (e.g., K-12, higher education, business and industry); choosing, learning, evaluating, and using different types of technologies to produce online instruction; how to learn; initiating and managing learning and professional development for effective online teaching. Corequisites: PSQF:6205, if not taken as a prerequisite.

PSQF:6217 Seminar in College Teaching 1-3 s.h.
Preparation for college teaching; for graduate students planning to teach. Same as GRAD:6217.

PSQF:6220 Quantitative Educational Research Methodologies 3 s.h.
Procedures for planning, conducting, and reporting research; evaluation of current methods in educational research; quantitative designs and methods. Prerequisites: PSQF:4143 or STAT:4143.

PSQF:6223 Introduction to Counseling Psychology Practice/Research I 3 s.h.
Historical, theoretical, professional, scientific traditions associated with counseling psychology; professional ethical principles.

PSQF:6225 Introduction to Counseling Psychology Practice/Research II 3 s.h.
Learning and performance of basic helping skills; integration of these skills with counseling theories, broader counseling strategies; laboratory-based.

**PSQF:6230 Research in Educational Psychology** 1-3 s.h.
Design, implementation, and presentation of an educational psychology empirical research project. Requirements: graduate standing in educational psychology.

**PSQF:6231 Concepts and Principles of Behavior Analysis** 3 s.h.
Comprehensive review of psychological principles of learning derived from experimental research and empirical studies; types of behavior, motivational influences on behavior, respondent behavior and operant conditioning, stimulus control, schedule influences on behavior, observational learning, verbal behavior, rule-governed behavior, and behavioral accounts of language and cognition.

**PSQF:6232 Functional Behavior Assessment and Analysis** 3 s.h.
Understanding the purpose of assessments of behavior, developing assessments based on the presenting problems of behavior, conducting assessments to understand the purpose of behavior, and develop an effective behavior intervention plan; advanced coverage of special topics, including preference assessments and verbal behavior.

**PSQF:6233 Ethics for Behavioral Psychologists** 1 s.h.
Ethics that are unique to applied behavior analysis; ethical considerations.

**PSQF:6235 Multicultural Counseling** 3 s.h.
Theoretical and practical aspects of the cultural adaptation process; implications for interventions in diverse populations; issues. Requirements: counseling skills introductory course.

**PSQF:6236 Counseling and Psychotherapy for Persons with Disabilities** 3 s.h.
Preparation for future psychologists and counselors to work with persons with disabilities throughout the lifespan; examination of disability issues within the context of present and past theoretical constructs. Requirements: enrollment in psychological and quantitative foundations or rehabilitation and counselor education. Same as RCE:6236.

**PSQF:6238 Assessment of Learning Differences** 3-4 s.h.
**PSQF:6242 Selected Applications of Statistics** 3 s.h.
Application and interpretation of correlation techniques, chi-square, t- and f-tests, interval estimation, simple cases of analysis of variance. Prerequisites: PSQF:4143.

**PSQF:6243 Intermediate Statistical Methods** 4 s.h.

**PSQF:6244 Correlation and Regression** 4 s.h.
Correlation techniques; selected bivariate procedures, multiple, partial, curvilinear correlation; multiple linear regression; sampling theory applied to regression analysis and correlation coefficients; simple causal models. Requirements: for PSQF:6244 — PSQF:6243; for STAT:6514 — STAT:6513. Same as STAT:6514.

**PSQF:6245 Applied Multivariate Analysis** 3 s.h.

**PSQF:6246 Design of Experiments** 4 s.h.

**PSQF:6247 Nonparametric Statistical Methods** 3 s.h.
Selected nonparametric methods; one- and two-sample location tests and estimation methods, measures of association, analyses of variance; emphasis on relationships to classical parametric procedures. Prerequisites: PSQF:6243 or STAT:3120. Same as STAT:6547.

**PSQF:6249 Factor Analysis and Structural Equation Models** 3 s.h.
Foundations of exploratory and confirmatory factor analysis methods; least squares and maximum likelihood approaches; problems in factor extraction, rotation, interpretation; structural equation models via LISREL; assumptions and limitations of alternative approaches. Prerequisites: PSQF:6244 and PSQF:6246.

**PSQF:6250 Computer Packages for Statistical Analysis** 1-3 s.h.
Computer programs and systems designed to execute statistical analysis (SAS, SPSS, BMDP, and others); lectures on regression techniques, analysis of variance, multivariate techniques; practice in entering data, calling up desired programs, interpreting computer output. Prerequisites: PSQF:6243. Requirements: elementary knowledge of computer programming.

**PSQF:6251 Individual Intelligence Testing** 3 s.h.
Administration of individual intelligence tests; interpretation of test results; issues in psychological testing; factors that influence performance. Prerequisites: PSQF:4143 or PSQF:4150.
PSQF:6252 Introduction to Multivariate Statistical Methods
3 s.h.
Selected topics in multivariate analysis, including multivariate significance tests, principal components and factor analysis, discriminant analysis, canonical correlation, multivariate analysis of variance (MANOVA). Prerequisites: PSQF:6244 and PSQF:6246.

PSQF:6255 Construction and Use of Evaluation Instruments
3 s.h.
Design and construction of measures used in educational evaluation: achievement tests, attitude scales, performance measures, questionnaires; emphasis on methods of instrument development and evaluation of instrument characteristics. Prerequisites: PSQF:4143 and PSQF:6257.

PSQF:6257 Educational Measurement and Evaluation
3 s.h.
Evaluation and use of standardized tests and inventories in individual and group assessment; analyzing reliability, validity, normative data; interpreting measures of achievement, intelligence, aptitude, interests, attitudes, personality; current issues; for counselors, administrators, teachers, measurement specialists. Corequisites: PSQF:4143.

PSQF:6258 Theory and Technique in Educational Measurement
3 s.h.
Mathematical foundations, principal results, and applications of classical test theory; perspectives on conditional error variance; binomial error model and applications; introduction to generalizability theory; advanced measurement topics. Prerequisites: PSQF:6243 and PSQF:6257.

PSQF:6259 Scaling Methods
3 s.h.
Unidimensional and multidimensional scaling techniques; item response theory with a focus on polytomous models; introduction to available computer programs for scaling; applications in educational and psychological research. Prerequisites: PSQF:6262. Corequisites: PSQF:6249 and PSQF:6252.

PSQF:6262 Item Response Theory
3 s.h.
Theoretical foundations and practical applications; mathematical models and estimation techniques; emphasis on current applications and issues in testing; computer estimation programs. Prerequisites: PSQF:6243 and PSQF:6257.

PSQF:6263 Consultation Theory and Practice
3 s.h.
Review of concepts and practice of consultation and collaboration in educational and human services settings; focus on mental health, organizational, behavioral, and instructional models. Same as RCE:6263.

PSQF:6265 Program Evaluation
3 s.h.
Theoretical issues and considerations in evaluation of educational and social programs; evaluation design, methodology; metaevaluation; evaluation utilization. Same as EPLS:6266.

PSQF:6275 Constructivism and Design of Instruction
3 s.h.
Theoretical foundations of constructivism; application of constructivist principles to the design of instruction.

PSQF:6281 Cognitive Theories of Learning
3 s.h.
Theories of learning and cognition as they relate to education; development of expertise, transfer of learning, design of learning environments, use of learning technologies. Prerequisites: PSQF:6200.

PSQF:6292 Supervised Research in Educational Psychology
1-3 s.h.
Identification of research problems, development of research designs and materials, conducting of research studies; faculty-guided activity or seminars.

PSQF:6293 Individual Instruction in Psychological and Quantitative Foundations
arr.

PSQF:6299 M.A. Project: The Portfolio
3 s.h.
Individual portfolio project; reflection, revision, and presentation of educational psychology portfolio.

PSQF:6301 Human Abilities
3 s.h.
Psychology of abilities required by or developed through schooling; theories of cognitive abilities, age, sex, ethnic differences; cultivation of intelligence through schooling. Prerequisites: PSQF:4143.

PSQF:6312 Psychopathology Across the Lifespan
3 s.h.
DSM IV categories, related diagnostic issues.

PSQF:7201 Counseling Psychology Research Writing
3 s.h.
How to write scientifically in counseling psychology; qualitative and quantitative research writing, literature reviews, methodologies, discussions; APA style.

PSQF:7224 Introduction to School Psychology Practice
1-3 s.h.
Introduction to the practice of school psychology; framework for understanding role and function, legal and ethical boundaries, professional requirements; preparation for practicum.

PSQF:7237 Beginning Practicum in School Psychological Service
arr.
Supervised practicum in psychological and educational evaluation in school settings. Prerequisites: PSQF:6238 and PSQF:6251.

PSQF:7245 Evaluation of Children with ADHD and LD
arr.
Clinical experience in conducting pediatric neuropsychology examinations in the Pediatric Attention/Learning Disorders Clinic. Requirements: course on psychological testing (including IQ) and graduate psychology standing (school, counseling, rehabilitation, clinical). Same as PEDS:7245.

PSQF:7305 Psychotherapy I: Dynamic and Phenomenological Approaches
3 s.h.
Major psychodynamic and existential-phenomenological theories of personality; emphasis on implications for psychotherapy.
PSQF:7306 Psychotherapy III: Work Psychology and Career Interventions 3 s.h.
Foundations of career interventions; emphasis on major assessment instruments (vocational interests, values, abilities/skills, personality) and career counseling processes, skills, techniques.

PSQF:7309 Personality Assessment 3 s.h.
Standardized and projective techniques for personality assessment; preparation for competent administration and interpretation of varied tests and measures.

PSQF:7310 Intelligence Assessment 3 s.h.
Standardized intelligence testing; preparation to administer and interpret intelligence tests for children and adults.

PSQF:7311 Practicum in Counseling and Psychological Services for Gifted Students 1-6 s.h.
Prerequisites: RCE:4178. Requirements: course work in counseling education, counseling psychology, school psychology, educational psychology, or related fields. Same as RCE:7311.

PSQF:7313 Psychopathology in Childhood 3 s.h.
Current theories regarding the development of psychopathology in children and adolescents; current approaches to treatment for disorders in children and adolescents.

PSQF:7315 Social and Emotional Assessment of Children and Adolescents 3 s.h.
Link between personality theory, child and adolescent assessment; interpretation, integration of assessment information; record reviews, interviews, objective tests, projective techniques. Prerequisites: PSQF:6238 and PSQF:6251.

PSQF:7320 History and Systems of Psychology 3 s.h.
Philosophical underpinnings of psychology, early systems in psychology, developments in the 20th century.

PSQF:7331 Seminar: Educational Psychology I—Current Topics arr.
Intensive investigation of a specific research topic.

Supervised experience in psychological interventions, consultation, counseling in school and clinic settings. Prerequisites: PSQF:6238 and PSQF:6251 and PSQF:7237.

Experience in research facilities on campus; writing research questions, planning a research study, writing a research article.

PSQF:7345 Academic Interventions 3 s.h.
Interventions used by school and support system personnel to address academic skill deficits among children, adolescents; instructional design and delivery problems associated with deficits.

PSQF:7346 Behavioral Interventions 3 s.h.
Interventions used by school and support system personnel to address behavioral and social/emotional status of children, adolescents.

PSQF:7347 Home/School/Community: System Interventions 3 s.h.
Interventions used by school and support system personnel; focus on work with parents, siblings. Same as RCE:7347.

PSQF:7350 Seminar in Evaluation 2-3 s.h.
In-depth examination of selected topics. Prerequisites: PSQF:6265. Requirements: two courses in program evaluation.

PSQF:7352 Seminar: Behavioral Assessment and Evaluation 3 s.h.
Broadens skills of graduate students who engage in research with exceptional persons; research designs are usually taught in the Department of Psychological and Quantitative Foundations, but because of the nature of handicapping conditions and the low incidence of some handicaps, the single-subject design yields better research information. Same as EDTL:7952.

PSQF:7354 Seminar: Experimental Approaches in Counseling Research arr.
Application of experimental methodology to study of counseling and vocational phenomena.

Critical examination of current issues and problems of the professional worker in the field of educational measurement and evaluation as reflected in research literature, other professional communication media.

PSQF:7356 Process and Outcomes in Counseling Psychotherapy 3 s.h.
Advanced knowledge of the state of process and outcome research on psychotherapeutic procedures. Requirements: Ph.D. candidacy in appropriate field.

PSQF:7358 Equating and Scaling of Educational Tests 3 s.h.
Designs and methods, including linear, equipercentile, and item response theory methods; emphasis on concepts, applications to testing programs, research. Prerequisites: PSQF:6243 and PSQF:6257.

PSQF:7365 Psychotherapy II: Cognitive and Behavioral Approaches 3 s.h.
Major cognitive and behavioral theories of personality and psychotherapy; emphasis on implications for clinical practice.

PSQF:7367 Social Psychology and Social Systems 3 s.h.
Social aspects of behavior in organizations; behavioral science theory and research on organizations, system change, transformation, leadership.

PSQF:7375 Topics in Educational Measurement and Statistics 1-3 s.h.
PSQF:7380 Practicum in College Teaching  
Supervised college teaching experience in courses related to major academic areas, in collaboration with faculty course instructors.

PSQF:7385 Teaching and Learning in Higher Education  
3 s.h.
Current theoretical and empirical literature on teaching and learning in higher education; focus on development of effective teaching practice. Same as EPLS:7385, GRAD:7385, EDTL:7385, RCE:7385.

PSQF:7390 Supervision of School Psychology Practicum/Internship  
arr.
Experience supervising school psychology practicum or internship students. Requirements: Ph.D. standing.

PSQF:7393 M.A. Thesis in Psychological and Quantitative Foundations  
arr.

PSQF:7394 Supervised Research in Counseling Psychology  
1-3 s.h.

PSQF:7434 Practicum in Counseling Psychology  
3 s.h.
Supervised practice in counseling services. Prerequisites: PSQF:6223 and PSQF:6225.

PSQF:7437 Internship in School Psychology  
arr.
Supervised internship for Ph.D. students in school psychology. Requirements: completion of required courses.

PSQF:7450 Practicum in Program Evaluation  
arr.
Supervised experience in designing and implementing components of program evaluations. Prerequisites: PSQF:6265. Requirements: two courses in program evaluation.

PSQF:7452 Leadership, Consultation, and Supervision  
3 s.h.
Overview of intervention modalities other than individual and group therapy, especially those that pertain to leadership within organizations, consultation with organizations and communities, and supervision of the work of others; capstone course in counseling psychology sequence. Prerequisites: PSQF:6223 and PSQF:6225.

PSQF:7453 Advanced Practicum in Counseling Psychology  
1-3 s.h.
Supervised work in counseling services. Prerequisites: PSQF:7434.

PSQF:7455 Generalizability Theory  
3 s.h.
Analysis of variance methods applied to estimation of components of various types of measurement error variance; basic concepts, mathematical foundations, models, assumptions, designs, applications; relationships with other measurement theories. Prerequisites: PSQF:6246 and PSQF:6258.

PSQF:7457 Advanced Group Leadership Experience  
3 s.h.
Practice working in a psychotherapy group; review major theories on group psychotherapy processes, integrate empirical research on effectiveness of group work; multicultural considerations in group psychotherapy; didactic and experiential format. Prerequisites: RCE:7357.

PSQF:7458 Internship in Counseling Psychology  
arr.
Supervised work in internship setting. Prerequisites: PSQF:7434 and PSQF:7453. Requirements: Ph.D. standing in counseling psychology and completion of all requirements except dissertation.

PSQF:7465 Issues and Ethics in Professional Psychology  
3 s.h.
Professional ethics; issues in professional practice of psychology.

PSQF:7466 Psychological Services to Children, Adolescents, and Families: Legal and Ethical Standards  
3 s.h.
Review of laws at state and federal level which are related to child, adolescent, and family functioning; emphasis on APA and NASP ethical standards, application of these standards, and ethical decision making models. Recommendations: graduate student who will provide services to children, adolescents, and families.

PSQF:7493 Ph.D. Thesis in Psychological and Quantitative Foundations  
arr.
Rehabilitation and Counselor Education

Chair
Vila M. Tarvydas

Undergraduate minor: human relations
Graduate degrees: M.A. in rehabilitation and counselor education; Ph.D. in rehabilitation and counselor education
Faculty: http://www.education.uiowa.edu/rce/people
Web site: http://www.education.uiowa.edu/rce

The Department of Rehabilitation and Counselor Education prepares students to facilitate human development across the life span, to advocate for clients and students, and to serve local, national, and international communities through the delivery and creation of state-of-the-art counseling services. The department achieves these goals by advancing knowledge, skills, and attitudes appropriate for effective and ethical professional counseling practice and by conducting and disseminating related research.

The department prepares practitioners and scholars primarily at the graduate level, through degree programs in counselor education and supervision, couple and family counseling, rehabilitation and mental health counseling, rehabilitation counselor education, and school counseling. It also offers basic courses in interviewing and interpersonal skills for students in other professional and graduate programs. In addition, it offers an undergraduate minor in human relations.

Undergraduate Program of Study

- Minor in human relations

Minor

The minor in human relations is open to all University of Iowa students enrolled in undergraduate degree programs.

The minor in human relations requires a minimum of 15 s.h. of credit, including 12 s.h. earned at the University of Iowa and 12 s.h. earned in courses numbered 3000 or above. Students must maintain a g.p.a. of at least 2.50 in all courses for the minor and in all UI courses for the minor. Course work in the minor may not be taken pass/nonpass, but may count toward the minor if offered as S/U or S/F. Transfer credit must be approved by the chair of the Department of Rehabilitation and Counselor Education in order to count toward the minor.

The minor in human relations requires the following course work.

This course:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>RCE:4199</td>
<td>Counseling for Related Professions</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

At least 12 s.h. chosen from these:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>RCE:2081</td>
<td>Making a Vocational-Educational Choice</td>
<td>2-3 s.h.</td>
</tr>
<tr>
<td>RCE:4110</td>
<td>Psychology of Food and Mood</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>RCE:4111</td>
<td>Relationships and Workplace Dynamics: Keys to a Successful Career</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>RCE:4130</td>
<td>Human Sexuality</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>RCE:4131</td>
<td>Loss, Death, and Bereavement</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>RCE:4132</td>
<td>Introduction to Addictions and Impulse Control Disorders</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>RCE:4137</td>
<td>Introduction to Educating Gifted Students</td>
<td>3 s.h.</td>
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<tr>
<td>RCE:4140</td>
<td>Foundations of Leadership for Community Agencies</td>
<td>3 s.h.</td>
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<tr>
<td>RCE:4145</td>
<td>Marriage and Family Interaction</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>RCE:4162</td>
<td>Introduction to Couple and Family Therapy</td>
<td>3 s.h.</td>
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<tr>
<td>RCE:4173</td>
<td>Trauma Across the Lifespan</td>
<td>3 s.h.</td>
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<tr>
<td>RCE:4174</td>
<td>Positive Psychology</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>RCE:4175</td>
<td>Motivational Interviewing</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>RCE:4176</td>
<td>Child Abuse: Assessment, Intervention, and Advocacy</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>RCE:4177</td>
<td>Life After Service: Veterans in College</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>RCE:4178</td>
<td>Microcounseling</td>
<td>1-3 s.h.</td>
</tr>
<tr>
<td>RCE:4179</td>
<td>Sexuality Within the Helping Professions</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>RCE:4180</td>
<td>Topical Seminar for Helping Professionals</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>RCE:4185</td>
<td>Introduction to Substance Abuse</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>RCE:4187</td>
<td>Introduction to Assistive Technology</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>RCE:4190</td>
<td>Group Processes for Related Professions</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>RCE:4191</td>
<td>Advocacy: Awareness, Assertiveness, and Activism</td>
<td>arr.</td>
</tr>
<tr>
<td>RCE:4192</td>
<td>Group Leadership in Human Sexuality</td>
<td>0-3 s.h.</td>
</tr>
<tr>
<td>RCE:4193</td>
<td>Individual Instruction—Undergraduate</td>
<td>arr.</td>
</tr>
<tr>
<td>RCE:4194</td>
<td>Interpersonal Effectiveness</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>RCE:4195</td>
<td>Ethics in Human Relations and Counseling</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>RCE:4197</td>
<td>Citizenship in a Multicultural Society</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>EALL:4130</td>
<td>Introduction to Grant Writing</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>EPLS:4150</td>
<td>Leadership and Public Service I</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>EPLS:4151</td>
<td>Leadership and Public Service II</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>EPLS:4180</td>
<td>Human Relations for the Classroom Teacher (requires special permission for students not enrolled in TEP)</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>PSQF:1027</td>
<td>Mindfulness Foundations in the Helping Professions</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>PSQF:2115</td>
<td>Introduction to Counseling Psychology</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>PSQF:2116</td>
<td>Applied Child and Adolescent Psychology</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

Contact the Department of Rehabilitation and Counselor Education for more information about the minor.

Graduate Programs of Study

- Master of Arts in rehabilitation and counselor education
- Doctor of Philosophy in rehabilitation and counselor education

The department offers graduate degree programs in five major areas within rehabilitation and counselor education:

Counselor education and supervision (offered in the Ph.D.); Couple and family therapy (offered in the Ph.D.); Rehabilitation and mental health counseling (offered in the M.A.);
Rehabilitation counselor education (offered in the Ph.D.); and School counseling (offered in the M.A.). Each degree program is described below.

Upon completing a degree in the department, students are evaluated and are expected to have awareness, knowledge, and skills in the following areas:

- current definitions, professional standards, and appropriate professional practices regarding multiculturalism;
- what it means to be a multiculturally competent helping professional;
- integration of feedback into practice and professionalism in interpersonal interactions;
- personal limitations and strengths that could ultimately support or harm a client or student;
- a personal plan for future practice in the field regarding multicultural relationships.

Prospective students must meet admission requirements for the individual programs as well as the department's general admission requirements (see "Admission" toward the end of this section). Criminal background checks may be required. Applicants also must meet the admission requirements of the Graduate College; see the Manual of Rules and Regulations of the Graduate College.

**Ph.D.: Counselor Education and Supervision**

The Doctor of Philosophy program in counselor education and supervision (CES) requires 96 s.h. of graduate credit. The program provides students with knowledge and skills related to general counseling (including mental health and school counseling), teaching, consulting, supervising counselors, and conducting research. Graduates enter professional work as counselors, counselor supervisors, counselor educators, researchers and/or consultants, or work in other positions requiring expertise in human relations. Students may choose an emphasis in an area agreed upon by faculty advisors.

Counselor education and supervision graduates are prepared to teach the knowledge and skills required of professional counselors and to supervise beginning and advanced counselors, perform counseling interventions with individuals and groups, and teach human relations skills in colleges or universities. They provide professional consultation with counseling practitioners, educators, and policy makers about counseling program development and evaluation. They also may perform research that contributes to knowledge about counseling, supervision, and counselor education.

The program is accredited by the Council for Accreditation of Counseling and Related Educational Programs (CACREP). The American Counseling Association (ACA) and the Association for Counselor Education and Supervision (ACES) are the professional organizations most related to program activities.

The Ph.D. curriculum includes required courses in counseling and in research tools and applications, a minor outside the department, and a dissertation.

Most students complete their course work in three years and take a fourth year to complete the dissertation. Students who have not completed a master's degree program approved by the Council for Accreditation of Counseling and Related Educational Programs (CACREP) may need to remedy deficiencies by taking appropriate course work at the master's degree level.

The Ph.D. program in counselor education and supervision requires the following work.

**REQUIRED COURSES**

All of these:

- RCE:7255 Advanced Career Development and Counseling (or equivalent) 3 s.h.
- RCE:7347 Home/School/Community: System Interventions 3 s.h.
- RCE:7353 Advanced Counseling and Psychotherapy 3 s.h.
- RCE:7357 Advanced Group Counseling and Psychotherapy 3 s.h.
- RCE:7360 Advanced Practicum in Counseling (section 2) 3 s.h.
- RCE:7380 Practicum in College Teaching 3 s.h.
- RCE:7385 Teaching and Learning in Higher Education 3 s.h.
- RCE:7400 Seminar: Ethics and Issues in Counseling 3 s.h.
- RCE:7448 Integrated Developmental Theory and Counseling 3 s.h.
- RCE:7451 Advanced Multiculturalism 3 s.h.
- RCE:7454 Supervision Theory and Practice 3 s.h.
- RCE:7455 Practicum in Clinical Supervision 3 s.h.
- RCE:7457 Seminar: Professional Orientation to Counselor Education and Supervision 3 s.h.
- RCE:7458 Seminar: Current Issues and Trends in Counselor Education and Supervision 4 s.h.
- RCE:7459 Seminar: Leadership and Advocacy in Counselor Education and Supervision 3 s.h.
- RCE:7465 Internship in Counselor Education (at least 240 hours) 3 s.h.

At least one advanced course in psychological or educational measurement

**REQUIRED PH.D. RESEARCH COURSES**

Students must complete a specific sequence of research courses which include distributed course work in both qualitative and quantitative areas. They select from doctoral research courses listed at RCE Doctoral Research Requirements.

**MINOR AREA**

Students take a series of courses (typically a minimum of three) in an area of study outside the Department of Rehabilitation and Counselor Education. They select course work in collaboration with their minor area advisor and their major advisor.

**MASTER’S THESIS PROJECT OR EQUIVALENT**

Students are required to submit a previously conducted master's thesis for faculty review and approval or to complete a new supervised experiential research project before taking comprehensive exams.

Students without an approved M.A./M.S. thesis enroll in the following.

- RCE:6394 M.A. Equivalency Research 1-3 s.h.
COMPREHENSIVE EXAMINATION
The comprehensive examination consists of an oral defense of a student's portfolio, which covers six professional competency domains in counselor education, and an exam on the minor area. The examination may be taken during a student's final semester of course work, which typically includes an internship.

DISSERTATION
The major research project culminating in the doctoral thesis may be on any topic related to counseling and counselor education. The thesis advisor and the examining committee approve the topic and procedures at a formal prospectus meeting. The final oral examination on the thesis is conducted by the examining committee. Students usually earn 10 s.h. for dissertation work, but in some instances they may earn up to 15 s.h. The dissertation committee must include at least two counselor education and supervision faculty members.

RCE:7493 Ph.D. Thesis 10-15 s.h.

ADMISSION
Applicants to any of the department's graduate programs must meet the department's general admission requirements; see "Admission" toward the end of this Catalog section. In addition, applicants to the Ph.D. program in counselor education and supervision must provide evidence of successful experience in counseling or a closely related profession. Applicants without experience may be admitted if their credentials indicate exceptional strengths.

Students may be admitted for fall, spring, or summer entry, but the department strongly advises application for fall entry. Consideration of applications begins January 15 for fall entry; all application materials should be received at the University by this date.

Ph.D.: Couple and Family Therapy
The Doctor of Philosophy program in couple and family therapy (CFT) requires a minimum of 80 s.h. of graduate credit. The program prepares professionals for couple and family therapy/marriage and family therapy leadership roles in academic and research settings, administration and supervision, and clinical delivery systems. It provides couple and family therapists the opportunity to master cutting-edge theoretical knowledge; research competencies at the most innovative levels; and advanced clinical, teaching, and supervisory skills.

Ph.D. students focus on three areas of advanced training: clinical practice, quantitative and qualitative research methods, and teaching and supervision. The program is designed to meet the accreditation standards of the Commission on Accreditation for Marriage and Family Therapy Education (COAMFTE) of the American Association for Marriage and Family Therapy. Ph.D. graduates are expected to have sufficient knowledge and skill to teach and conduct research at colleges and universities; supervise other professionals; and provide clinical services to individuals, couples, and families. They also should have competencies to engage in and evaluate theory-based qualitative and/or quantitative research.

Credit for the Ph.D. program may include credit for relevant course work completed for a COAMFTE-accredited master's degree program in couple and family therapy/marriage and family therapy or the equivalent.

Each student is required to submit a curriculum plan during the first two years of the program, before completing the comprehensive examination. The CFT faculty reviews each student annually; students must fulfill departmental requirements in order to continue in the program.

Work for the Ph.D. includes course work, a comprehensive exam, a clinical or academic internship, and a dissertation. Most students complete the program's required course work in two or three years and take one or two years to complete the internship and dissertation.

The Ph.D. program in couple and family therapy requires the following work.

DEPARTMENT CORE
All of these:

RCE:7353 Advanced Counseling and Psychotherapy 3 s.h.
RCE:7357 Advanced Group Counseling and Psychotherapy 3 s.h.
RCE:7400 Seminar: Ethics and Issues in Counseling 3 s.h.
RCE:7451 Advanced Multiculturalism 3 s.h.

REQUIRED PH.D. RESEARCH COURSES
Students must complete a specific sequence of research courses which include distributed course work in both qualitative and quantitative areas. They select from doctoral research courses listed at RCE Doctoral Research Requirements.

PROGRAM REQUIREMENTS
RCE:5262 Advanced Couple and Family Therapy 3 s.h.
RCE:7361 Advanced Practicum in Couple and Family Therapy (must enroll multiple times for total of 9 s.h.) 9 s.h.
RCE:7389 Seminar in Couple Intervention Research 3 s.h.
RCE:7399 Supervision in Couple and Family Therapy 3 s.h.
RCE:7404 Seminar in Child and Adolescent Intervention Research 3 s.h.
RCE:7465 Internship in Counselor Education 3 s.h.

MINOR AREA
In collaboration with the advisor and the curriculum plan committee, each student plans a minor area and selects a minimum of 9 s.h. of course work for it.

COMPREHENSIVE EXAMINATION
The comprehensive examination consists of a portfolio of a student has compiled during the program and its oral defense once course work has been completed.

INTERNSHIP
Students must complete a clinical or academic internship.
RCE:7465 Internship in Counselor Education 3 s.h.
DISSERTATION
Work for the doctoral dissertation employs a student’s independent skills in conducting original research. The dissertation process is supervised by a student’s advisor. Depending on a student’s research questions, the dissertation may require quantitative, qualitative, or mixed methods and may involve data collection or the secondary analysis of an existing data set. The thesis advisor and the examining committee approve the topic and procedures at a formal prospectus meeting. The final oral examination on the thesis is conducted by the examining committee.

RCE:7493 Ph.D. Thesis 10-15 s.h.

ADMISSION
Applicants to any of the department’s graduate programs must meet the department’s general admission requirements; see “Admission” toward the end of this Catalog section.

Applicants should have a graduate g.p.a. of at least 3.00 and a Graduate Record Exam (GRE) General Test combined verbal and quantitative score of at least 300 on the revised test or at least 1,100 on the old test. They also must hold a master’s degree in couple and family therapy/marriage and family therapy from a Commission on Accreditation for Marriage and Family Therapy Education (COAMFTE)-accredited program or the equivalent.

Students are admitted for fall entry. All application materials should be received at the University on or before December 31, when the faculty begins evaluating applications. The program requires an interview with the faculty, in person or by telephone. Generally, the interview is scheduled once complete application materials have been received.

M.A.: Rehabilitation and Mental Health Counseling
The program prepares professional counselors to provide assistance in psychological wellness, employment, independent living, and personal or economic development to persons with disabilities and other individuals who encounter barriers in meeting their own functional needs. It also prepares counselors in mental health counseling/psychiatric rehabilitation to obtain licensure as professionals who provide services in mental health settings.

Rehabilitation and mental health counselors work in a variety of settings, including public agencies such as state vocational rehabilitation programs and Veterans Affairs vocational rehabilitation programs; independent living centers; community-based rehabilitation centers and supported employment; community mental health centers; psychiatric rehabilitation programs; and private-for-profit worker’s compensation and insurance rehabilitation agencies. They provide interventions designed to help persons with disabilities adapt to the demands of their environments. They also prepare the environments to accommodate an individual’s needs. Assessment, personal and vocational counseling, development of rehabilitation and treatment plans, case management, service coordination, psychosocial adjustment, job development, placement, and follow-up are typical services that rehabilitation and mental health counselors provide.

The M.A. program in rehabilitation and mental health counseling is accredited by the Council on Rehabilitation Education (CORE) and the Council for Accreditation of Counseling and Related Educational Programs (CACREP) in clinical mental health counseling.

Graduates of the M.A. program are eligible for certification by the Commission on Rehabilitation Counselor Certification (CRCC) and the National Board for Certified Counselors. By completing the program’s course work, students also complete the courses they must take in order to apply for licensure as mental health counselors in Iowa.

The Master of Arts program in rehabilitation and mental health counseling requires a minimum of 60 s.h. of graduate credit. Full-time students can complete the program in approximately 21 months (four semesters plus two summer sessions).

The M.A. curriculum blends academic work with supervised clinical experiences. Students take three semesters of practicum concurrently with academic courses. The program concludes with a full-time internship (40 hours per week) during a spring semester. Students are assigned to rehabilitation and community mental health agencies or facilities that meet CORE and CACREP accreditation standards and that have programs or clientele who match a student’s interests and educational objectives. Clinical placements require criminal background checks.

Supervised practicums, internships, and comprehensive examinations are not offered during summer sessions.

The M.A. program in rehabilitation and mental health counseling requires the following work.

DEPARTMENT REQUIREMENTS
All of these:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>RCE:5202</td>
<td>Introduction to Group Counseling</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>RCE:5221</td>
<td>Theories of Counseling and Human Development</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>RCE:5250</td>
<td>Multiculturalism in Helping Professions (or equivalent)</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>RCE:5270</td>
<td>Issues and Ethics in Counseling</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>RCE:5276</td>
<td>Research in Rehabilitation and Mental Health Counseling</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>RCE:5278</td>
<td>Applied Microcounseling</td>
<td>3 s.h.</td>
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</tbody>
</table>

PROGRAM REQUIREMENTS
All of these:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>RCE:5210</td>
<td>Rehabilitation Client Assessment</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>RCE:5241</td>
<td>Introduction to Rehabilitation and Mental Health Counseling</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>RCE:5247</td>
<td>Medical Aspects of Disability</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>RCE:5248</td>
<td>Diagnosis and Treatment Planning for Psychiatric Rehabilitation</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>RCE:5249</td>
<td>Psychiatric Disorders and Interventions</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>RCE:6341</td>
<td>Job Development Placement and Follow-up</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>RCE:6342</td>
<td>Psychosocial and Developmental Aspects</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

CLINICAL PRACTICE
All of these:
Ph.D.: Rehabilitation Counselor Education

The Doctor of Philosophy program in rehabilitation counselor education requires a minimum of 90 s.h. of graduate credit. The program prepares professionals for leadership roles in rehabilitation counselor education, research, administration, and service delivery systems. It provides rehabilitation counselors the opportunity to master knowledge; clinical, teaching, and supervisory skills; and research competencies at the most advanced levels.

Ph.D. students focus on three areas of advanced development: rehabilitation counselor education and supervision, research, and professional practice. The program is flexible, permitting students to pursue individualized plans of study within the required curriculum. Ph.D. graduates are expected to have sufficient knowledge and skill to teach at colleges and universities, supervise other professionals, and provide clinical services to clients. They also should have competencies to engage in and evaluate theoretical, qualitative, and quantitative research.

Each student is required to submit a curriculum plan. The rehabilitation counseling faculty reviews each student annually. Students must meet the department's requirements in order to continue in the program.

The 90 s.h. required for the degree may include credit for relevant course work completed for a master's degree. This combination of master's and doctoral course work ensures exposure to vocational and psychiatric rehabilitation as well as to independent living rehabilitation and community-based counseling processes, concepts, programs, and services.

Students who are not eligible for certification by the Commission on Rehabilitation Counselor Certification (CRCC) may be required to take courses to become eligible.

Most students complete their course work and comprehensive exam in three years and take a fourth year to complete the dissertation.

The Ph.D. program in rehabilitation counselor education requires the following work.

DEPARTMENT CORE

All of these:

- RCE:7255 Advanced Career Development and Counseling (or equivalent) 3 s.h.
- RCE:7353 Advanced Counseling and Psychotherapy 3 s.h.
- RCE:7357 Advanced Group Counseling and Psychotherapy 3 s.h.
- RCE:7400 Seminar: Ethics and Issues in Counseling 3 s.h.

PROGRAM REQUIREMENTS

Students are expected to have completed core rehabilitation counseling requirements during master's degree work (see "M.A.: Rehabilitation and Mental Health Counseling" above). The advisor and program faculty determine which master's-level courses must be taken to correct deficiencies. Students also must complete the following.

- RCE:7360 Advanced Practicum in Counseling (section 1) 3 s.h.
- RCE:7369 Advanced Seminar in Rehabilitation Counseling 3 s.h.
- RCE:7380 Practicum in College Teaching 1-3 s.h.
- RCE:7385 Teaching and Learning in Higher Education 3 s.h.
- RCE:7450 Advanced Social Psychology of Disability 3 s.h.
- RCE:7454 Supervision Theory and Practice 3 s.h.
- RCE:7455 Practicum in Clinical Supervision 3 s.h.
- RCE:7462 Advanced Practicum in Clinical Teaching 3 s.h.
- PSQF:6217 Seminar in College Teaching 1-3 s.h.
REQUIRED PH.D. RESEARCH COURSES
Students must complete a specific sequence of research courses which include distributed course work in both qualitative and quantitative areas. They select from doctoral research courses listed at RCE Doctoral Research Requirements.

MINOR AREA
Students plan a minor area in collaboration with their major advisor and curriculum plan committee. The minor area must be outside the department. Students select a minimum of 9 s.h. of course work in the minor area, in collaboration with their minor advisor and with the approval of their curriculum plan committee.

COMPREHENSIVE EXAMINATION
The comprehensive examination consists of three exams that total nine hours. They cover the department core (three hours), rehabilitation counseling—theory, practice, and research (three hours), and the minor area (three hours).

DISSERTATION
The dissertation is a major research study planned in collaboration with a student's major advisor. At least two rehabilitation counseling faculty members serve on the dissertation committee; one of them chairs or co-chairs the committee.

RCE:7493 Ph.D. Thesis 10-15 s.h.

ADMISSION
Applicants to any of the department's graduate programs must meet the department's general admission requirements; see "Admission" toward the end of this Catalog section.

Applicants to the Ph.D. program in rehabilitation counselor education should have a master's degree in rehabilitation counseling or a related area and a graduate g.p.a. of 3.00 or higher. One year of full-time work experience in rehabilitation or a related field is strongly encouraged. Applicants should submit a written statement of purpose for pursuing the Ph.D. in rehabilitation counselor education and a statement of personal career objectives, official score on the Graduate Record Exam (GRE) General Test, and three letters of recommendation. A personal interview is required.

Applications are accepted for fall, spring, or summer entry; fall entry is strongly advised. Faculty consideration of applications begins January 15 for fall entry, November 15 for spring entry, and April 1 for summer entry.

M.A.: School Counseling
The Master of Arts program in school counseling requires a minimum of 54 s.h. of graduate credit. The program prepares individuals to work effectively as counselors in K-12 school settings. It is accredited by the Council for Accreditation of Counseling and Related Educational Programs (CACREP).

Successful graduates are eligible for K-12 school counselor licensure in Iowa. Students may apply to the National Board for Certified Counselors at the completion of their programs. They also may earn an endorsement in talented and gifted education or a certificate from the Belin-Blank Center for Gifted Education by taking additional course work.

During the first few semesters, students take core cognate courses, including course work on gifted education, and the microcounseling clinical skills laboratory. Then they enter a counseling practicum followed by an internship.

Students who enter without teaching licensure are required to take additional course work in education—EPLS:3000 Foundations of Education, EDTL:4900 Foundations of Special Education, and PSQF:6200 Educational Psychology or equivalent—to meet school counselor licensure standards. Students are expected to complete at least 100 clock hours in practicum and 600 clock hours in internship activities in an approved school setting, under the supervision of an experienced licensed school counselor and a University faculty supervisor.

Students must complete program and department core courses as outlined on the Department of Rehabilitation and Counselor Education web site before enrolling in RCE:6300 Practicum in School Counseling for the spring semester of their second year in the program. All students are required to complete a background check the spring before they enroll in the practicum. Students who are not licensed teachers must complete course work in education before enrolling in the practicum.

Each student's progress is reviewed periodically by the major advisor. Students who have successfully completed all prerequisites for RCE:6300 Practicum in School Counseling are reviewed in the semester before they take the practicum course, to assure that they are prepared for it. During the summer, students are evaluated to assure their readiness for the internship RCE:6321 Internship in Elementary School Counseling or RCE:6322 Internship in Secondary School Counseling, which requires assignment in approved schools for the fall and/or spring semesters.

The M.A. program in school counseling requires the following work.

REQUIRED COURSES
The following schedule of required courses reflects a three-year program of study. Students who do not have teacher licensure are required to complete at least three additional courses in education before the third year of classes.

RCE:4137 Introduction to Educating Gifted Students 3 s.h.
RCE:5200 Professional School Counselor 3 s.h.
RCE:5202 Introduction to Group Counseling 3 s.h.
RCE:5203 Career Development 3 s.h.
RCE:5204 School Culture and Classroom Management for School Counselors 3 s.h.
RCE:5221 Theories of Counseling and Human Development Across the Life Span 3 s.h.
RCE:5222 Counseling Children and Adolescents in Schools 3 s.h.
RCE:5223 Counseling Gifted and Talented Students 3 s.h.
RCE:5230 School Counseling Program Leadership and Management 3 s.h.
RCE:5250 Multiculturalism in Helping Professions 3 s.h.
RCE:5254 Assessment and Appraisal 3 s.h.
RCE:5256 Action Research: School-Based Field Research 3 s.h.
RCE:5278 Applied Microcounseling 3 s.h.
RCE:6300 Practicum in School Counseling 3 s.h.
RCE:6321 Internship in Elementary School Counseling 3 s.h.
RCE:6322 Internship in Secondary School Counseling 3 s.h.
EDTL:4940 Characteristics of Disabilities 3 s.h.
EPLS:6206 Research Process and Design 3 s.h.

**COMPREHENSIVE EXAMINATION**

All students are required to take comprehensive exams for the departmental core and for school counseling during their final semester of internship. Comprehensive exams include a written six-hour exam in the departmental core and school counseling. An oral exam also is required unless waived by the comprehensive exam committee.

**ADMISSION**

Applicants to any of the department's graduate programs must meet the department's general admission requirements; see "Admission" below. Applicants to the M.A. program in school counseling should have an undergraduate g.p.a. of 3.00 or higher. The department prefers that applicants have one year of teaching experience or successful experiences with children and/or adolescents, which they must document in a written statement. Graduate Record Exam (GRE) General Test scores must be on file at the University.

Applications are accepted for summer and fall entry and should be submitted by January 25th.

**Admission**

Applicants to any of the department's degree programs must satisfy the following admission requirements.

Applicants also must meet the admission requirements of the Graduate College; see the Manual of Rules and Regulations of the Graduate College.

Applicants must submit the following:

- a completed graduate application form;
- copies of official transcripts of all previous undergraduate and graduate college work;
- official report of Graduate Record Exam (GRE) General Test verbal and quantitative scores;
- a statement of an applicant's reasons for seeking an advanced degree in the department, including a statement of personal career objectives;
- three current letters of recommendation from persons qualified to assess the applicant's prospects for completing the M.A. or Ph.D. and to assess the applicant's commitment to the profession.

The department may request a personal or telephone interview.

The following admission standards are considered for individual program admission decisions.

M.A. applicants should have an undergraduate g.p.a. of at least 3.00.

Ph.D. applicants should have a graduate g.p.a. of at least 3.00; those who have not been granted a graduate degree should have an undergraduate g.p.a. of at least 3.00.

International applicants must score at least 550 (paper-based) or 80 (Internet-based) on the Test of English as a Foreign Language (TOEFL). The department may require applicants with lower TOEFL scores to complete University of Iowa course work in English language fluency. TOEFL scores must be submitted with the application for admission.

Typically, doctoral students are not admitted unless they have completed a master's degree in counseling or a related field. Relevant work experiences are important. Students who are accepted without a related master's degree must complete core master's-level course work before taking advanced Ph.D. courses. Required remedial courses and experiences are determined in consultation with the advisor and are included in a student's curriculum plan.

The criteria listed above are minimum standards for admission. Final admission decisions are made by faculty committees. Some of the department's degree programs have additional admission requirements; see the descriptions of the individual degree programs earlier in this Catalog section.

**APPLICATION**

For application materials, visit Iowa Graduate Admissions and the Department of Rehabilitation and Counselor Education web site.

Applications must be complete before they can be reviewed. Applicants are responsible for providing a complete application dossier; to check on whether an application dossier is complete, contact the College of Education Office of Education Services.

Applications are notified in writing after their applications have been reviewed. Applicants who are accepted must reply in writing in order to maintain their admission status.

**MAINTAINING GOOD STANDING**

All graduate students must meet the following standards in order to remain in their degree programs and advance to candidacy and remain a candidate for a degree:

- maintain a g.p.a. of at least 3.00;
- successfully complete a practicum, internship, or equivalent professional experience;
- maintain professional behavior consistent with the ACA Code of Ethics (American Counseling Association) for students enrolled in a counseling graduate program, or the AAMFT Code of Ethics (American Association for Marriage and Family Therapy) for graduate students in couples and family therapy, and any additional code of professional ethics adhered to in any agency in which the student completes a practicum or internship;
- demonstrate progress toward the degree through successful completion of semester hours specified in the curriculum plan and active registration each session (exceptions may be approved by the advisor).

Each student's academic and professional progress is reviewed annually. A written report is provided to the student and a copy is placed in his or her department file.

**PROBATIONAL STATUS**

M.A. and Ph.D. students who earn a cumulative g.p.a. lower than 3.00 are placed on probational status and are
notified in writing. Students on probational status have two consecutive sessions to raise their grade-point average to the established standard. If that requirement is not met, a student may be removed from the program. Each student is allowed one probational status during his or her program of study.

Financial Support

Students in the department may apply for a wide variety of graduate assistantships. For example, many of the University's student service units award graduate assistantships. Applicants for assistantships should contact the department or the coordinator of the particular graduate program they plan to enter.

Applicants seeking fellowships or assistantships should complete their applications as early as possible.

Facilities

An on-campus counseling suite serves as a laboratory for training. In addition, a wide variety of supervised clinical experiences are available in community agencies, schools, and colleges, as well as throughout the University. Internships may be completed at approved sites nationwide.

Courses

Lower-Level Undergraduate

RCE:1029 First-Year Seminar 1 s.h.
Small discussion class taught by a faculty member; topics chosen by instructor; may include outside activities (e.g., films, lectures, performances, readings, visits to research facilities). Requirements: first- or second-semester standing.

RCE:1030 Belin-Blank Center Seminar 1 s.h.
Presentations and discussions by University resource experts and Belin-Blank Center for Gifted Education staff. Requirements: Belin-Blank Center student.

RCE:2081 Making a Vocational-Educational Choice 2-3 s.h.
Vocational decision-making process, self-evaluation, exploration of the world of work; for students who are uncertain about their educational and vocational goals.

Upper-Level Undergraduate and Graduate

RCE:4081 ePortfolio Production 1-2 s.h.
Experience producing an ePortfolio and uploading it to the Internet; practical experience using digital tools, content and design related to ePortfolio production; experience using a web browser and access to the Internet and to a digital camera or scanner. Requirements: able to perform basic computer functions and use a World Wide Web browser. Same as PSQF:4081, EALL:4081, EDTL:4081, EPLS:4081.

RCE:4110 Psychology of Food and Mood 3 s.h.
Neurobehavioral and psychological determinants of food preference, behavior, and mood management; cultural meanings of food in North America, obesity, dieting, disordered eating; how we use food as a means of managing or damaging our food and health.

RCE:4111 Relationships and Workplace Dynamics: Keys to a Successful Career 3 s.h.
Examination of human relations, workplace organizational structures, and workplace expectations of team work, diversity, conflict, conflict resolution and communication; leadership, employees' effect on leadership, individual self-awareness, team structures, leadership habits, behaviors and organizational influences.

RCE:4119 Family Issues in Giftedness 1 s.h.
Family dynamics and issues that arise when one or more children are identified as gifted; parent/child, sibling, school/family relationships.

RCE:4120 Psychology of Giftedness 3 s.h.
Theories of learning, child development, motivation; issues unique to gifted education. Same as PSQF:4120.

RCE:4121 Identification of Students for Gifted Programs 3 s.h.
Interpretation of standardized tests and other measurement instruments used to identify academic talent and program effectively for grades K-12; ability, aptitude, achievement tests; current issues in the uses of various instruments. Same as PSQF:4121.

RCE:4122 Gender Issues and Giftedness 1 s.h.
Effect of gender on development of giftedness; differential needs of girls, boys; strategies for effective teaching, gender equity.

RCE:4124 Ethnic and Cultural Issues and Giftedness 1 s.h.
Effect of ethnicity and culture on development of giftedness; special needs of Black, Hispanic, Native American, and Asian gifted students; strategies for identification, programming.

RCE:4125 Counseling and Psychological Needs of the Gifted 1 s.h.
Psychological aspects of giftedness, counseling techniques appropriate for gifted children, adolescents; socio-emotional concerns, career development, underachievement. Same as PSQF:4125.

RCE:4126 Cognitive and Affective Needs of Underachieving Gifted 1 s.h.
Diagnostic strategy for identifying types of underachievement, teaching and counseling interventions appropriate for each. Same as PSQF:4126.

RCE:4127 Research and Theory in Talent/Giftedness 1 s.h.
Biennial research symposium. Same as PSQF:4127.

RCE:4128 Advanced Leadership Seminar in Gifted Education 1 s.h.
Development of administrative policies and programming based on empirical research; for experienced leaders in gifted education.

**RCE:4129 Creativity: Issues and Applications in Gifted Education**  
1 s.h.  
Theories that underpin contemporary definitions of creativity; instruments developed to measure creativity; activities in the school environment that enhance or inhibit student creativity. Same as PSQF:4129.

**RCE:4130 Human Sexuality**  
3 s.h.  
How young adults experience, discuss, and engage in sex; short essays.

**RCE:4131 Loss, Death, and Bereavement**  
3 s.h.  
Psychological study of death, grief, loss, bereavement, and coping from a multidimensional and multidisciplinary perspective; loss and grief as natural experiences that are not often explicitly discussed; overview of topics relating to death, including multicultural attitudes toward death, death practices, theories on loss and bereavement, and grieving throughout the life cycle; hospice and palliative care, suicide, and making meaning of life out of death; development of critical thinking skills by engaging in empirically-based discussions.

**RCE:4132 Introduction to Addictions and Impulse Control Disorders**  
3 s.h.  
Exploration of addictions and impulse control disorders; legal, social, physical, and emotional issues related to addictions and impulse control disorders.

**RCE:4137 Introduction to Educating Gifted Students**  
3 s.h.  
Fundamental issues such as curriculum, counseling, family issues, gender and minority issues. Same as EDTL:4137.

**RCE:4140 Foundations of Leadership for Community Agencies**  
3 s.h.  
Preparation to become effective employees and leaders; emphasis on leadership roles in clinical and other human service or health care settings; how leadership transcends job title associated with high work performance; experiential activities that illustrate key didactic concepts and didactic lecture review, written assignments, experiential assignment, in-depth discussions illustrating key concepts.

**RCE:4145 Marriage and Family Interaction**  
3 s.h.  
Contemporary American marriage, family relationships; mate selection.

**RCE:4162 Introduction to Couple and Family Therapy**  
3 s.h.  
Evolution of the family therapy movement and issues related to functional and dysfunctional family systems; significant models of family therapy and specific techniques.

**RCE:4173 Trauma Across the Lifespan**  
3 s.h.  
Current theory and practice models related to trauma and crisis intervention; overview of multi-system level definitions of trauma experience (historical, individual, interpersonal, family, organizational, community, global); various approaches to trauma response theory; unique contributions that counselors offer (strength, resiliency, coping); commitments to multicultural and systems factors; macro- to micro-level understanding of trauma.

**RCE:4174 Positive Psychology**  
3 s.h.  
Promotion of human potential as a focus for counseling professionals that provides a supplement to diagnosis and treatment of pathology; how to achieve happiness, resilience, wellness, and life satisfaction through enhancement of human strengths and virtues.

**RCE:4175 Motivational Interviewing**  
3 s.h.  
Motivational Interviewing (Miller & Rollnick) and the stages of change model.

**RCE:4176 Child Abuse: Assessment, Intervention, and Advocacy**  
3 s.h.  
Preparation for work involving abused children or child abuse issues; appropriate for careers in counseling, education, health sciences, law, psychology, social work, and so forth; interactive approach.

**RCE:4177 Life After Service: Veterans in College**  
3 s.h.  
Introduction to various resources on campus related to increasing student veterans' success as college students; topics and assignments specifically tailored to military service-connected students (e.g., ROTC students, national guard or reserve military members, active duty veterans); topics include vocational rehabilitation, GI Bill, current events, and health care (sleep, TBI, traumatic stress responses, substance abuse); development of academic skills for writing, more effective studying, improved reading and note taking.

**RCE:4178 Microcounseling**  
1,3 s.h.  
Basic skills of listening, responding, empathy, focus; advanced skills of meaning, confrontation, reframing, directives, action skills.

**RCE:4179 Sexuality Within the Helping Professions**  
3 s.h.  
Relationship between sexuality and mental health; varied ethical and professional issues in sex therapy.

**RCE:4180 Topical Seminar for Helping Professionals**  
arr.  
Topics for the continuing education of counselors and related professionals.

**RCE:4185 Introduction to Substance Abuse**  
3 s.h.  
Theories of addiction and pharmacology of psychoactive drugs; legal, familial, biological, multicultural, historical issues related to substance use and misuse.

**RCE:4187 Introduction to Assistive Technology**  
3 s.h.  
How assistive technology can be used for attainment of goals in education or work. Same as EDTL:4987.
RCE:4188 Practicum in Teaching and Curriculum Development in Gifted Education

Experience in developing course materials for classes offered through the Belin-Blank Center for Gifted Education. Same as EDTL:4188.

RCE:4190 Group Processes for Related Professions

Small-group procedures for personal and organizational development in educational settings; discussions of theoretical and ethical issues, multicultural considerations, and research findings supplemented with demonstrations; participation in a personal growth group.

RCE:4191 Advocacy: Awareness, Assertiveness, and Activism

Introduction to advocacy skills—communicate, convey, negotiate or assert interests, desires, needs, and rights for self or others; opportunity to design and implement a plan of change; ecological model of human interaction that suggests a person must be viewed within context of his or her environment(s); how having power on a personal and social level impacts one's environment and is central to a person's well-being; advocacy as a central function of helping professions.

RCE:4192 Group Leadership in Human Sexuality

How to teach human sexuality; how to help students achieve an open-minded yet responsible attitude toward their own and others' sexuality. Prerequisites: RCE:4130.

RCE:4193 Individual Instruction—Undergraduate

RCE:4194 Interpersonal Effectiveness

Paradigms and techniques that enhance interpersonal relationship skills.

RCE:4195 Ethics in Human Relations and Counseling

Morality and ethics; ethical issues; models and techniques for effective ethical decision making in personal and professional interactions.

RCE:4197 Citizenship in a Multicultural Society

Human relationships in the context of societal oppressions such as racism, sexism, able-bodiedness, and heterosexism.

RCE:4199 Counseling for Related Professions

Counseling theories and techniques; ethical and multicultural considerations; small-group discussions, demonstrations, lectures.

Graduate

RCE:5200 Professional School Counselor

Professional identity of school counselors, K-12 school counseling program delivery systems, legal and ethical issues. Requirements: admission to school counseling program.

RCE:5202 Introduction to Group Counseling


RCE:5203 Career Development

Preparation for counselors and student affairs professionals; career development concepts and theories, family and work, career counseling goals and objectives, exemplary techniques and materials, career program planning, evaluation procedures. Requirements: rehabilitation and counselor education enrollment.

RCE:5204 School Culture and Classroom Management for School Counselors

American public elementary and secondary schools and the school counselor's role; classroom management for school counselors.

RCE:5210 Rehabilitation Client Assessment

Process and practice of assessing persons with disabilities for rehabilitation plan development and decision making; multicultural and ethical considerations.

RCE:5221 Theories of Counseling and Human Development Across the Life Span


RCE:5222 Counseling Children and Adolescents in Schools

Theory and practice of school-based counseling interventions; child and adolescent development; prevention; special topics. Prerequisites: RCE:5221 or RCE:5278.

RCE:5223 Counseling Gifted and Talented Students

Learning theories and best practices related to school counseling of gifted and talented students; academic, career, and personal/social development. Prerequisites: RCE:4137.

RCE:5226 Assessment of Giftedness

Training and practice in assessment of gifted children. Same as PSQF:5226.

RCE:5230 School Counseling Program Leadership and Management

Comprehensive K-12 school counseling program components and structures; program leadership, planning, accountability; behavioral consultation and collaboration; ethical, multicultural, family considerations. Corequisites: RCE:6321 or RCE:6322.

RCE:5237 Seminar in Gifted Education

Teaching and counseling needs of gifted students K-12; intensive 10-day residential program. Requirements: work as teacher with Belin Fellowship.

RCE:5238 Advanced Seminar in Gifted Education
Supervisory, administrative, and research issues; fellowships for seminar participants. Prerequisites: RCE:5237.

**RCE:5241 Introduction to Rehabilitation and Mental Health Counseling** 3 s.h.
Historical, philosophical, legislative, societal, and multicultural overview of rehabilitation and mental health process and practice in community-based settings; roles of rehabilitation and mental health professionals, nature of agencies, resources, contemporary issues and ethics.

**RCE:5247 Medical Aspects of Disability** 3 s.h.
Medical evaluation as part of the rehabilitation process; body systems, medical terminology, medical description of disabilities; functional limitations; projection of potential for rehabilitation and mental health applied to planning and placement.

**RCE:5248 Diagnosis and Treatment Planning for Psychiatric Rehabilitation** 3 s.h.
Psychiatric conditions, their diagnostic criteria using the DSM-IV-TR, treatment planning considerations; medical and psychiatric rehabilitation models, interrelationship in providing services to persons with psychiatric disabilities; functional assessment and client-driven rehabilitation planning for community reintegration. Requirements: rehabilitation and counselor education enrollment.

**RCE:5249 Psychiatric Disorders and Interventions** 3 s.h.
Description, classification, and theoretical perspectives related to psychiatric disorders; models of intervention in community-based settings.

**RCE:5250 Multiculturalism in Helping Professions** 3 s.h.
Theory and application of multicultural competency in the helping professions; ethical treatment of clients in the context of a multicultural diverse society; knowledge, skill, self-awareness components relevant for helping practitioners. Requirements: rehabilitation and counselor education enrollment.

**RCE:5254 Assessment and Appraisal** 3 s.h.
Didactic experiences related to individual and group assessment and appraisal; for school professionals.

**RCE:5256 Action Research: School-Based Field Research** 3 s.h.
Field-based research experiences in school settings; students conceptualize, design, conduct, and articulate school-based research findings. Prerequisites: RCE:5254.

**RCE:5262 Advanced Couple and Family Therapy** 3 s.h.
Introduction to couple and family therapy, theory, ethics, and techniques as applied to problems of marriage and family over life span; multicultural considerations. Requirements: advanced graduate standing. Recommendations: RCE:4162.

**RCE:5270 Issues and Ethics in Counseling** 3 s.h.
Ethical standards and decision making; current issues; ethical, legal, and multicultural considerations for counseling in agencies and schools; emphasis on professional practice.

**RCE:5276 Research in Rehabilitation and Mental Health Counseling** 3 s.h.
Current state of counseling practice and emphasis on accountability as a professional quality; need for counselors to be knowledgeable and skillful in identifying and using “what works” in counseling endeavors; introduction to major principles, concepts, and practices in social science research, including program evaluation; preparing counselors-in-training as future research consumers. Recommendations: rehabilitation and mental health counseling major.

**RCE:5278 Applied Microcounseling** 3 s.h.
Development of basic and advanced counseling skills; preparation for work in education and community settings.

**RCE:5280 Topical Seminar in RCE** arr.
Special topics dealing with contemporary problems of concern to counselors in specific settings.

**RCE:6236 Counseling and Psychotherapy for Persons with Disabilities** 3 s.h.
Preparation for future psychologists and counselors to work with persons with disabilities throughout the lifespan; examination of disability issues within the context of present and past theoretical constructs. Requirements: enrollment in psychological and quantitative foundations or rehabilitation and counselor education. Same as PSQF:6236.

**RCE:6263 Consultation Theory and Practice** 3 s.h.
Review of concepts and practice of consultation and collaboration in educational and human services settings; focus on mental health, organizational, behavioral, and instructional models. Same as PSQF:6263.

**RCE:6293 Individual Instruction--Graduate** arr.

**RCE:6300 Practicum in School Counseling** 3 s.h.
Supervised experience counseling and consulting in elementary and secondary school settings. Requirements: completion of school counseling core courses.

**RCE:6321 Internship in Elementary School Counseling** 3 s.h.
Supervised placement in an elementary school setting; performance of tasks, responsibilities of an elementary school counselor. Prerequisites: RCE:6300. Requirements: completion of all required school counseling courses.

**RCE:6322 Internship in Secondary School Counseling** 3 s.h.
Supervised placement in a secondary school setting; performance of tasks, responsibilities of a secondary school counselor. Prerequisites: RCE:6300. Requirements: completion of all required school counseling courses.

**RCE:6323 Internship in Middle School Counseling** 3 s.h.
Supervised placement in a middle school setting; performance of tasks and responsibilities of a middle school counselor. Prerequisites: RCE:6300. Requirements: completion of all required school counseling courses.

**RCE:6341 Job Development Placement and Follow-up**

Obtaining appropriate jobs for individuals with disabilities who have received rehabilitation services; client, counselor, employer, job specifications.

**RCE:6342 Psychosocial and Developmental Aspects**

Dynamics of adjustment and coping for persons with chronic illness or those with disabilities through the life span; somatopsychological, psychosocial, and developmental perspectives on disability.

**RCE:6348 Prepracticum in Rehabilitation and Mental Health Counseling**

Counseling laboratory to promote knowledge, skills, and awareness of effective and ethical counseling methods, and fundamentals of helping relationships and case management. Prerequisites: RCE:5221. Corequisites: RCE:5278.

**RCE:6349 Practicum in Rehabilitation and Mental Health Counseling**

Experience in a community agency serving individuals with disabilities and mental health disorders, supervised by a certified rehabilitation counselor in an approved site. Prerequisites: RCE:6348.

**RCE:6350 Internship I: Rehabilitation and Mental Health Counseling**

Experience to enhance competency in agencies and with persons represented in student's specialty area. Prerequisites: RCE:6349.

**RCE:6352 Internship II: Rehabilitation and Mental Health Counseling**

Full-time clinical experience in rehabilitation and mental health settings; training in wide range of rehabilitation and mental health functions under supervision of a qualified M.A. counselor with appropriate credentials. Prerequisites: RCE:6350.

**RCE:6393 M.A. Thesis**

**RCE:6394 M.A. Equivalency Research**

Preparation for comprehensive examination.

**RCE:7255 Advanced Career Development and Counseling**

Major concepts and research evidence about life-span vocational behavior; theories of vocational choice, adjustment, development in a multicultural world.

**RCE:7311 Practicum in Counseling and Psychological Services for Gifted Students**

Prerequisites: RCE:4178. Requirements: course work in counseling education, counseling psychology, school psychology, educational psychology, or related fields. Same as PSQF:7311.

**RCE:7338 Essentials of Qualitative Inquiry**

Principles, processes of qualitative research in education; methods of design, data collection and analysis, interpretation, trustworthiness. Requirements: Ph.D. enrollment and introductory research course.

**RCE:7347 Home/School/Community: System Interventions**

Interventions used by school and support system personnel; focus on work with parents, siblings. Same as PSQF:7347.

**RCE:7353 Advanced Counseling and Psychotherapy**

Theories, techniques, and ethics of counseling clients with personal and interpersonal problems; ethical and multicultural considerations.

**RCE:7357 Advanced Group Counseling and Psychotherapy**

Theories and techniques of group counseling and psychotherapy; integration of theory, experience, and research in group counseling; ethical and multicultural considerations.

**RCE:7360 Advanced Practicum in Counseling**

Supervised practice in counseling; intensive analysis of counselor ethics, styles, methods. Advanced graduate standing in counselor education and consent of instructor required. Prerequisites: RCE:5221. Requirements: Ph.D. enrollment, advanced graduate standing in counselor education, and counseling introductory practicum; and concurrent enrollment in RCE:5249 for rehabilitation counselor education student.

**RCE:7361 Advanced Practicum in Couple and Family Therapy**

Opportunity to accumulate client contact and supervision hours towards graduation and licensure; conceptual and executive skills, observational skills and abilities to work as a member of a therapeutic team, awareness of how personal growth and development as a therapist impacts work with clients, comfort and motivation to learn multiple training levels provided, creation of collaborative and supportive atmosphere on all practicum levels. Requirements: enrollment in couple and family therapy program.

**RCE:7369 Advanced Seminar in Rehabilitation Counseling**

Philosophy, theory, research base, practice of rehabilitation counseling, psychology; ethical and multicultural considerations; relationship to disability studies; psychological aspects of disability, client assessment, history, systems, contemporary issues.

**RCE:7380 Practicum in College Teaching**

Supervised college teaching experience in counselor education courses; teaching in collaboration with faculty, observation and critiques of teaching, participation in course planning and evaluation procedures; ethical and multicultural considerations.

**RCE:7385 Teaching and Learning in Higher Education**

3 s.h.
Current theoretical and empirical literature on teaching and learning in higher education; focus on development of effective teaching practice. Same as PSQF:7385, EPLS:7385, GRAD:7385, EDTL:7385.

RCE:7388 Family Development 3 s.h.
Overview of research relating to family development, family structure, and cultural/ethnic diversity; how research can be applied to clinical practice; focus on strengths and challenges of families with varying structures, cultural dimensions in family functioning, developmental perspectives on family functioning, and how these factors can advance family systems based on research and practice.

RCE:7389 Seminar in Couple Intervention Research 3 s.h.
Overview of couple intervention and outcome research; focus on evidence-based couple therapies (i.e., Emotionally Focused Couple Therapy, Behavioral Couple Therapy, work of John Gottman); research addressing effectiveness and efficiency of couple interventions in treatment of couple distress issues highly comorbid with distress, including review of mental and physical health problems; research addressing factors associated with treatment outcomes.

RCE:7399 Supervision in Couple and Family Therapy 3 s.h.
Supervision of Master's-level couple and family therapy students; mentoring supervision received from supervision instructor; assignments reflect requirements for AAMFT Approved Supervisor designation; fulfills didactic requirement for AAMFT Approved Supervisor status. Requirements: enrollment in couple and family therapy program.

RCE:7400 Seminar: Ethics and Issues in Counseling 3 s.h.
Ethical, professional, and contemporary issues in counseling practice, education, and research. Requirements: rehabilitation and counselor education Ph.D. enrollment.

RCE:7404 Seminar in Child and Adolescent Intervention Research 3 s.h.
Review and analysis of pertinent literature in area of child and adolescent intervention research; stage 1-3 clinical trials and federal funding process of intervention research in family therapy and family psychology fields; focus on published outcome studies in areas of childhood disorders, Filial Therapy, Functional Family Therapy, Multisystemic Therapy, and Multi-Dimensional Family Therapy; published and unpublished outcome studies of six research groups within the last ten years and their federally funded research projects. Prerequisites: RCE:5262.

RCE:7438 Advanced Qualitative Research Seminar in Rehabilitation and Counselor Education 3 s.h.
Exploration of qualitative research at advanced theoretical, practical, and technical level, inside and outside a typical classroom environment; scholarly discussions. Prerequisites: RCE:7338.

RCE:7440 Seminar in Family-Based Play Therapy Interventions 3 s.h.
Inclusion of children in family therapy sessions; varied therapeutic strategies to effectively work with young children and their parents; employment of developmental lens (therapeutic techniques largely depend on children's age and developmental stage) and theoretical lens (many techniques are linked to certain theoretical approaches); development of therapeutic skills with application of varied therapeutic approaches in clinical work; does not train students to become play therapists and/or child therapists. Prerequisites: RCE:5262.

RCE:7444 Qualitative Research in the Multicultural Context 3 s.h.
Exploration of qualitative research in multicultural context; application of knowledge gained in introductory qualitative courses; utilization of qualitative skill sets for completion of a multicultural-focused project; multicultural field research project which may involve travel or virtual connections outside of regular class time; field experience projects with online problem-based learning activities, consultation, and virtual supervised small group work. Prerequisites: PSQF:6235 or RCE:5250 or RCE:7338.

RCE:7448 Integrated Developmental Theory and Counseling 3 s.h.
Advanced issues, theoretical perspectives, and research in human development across the life span; influential theories in human development; related implications for counseling, supervision, and research; integrated understanding of perspectives through position papers, reflection papers, and research proposal project. Requirements: graduate standing in rehabilitation and counselor education.

RCE:7450 Advanced Social Psychology of Disability 3 s.h.
Disability issues from individual and societal perspectives; psychosocial aspects of disability and disability studies; seminar. Requirements: Ph.D. enrollment.

RCE:7451 Advanced Multiculturalism 3 s.h.
Impact of culture, race, ethnicity, and intersections of identity on counseling in higher education and student affairs settings. Prerequisites: RCE:5250.

RCE:7454 Supervision Theory and Practice 3 s.h.
Conceptual models, ethics, multicultural considerations, research, and program design for counselor supervision and consultation.

RCE:7455 Practicum in Clinical Supervision array.
Supervision of students enrolled in counseling practicum. Prerequisites: RCE:7454.

RCE:7457 Seminar: Professional Orientation to Counselor Education and Supervision 3 s.h.
Professional orientation issues in counselor education and supervision; related documents, bylaws, professional expectations.

RCE:7458 Seminar: Current Issues and Trends in Counselor Education and Supervision 4 s.h.
Recent trends, including debates and findings in literature related to best practices for the profession.
RCE:7459 Seminar: Leadership and Advocacy in Counselor Education and Supervision 3 s.h.
Leadership principles and theories, including applications to counselor education; student leadership potential and skills explored through self-reflective model.

RCE:7460 Seminar: Research in Counseling 3 s.h.
Methods, examples, ethics, multicultural issues, problems of counseling research. Requirements: Ph.D. enrollment.

RCE:7461 Practicum in Research arr.
Experience designing and implementing research relevant to student's plan of study, under supervision of rehabilitation and counselor education faculty member.

RCE:7462 Advanced Practicum in Clinical Teaching 1-3 s.h.
Preparation for doctoral students to conduct didactic and experiential learning opportunities with counselors in training. Prerequisites: RCE:7454.

RCE:7465 Internship in Counselor Education 1-3 s.h.
Supervised experience in professional counseling, counselor supervision, consultation, teaching counseling; field placement and seminar.

Science Education

Chair, Department of Teaching and Learning
• John Hosp

Coordinator, Science Education
• Soonhye Park

Undergraduate major: science education (B.S.)
Graduate degrees: M.A.T. in science education; M.S. in science education; Ph.D. in science education
Faculty: http://www.education.uiowa.edu/teach/science/people
Web site: http://www.education.uiowa.edu/teach/science/home

The Science Education Program provides preparation in more than one discipline of science; a consideration of science from a philosophical, historical, and sociological perspective; an introduction to applied science (technology); and an education sequence.

Program planning in science education requires the cooperation and involvement of a variety of University departments and colleges. Most of the program’s requirements are drawn from courses offered by these varied academic units.

Undergraduate Program of Study
• Major in science education (Bachelor of Science)

The major in science education is interdisciplinary. It is intended for students interested in education; it is not intended to prepare students for advanced study in one area of science. When graduates of the Science Education Program elect to pursue graduate study in a specific area of science, they often must complete additional coursework in that discipline after they are admitted to the Graduate College.

Students majoring in science education earn a Bachelor of Science degree, which is awarded by the College of Liberal Arts and Sciences.

SPECIAL RULES

The Science Education Program may involve many faculty advisors and more than one college or department. Consequently, the following special rules apply to science education students.

At least 10 s.h. of graded credit in science must be earned at the University of Iowa.

No credit from the CLEP Natural Science General Examination may be applied toward the major in science education.

Courses for the major may not be taken pass/nonpass. Grades from all courses applied toward the science education major are used in computing a student’s grade-point average in the major, both at the University of Iowa and overall.

Since mathematics forms an integral part of so many aspects of modern science, all-science emphasis area education students are urged to complete appropriate advanced courses in both pure and applied mathematics (including statistics and computer science) so that they may be qualified to do graduate work and quantitative research later.

Bachelor of Science

The Bachelor of Science with a major in science education requires a minimum of 120 s.h., including at least 48-50 s.h. of work for the major. Students must maintain a g.p.a. of at least 2.70 in all courses for the major and in all UI courses for the major. They also must complete the College of Liberal Arts and Sciences General Education Program (p. 313).

The science education curriculum includes courses offered by science departments in the College of Liberal Arts and Sciences, science applications courses, and courses in the history, philosophy, and sociology of science. Students who complete the major gain:
• knowledge in two or more areas of science;
• a specified proficiency in mathematics as a tool of science (with more mathematics study required for the physical science emphases than for the biological ones);
• a view of science from a historical/philosophical/cultural perspective; and
• experience with the application of scientific knowledge.

The major offers five emphasis areas: all-science, biology, chemistry, earth science, and physics.

The all-science emphasis area is open only to students who will earn teacher licensure and would like equal preparation in biology, chemistry, earth science, and physics. Students who choose the all-science emphasis area do not choose a secondary emphasis area. They must complete all requirements for teacher licensure in order to graduate in the all-science emphasis area.

Students who do not choose the all-science emphasis area may elect whether or not to earn teacher licensure. They choose a primary and a secondary emphasis area from biology, chemistry, earth science, and physics, acquiring depth in the primary emphasis area equivalent to six semesters of sequential study and preparation in the secondary area equivalent to four semesters of sequential study.

All science education students must complete the requirements for their emphasis area(s) plus the broad field science block. Those who wish to earn teacher licensure also must complete the College of Education’s Teacher Education Program (TEP), including the 48 s.h. professional education sequence; see “B.S. with Teacher Licensure” later in this section.

The major in science education requires the following course work.

ALL-SCIENCE EMPHASIS AREA

Students who choose the all-science emphasis area do not choose a secondary emphasis area. They complete a minimum of 48 s.h. for the major, including at least 36 s.h. in the following course work (at least 9 s.h. in each of the four science disciplines—biology, chemistry, earth science, and physics), plus 12 s.h. in the broad field science block. They also must complete all requirements for teacher licensure (see “B.S. with Teacher Licensure” below).

Biology—at least 9 s.h. from these:
BIOL:1411 Foundations of Biology  4 s.h.
BIOL:1412 Diversity of Form and Function  4 s.h.
BIOL:2211 Genes, Genomes, and the Human Condition  3 s.h.
BIOL:2673 Ecology  3-4 s.h.
BIOL:3172 Evolution  4 s.h.
HHP:3500 Human Physiology  3 s.h.

Chemistry—at least 9 s.h. from these:
CHEM:1110 Principles of Chemistry I  4 s.h.
CHEM:1120 Principles of Chemistry II  4 s.h.
CHEM:2021 Basic Measurements  3 s.h.
CHEM:2210 Organic Chemistry I  3 s.h.
CHEM:2220 Organic Chemistry II  3 s.h.

Earth science—at least 9 s.h. from these:
EES:1030 Introduction to Earth Science  3-4 s.h.
EES:1040 Evolution and the History of Life  3-4 s.h.
EES:1050 Introduction to Geology  4 s.h.
EES:1080 Introduction to Environmental Science  3-4 s.h.
EES:2831 Geologic Field Methods  3 s.h.
EES:3070 Marine Ecosystems and Conservation  3 s.h.

Physics—at least 9 s.h. chosen as follows.
At least one of these:
ASTR:1070 Stars, Galaxies, and the Universe  3-4 s.h.
PHYS:1200 Physics of Everyday Experience  3 s.h.

No more than one of these:
PHYS:1511 College Physics I  4 s.h.
PHYS:1611 Introductory Physics I  4 s.h.
PHYS:1701 Physics I  4 s.h.

No more than one of these:
PHYS:1512 College Physics II  4 s.h.
PHYS:1612 Introductory Physics II  3-4 s.h.
PHYS:1702 Physics II  4 s.h.

Additional requirements for the major:
Course work listed under "Broad Field Science Block" below  12 s.h.

BIOL:1311 Human Genetics in the Twenty-First Century  3 s.h.
BIOL:2512 Fundamental Genetics  4 s.h.

One of these:
BIOL:2374 Biogeography  3 s.h.
BIOL:2673 Ecology  3 s.h.

One of these:
BIOL:1370 Understanding Evolution  3 s.h.
BIOL:3172 Evolution  4 s.h.

One of these:
BIOL:3343 Animal Physiology  3 s.h.
HHP:3500 Human Physiology  3 s.h.

One of these:
BIOC:3110 Biochemistry  3 s.h.
BIOC:2723 Cell Biology  3 s.h.
BIOC:3233 Introduction to Developmental Biology  3 s.h.
BIOC:3363 Plant Developmental Biology  3 s.h.

Additional requirements for the major:
Course work in a secondary emphasis area (chemistry, earth science, or physics)  15 s.h.
Course work listed under "Broad Field Science Block" below  12 s.h.

CHEMISTRY EMPHASIS AREA

Students who choose chemistry as their primary emphasis area complete a minimum of 49 s.h. for the major, including 22 s.h. in the following chemistry course work plus at least 15 s.h. in a secondary emphasis area (biology, earth science, or physics) and 12 s.h. in the broad field science block. With their advisor’s permission, students may include a science applications course in their secondary emphasis area.

All of these:
CHEM:1110 & CHEM:1120 Principles of Chemistry I-II  8 s.h.
CHEM:2210 Organic Chemistry I  3 s.h.
CHEM:2220 Organic Chemistry II  3 s.h.
CHEM:2410 Organic Chemistry Laboratory  3 s.h.
CHEM:3250 Inorganic Chemistry (spring)  2 s.h.

One of these:
BIOC:3110 Biochemistry  3 s.h.
CHEM:3110 Analytical Chemistry I  3 s.h.
CHEM:4431 Physical Chemistry I  3 s.h.

Additional requirements for the major:
Course work in a secondary emphasis area (biology, earth science, or physics)  15 s.h.
Course work listed under "Broad Field Science Block" below  12 s.h.

EARTH SCIENCE EMPHASIS AREA

Students who choose earth science as their primary emphasis area complete a minimum of 48 s.h. for the major, including at least 21 s.h. in the following earth science course work plus at least 15 s.h. in a secondary

All of these:
CHEM:1110 & CHEM:1120 Principles of Chemistry I-II  8 s.h.
CHEM:2210 Organic Chemistry I  3 s.h.
CHEM:2220 Organic Chemistry II  3 s.h.
CHEM:2410 Organic Chemistry Laboratory  3 s.h.
CHEM:3250 Inorganic Chemistry (spring)  2 s.h.

One of these:
BIOC:3110 Biochemistry  3 s.h.
CHEM:3110 Analytical Chemistry I  3 s.h.
CHEM:4431 Physical Chemistry I  3 s.h.

Additional requirements for the major:
Course work in a secondary emphasis area (biology, earth science, or physics)  15 s.h.
Course work listed under "Broad Field Science Block" below  12 s.h.
emphasis area (biology, chemistry, or physics) and 12 s.h. in the broad field science block. With their advisor's permission, students may include a science applications course in their secondary emphasis area.

Both of these:

EES:1040 Evolution and the History of Life 4 s.h.
EES:1080 Introduction to Environmental Science 4 s.h.

One of these:

EES:1030 Introduction to Earth Science 3-4 s.h.
EES:1050 Introduction to Geology 4 s.h.

One of these:

EES:2831 Geologic Field Methods 3 s.h.
EES:3000 Geologic Training Assignment 1-3 s.h.
EES:3300 Sedimentary Geology 4 s.h.
EES:3840 Structural Geology 4 s.h.

One of these:

EES:3020 Earth Surface Processes 3 s.h.
EES:3210 Principles of Paleontology 3 s.h.
EES:3360 Soil Genesis and Geomorphology 3 s.h.

One of these:

EES:1290 Energy and the Environment 3 s.h.
GEOG:1050 Foundations of GIS 3 s.h.
GEOG:4010 Field Methods in Physical Geography 3 s.h.

One of these:

EES:3070 Marine Ecosystems and Conservation 3 s.h.
EES:3080 Introduction to Oceanography 2 s.h.

Additional requirements for the major:

Course work in a secondary emphasis area (biology, chemistry, or earth science) 15 s.h.
Course work listed under "Broad Field Science Block" below 12 s.h.

BROAD FIELD SCIENCE BLOCK

All science education students must complete the following broad field science block course work (12 s.h.) in addition to the requirements for their emphasis area(s).

This course:

SIED:4135 The Nature of Science 4 s.h.

One of these:

SIED:4102 Societal and Educational Applications of Earth Science and Environmental Science 4 s.h.
SIED:4103 Societal and Educational Applications of Biological Sciences 4 s.h.

One of these:

SIED:4105 Societal and Educational Applications of Physical Sciences 4 s.h.
SIED:4106 Societal and Educational Applications of Chemical Concepts 4 s.h.

B.S. with Teacher Licensure

In order to earn licensure to teach in elementary and/or secondary schools, students must satisfy all requirements for the science education major and for graduation and must complete the College of Education's Teacher Education Program (TEP).

Students must satisfy all degree requirements and complete Teacher Education Program licensure before degree conferral.

In order to be considered for admission to the TEP, students must have completed a minimum of 30 s.h. of course work with a cumulative g.p.a. of at least 3.00. Admission decisions are based on grade-point averages in science courses and other criteria relevant to teaching. A limited number of applicants are accepted to the TEP, so having the required grade-point average does not ensure admission. Contact the Office of Education Services for information about applying to the TEP.

The TEP requires the following professional education courses, which total a minimum of 48 s.h.

ASTR:1070 Stars, Galaxies, and the Universe (if physics is a secondary emphasis area) 3-4 s.h.
ASTR:1080 Exploration of the Solar System (if physics is a secondary emphasis area) 3-4 s.h.
ASTR:1771 General Astronomy I 4 s.h.

One of these:

PHYS:3811 Electricity and Magnetism I 3 s.h.
PHYS:3850 Electronics 4 s.h.

One of these:

PHYS:1200 Physics of Everyday Experience (if physics is a secondary emphasis area) 3 s.h.
PHYS:1410 Physics of Sound 3-4 s.h.

Additional requirements for the major:

Course work in a secondary emphasis area (biology, chemistry, or earth science) 15 s.h.
Course work listed under "Broad Field Science Block" below 12 s.h.
EDTL:3002 Technology in the Classroom 2-3 s.h.
EDTL:3071 Secondary Classroom Management 2 s.h.
EDTL:3090 Orientation to Secondary Education 1 s.h.
EDTL:3095 Teaching Reading in Secondary Content Areas 1 s.h.
EDTL:4900 Foundations of Special Education 3 s.h.
EPLS:3000 Foundations of Education 3 s.h.
EPLS:4180 Human Relations for the Classroom Teacher 3 s.h.
PSQF:1075 Educational Psychology and Measurement 3 s.h.

These taken in sequence:
EDTL:4751 Science Teaching and Practice with Early Learners 2 s.h.
EDTL:4752 Methods of Teaching Science 3 s.h.
EDTL:4753 Instructional Issues in Teaching Science 3 s.h.
EDTL:4757 Assessment in the Science Classroom 2 s.h.
EDTL:4779 Secondary School Science Practicum (taken with EDTL:4753) 2 s.h.

These three taken concurrently:
EDTL:4087 Seminar: Curriculum and Student Teaching (section 91) 3 s.h.
EDTL:4091 Observation and Laboratory Practice in the Secondary School 6 s.h.
EDTL:4092 Observation and Laboratory Practice in the Secondary School 6 s.h.

And:
One college-level math course, excluding MATH:0100, MATH:0300, and MATH:1005

Four-Year Graduation Plan
The Four-Year Graduation Plan is not available to students majoring in science education.

Honors in the Major
The Science Education Program offers outstanding students the opportunity to graduate with honors in the major. Honors students in science education must maintain a cumulative University of Iowa g.p.a. of at least 3.33 and fulfill other requirements; contact the Science Education Program for more information about graduating with honors in the science education major.

In addition to honors in their majors, undergraduate students have a variety of opportunities for honors study and activities through membership in the University of Iowa Honors Program; visit Honors at Iowa to learn about the University’s honors program.

Graduate Programs of Study
- Master of Arts in Teaching in science education
- Master of Science in science education
- Doctor of Philosophy in science education

For information about graduate programs in science education, see Teaching and Learning (p. 793) (College of Education) in the Catalog. The M.A.T., M.S., and Ph.D. are described under "Graduate Programs: Secondary Education."

Research
Each faculty member in science education is responsible for one or more areas of research. Major interests include studies of effective teaching and learning, science through writing, philosophy and sociology of science, individualized learning, social issues in science and technology, curriculum planning and development, professional development, intellectual development related to teaching and learning science, studies of effective use of hands-on activities, and evaluation and assessment of science instruction and programs.

Programs and Projects
A wide range of funded programs provides ample opportunity for students to be involved in innovative development and research in science education.

Science education faculty members collaborate on a number of international research projects in many countries. Activities include faculty exchanges and cross-national studies.

International students enrich the opportunities for graduate studies in Science Education. New international collaborative efforts are under way each year.

Courses
SIED:3001 Introduction to Museum Studies 3 s.h.
Overview of museum history, function, philosophy, collection, and curatorial practices; governance and funding issues; exhibition evaluation and audience studies; examples from Museum of Art, Museum of Natural History, Old Capitol Museum, and Medical Museum. GE: Social Sciences. Same as EDTL:3001, ANTH:3001, MUSM:3001.

SIED:4102 Societal and Educational Applications of Earth Science and Environmental arr.
Major ideas and principles of earth and environmental sciences; emphasis on common applications in today's world.

SIED:4103 Societal and Educational Applications of Biological Sciences arr.
Basic conceptual themes of biology, how they have been derived; emphasis on a current social issue related to biology.

SIED:4105 Societal and Educational Applications of Physical Sciences arr.
Major ideas of physics and how they have been derived; emphasis on how such ideas affect modern society.

SIED:4106 Societal and Educational Applications of Chemical Concepts arr.
Principles of chemistry as applied in industry, communication, daily living.

SIED:4115 Directed Study arr.
SIED:4135 The Nature of Science 3-4 s.h.
Ideas on understanding and ways of thinking that are essential in a world shaped by science, technology, engineering, and mathematics; focus on increasing science literacy by examining the nature of science; comparison of characteristics specific to individual science disciplines; identification of great episodes and debates in history of science and habits that are essential for science literacy; scope and sequence of content and process skills for K-12 curriculum, instruction, and assessment.
Teaching and Learning

Interim chair
• David B. Bills

Undergraduate major: elementary education (B.A., B.S., granted by the College of Liberal Arts and Sciences)
Graduate degrees: M.A.T. in science education; M.S. in science education; Ph.D. in science education; M.A. in teaching and learning; M.A.T. in teaching and learning; Ph.D. in teaching and learning
Faculty: http://www.education.uiowa.edu/teach/people
Web site: http://www.education.uiowa.edu/teach

Department of Teaching and Learning programs prepare graduates for positions in public schools, local and state education agencies, clinical settings, and institutions of higher education. All licensure programs are approved by the Iowa Department of Education. Undergraduate students pursuing a major in elementary education must meet the College of Liberal Arts and Sciences requirements for the Bachelor of Arts or Bachelor of Science; see the CLAS Academic Policies Handbook.

Teacher Education Program and Licensure/Certification

Undergraduate students must be admitted to the Teacher Education Program (TEP) before they may take required professional education courses. The application for admission should be submitted to the College of Education Office of Education Services. Deadlines for application are March 1 and October 1 for admission to restricted course work in the following semester. Each program reviews applications and chooses a limited number of students for admission.

In order to be considered for admission, students must complete a minimum of 30 s.h. of earned college credit and must have a University of Iowa g.p.a. of at least 3.00 and a cumulative g.p.a. of at least 3.00. Some subject areas have additional admission criteria. A limited number of applicants are accepted into each Teacher Education Program, so a 3.00 g.p.a. does not ensure admission. Admission decisions are based on grade-point average in the major and other criteria relevant to teaching success.

The application process includes submission of an application form, a writing sample, two letters of recommendation, and an Iowa criminal history check request form. Applicants are required to submit PRAXIS I test scores in mathematics, reading, and writing. Scores from either the PRAXIS computer-based tests (C-PPST) or the PRAXIS Pre-Professional Skills Tests (PPST) are accepted. Applicants must have a Designated Institution Score Report with a minimum composite score of at least 522 and a minimum score of 170 on any single portion of the test; or a Praxis Core Test Designated Institution Score Report with minimum scores of 156 in reading, 162 in writing, and 150 in mathematics. Applicants also must provide verification that they have completed a 10-hour volunteer experience in a K-12 classroom setting.

If at any time after admission a student's University of Iowa and/or cumulative g.p.a. falls below 2.70, he or she is placed on probation for one semester. Students who do not attain a 2.70 g.p.a. during the probationary semester are dropped from the TEP. Students should consult a College of Education advisor in their program area or contact the Office of Education Services for more information on admission criteria.

Graduate students who apply to the Graduate College for a teacher licensure program must apply separately for admission to the Teacher Education Program. Deadlines for application to either program are October 1 or March 1 for admission to restricted course work in the following semester. Graduate and postbaccalaureate students may submit scores on the Graduate Record Exam (GRE) General Test instead of PRAXIS I scores. Applicants must have a verbal reasoning and quantitative reasoning composite score of at least 300 on the revised GRE (at least 1080 on the old GRE) and an analytical writing score of at least 3.0.

A limited number of applicants are accepted into each Teacher Education Program, so meeting the Graduate College admission requirements does not ensure admission. Admission decisions are based on grade-point average in the undergraduate major and other criteria relevant to teaching. Upon admission to the TEP, students are assigned an education advisor.

Admission to Student Teaching

Admission to the student teaching semester requires a separate application. Applications must be submitted one year before the student teaching semester. Applicants' credentials and academic and professional progress are reviewed to ensure that a student is qualified for placement in the profession. Verification that a student meets all specific program area requirements is made when the student applies for student teaching.

Consult a College of Education advisor or the Office of Education Services for information about admission and requirements for student teaching in specific licensure programs.

TEP: Elementary Education (Undergraduate)

• Major in elementary education (Bachelor of Arts, Bachelor of Science)

The College of Education offers the undergraduate major in elementary education for students earning a Bachelor of Arts or a Bachelor of Science degree from the College of Liberal Arts and Sciences. The program prepares students to teach kindergarten through grade 6. In Iowa, the elementary specialization areas are designated as kindergarten through grade 8.

The Bachelor of Arts or Bachelor of Science with a major in elementary education requires a minimum of 120 s.h., including at least 77 s.h. of credit for the major. Students must complete all requirements for graduation from the College of Liberal Arts and Sciences, including the General Education Program (p. 313). They must also complete all requirements for the elementary education major and the Teacher Education Program (TEP), including student teaching.

As a requirement for completion of an approved Teacher Education Program for initial teaching licensure, the state of Iowa requires a passing score on two tests: a test that measures pedagogy and a test that measures knowledge of at least one content area. Current requirements are for Praxis II tests that are specific to a student's program. The
tests are required before recommendation for licensure or certification to any state.

The major in elementary education (B.A. or B.S.) requires the following work.

**FOUNDATION COURSES**

Students may complete the foundation courses before being admitted to the major in elementary education, but the courses are not prerequisite to admission to the major.

- **EDTL:3122 Creativity, Imagination, Play, and Human Development through the Arts** 3 s.h.
- **EDTL:4900 Foundations of Special Education** 3 s.h.
- **EPLS:3000 Foundations of Education** 3 s.h.
- **MATH:1120 Logic of Arithmetic** 4 s.h.
- **PSQF:1075 Educational Psychology and Measurement** 3 s.h.

**COURSES FOR THE MAJOR**

**First Semester**

- **EDTL:3002 Technology in the Classroom** 2-3 s.h.
- **EDTL:3103 Assessment for Instructional Planning and Practice** 3 s.h.
- **EDTL:3123 Reading and Responding to Children’s Literature** 3 s.h.
- **EDTL:3127 Methods and Materials: Physical Education, Health, and Wellness** 2-3 s.h.
- **EDTL:3190 Orientation to Elementary Education** 1-2 s.h.

**Second Semester**

- **EDTL:3160 Literacy Learning and Teaching I** 3 s.h.
- **EDTL:3163 Methods: Elementary School Mathematics** 2-3 s.h.
- **EDTL:3170 Elementary Classroom Management** 1-3 s.h.
- **EDTL:3174 Elementary Math Practicum** arr.
- **EPLS:4180 Human Relations for the Classroom Teacher** 3 s.h.

**Third Semester**

One of these:

- **EDTL:3154 Teaching and Learning in the Earth Sciences** 3 s.h.
- **EDTL:3158 Teaching and Learning in the Biological Sciences** 3 s.h.
- **EDTL:3159 Teaching and Learning in the Chemical/Physical Sciences** 3 s.h.

All of these:

- **EDTL:3120 Methods and Materials: Music for the Classroom Teacher** 2 s.h.
- **EDTL:3161 Social Studies for the Elementary Classroom Teacher** 3 s.h.
- **EDTL:3164 Literacy Learning and Teaching II** 3 s.h.
- **MATH:1140 Mathematical Basis of Elementary Geometry** 3 s.h.

**Fourth Semester**

One of these:

- **EDTL:3154 Teaching and Learning in the Earth Sciences** 3 s.h.

EDTL:3158 Teaching and Learning in the Biological Sciences 3 s.h.

EDTL:3159 Teaching and Learning in the Chemical/Physical Sciences 3 s.h.

All of these:

- **EDTL:3172 Elementary Reading Practicum** 3-4 s.h.
- **EDTL:4171 Literacy Learning and Teaching III** 3 s.h.
- **STAT:1010 Statistics and Society** 3 s.h.

**STUDENT TEACHING**

Students seeking initial licensure must complete a minimum of 14 s.h. of student teaching.

- **EDTL:4190 Supervised Teaching in the Elementary School: Interactive Phase** 7 s.h.
- **EDTL:4191 Supervised Teaching in the Elementary School: Pre- and Post-Active Phase**

**ENDORSEMENTS**

Students have the option of completing an endorsement in one of the following areas: art, English language arts, English as a Second Language (ESL), hearing impaired, mathematics, middle school, music, physical education, reading, science, social sciences (history, social studies), special education (Instructional Strategist I: Mild/Moderate), and speech communication/theatre. Courses in the endorsement area may be taken pass/nonpass if they are offered with the pass/nonpass option. Requirement lists for each endorsement area are available from the Department of Teaching and Learning.

The University of Iowa also offers an added endorsement in talented and gifted education.

**TRANSFER STUDENTS**

Before they student teach, transfer students must complete the following courses at the University of Iowa.

All of these:

- **EDTL:3002 Technology in the Classroom** 2 s.h.
- **EDTL:3190 Orientation to Elementary Education** 1-2 s.h.

A practicum

Two of these:

- **EDTL:3123 Reading and Responding to Children’s Literature** 3 s.h.
- **EDTL:3160 Literacy Learning and Teaching I** 3 s.h.
- **EDTL:3161 Social Studies for the Elementary Classroom Teacher** 3 s.h.
- **EDTL:3163 Methods: Elementary School Mathematics** 2-3 s.h.
- **EDTL:3164 Literacy Learning and Teaching II** 3 s.h.

Transfer students must follow the normal application procedures. In addition, they are asked to complete a disclosure statement describing all practicum experiences they have taken at other institutions and a release statement allowing the College of Education Office of Education Services to contact all institutions where they have done professional preparatory work.
TEP: Secondary Education (Undergraduate and Graduate)

The College of Education offers the Teacher Education Program in secondary education for undergraduate students in the College of Liberal Arts and Sciences. Students must complete all requirements for graduation from the College of Liberal Arts and Sciences, including the General Education Program (p. 313) and the requirements for their majors (see College of Liberal Arts and Sciences (p. 24) in the Catalog). They also must complete all requirements of the College of Education’s Teacher Education Program.

Graduate students may be admitted to a program leading to teacher licensure/certification as “certification only” candidates in the Graduate College. They are subject to all Graduate College policies; see the Manual of Rules and Regulations of the Graduate College. Eligible graduate students also may complete initial teacher licensure/certification requirements by earning an M.A.T. in English education, foreign language education, or science education, or an M.A. in social studies (program B).

Licensure/certification requires a major of at least 30 s.h. of course work in one of the secondary school subject areas listed below. Licensure/certification course requirements for each major are available from the Department of Teaching and Learning office. Candidates for secondary school teaching licensure/certification also may receive approval to teach in additional subject areas by completing an approved program of 12-24 s.h. or more of course work in those areas.

As a requirement for completion of an approved Teacher Education Program for initial teaching licensure, the state of Iowa requires a passing score on two tests: a test that measures pedagogy and a test that measures knowledge of at least one content area. Current requirements are for Praxis II tests that are specific to a student’s program. The tests are required before recommendation for licensure or certification to any state.

The College of Education offers secondary school teacher preparation programs in the following areas.

Art
  *Coaching
  English
  *English as a second language
  *Hearing impaired
  *Journalism
  Mathematics
  *Middle school
  Music
  *Reading
  Science, including *physical science, biology, chemistry, *general science, physics, earth science, and 9-12 all science
  Social science, including anthropology, economics, geography, history, political science, psychology, and sociology
  *All social sciences
  *Talented and gifted
  World languages—Chinese, French, German, Italian, Japanese, Latin, Spanish
  *Available as an additional approval area only; a major in one of the other areas is required for licensure.

An Iowa secondary teaching license qualifies holders to teach in grades 5-12. Students planning to teach art or music typically complete a program that prepares them for both elementary- and secondary-level licensure.

Secondary teacher preparation programs in mathematics and foreign language also offer a program that leads to licensure/certification as a subject matter specialist in grades K-8. This K-8 licensure/certification is available only in the same subject area as the secondary certification.

For more information and the name of an advisor, contact the Department of Teaching and Learning.

REQUIREMENTS

Undergraduates working toward licensure/certification to teach in secondary schools must complete the following requirements in addition to the requirements of their major. All course work must be completed before student teaching.

One introduction and practicum course in the major field 2-3 s.h.
EDTL:3002 Technology in the Classroom (must be taken during student’s first semester in the college) 2 s.h.
EDTL:3071 Secondary Classroom Management (required for art, mathematics, science, social studies education) 2 s.h.
EDTL:3090 Orientation to Secondary Education (must be taken during student’s first semester in the college) 1 s.h.
EDTL:3095 Teaching Reading in Secondary Content Areas (must be taken during student’s first semester in the college) 1 s.h.
EDTL:4900 Foundations of Special Education 3 s.h.
EPLS:3000 Foundations of Education 3 s.h.
EPLS:4180 Human Relations for the Classroom Teacher 3 s.h.
PSQF:1075 Educational Psychology and Measurement 3 s.h.
One or more methods of teaching courses in the major field 3-9 s.h.
One college-level mathematics course, except MATH:0100, MATH:0300, and MATH:1005 12 s.h.

For initial licensure in all subject areas, student teaching must be an all-day, full-semester experience. Most students are placed in a district within a 60-mile radius of Iowa City. Placements outside this area require special approval and are considered on an individual basis. Special programs provide experience in districts with diverse populations, including Aldine, Texas (Houston area); Adams County, Colorado (Denver area); Rialto, California; and Clark County, Nevada (Las Vegas area). In most program areas, students also may apply to student teach at international sites for the second half of the semester.

Additional information about options for student teaching and application procedures is available from the Office of Education Services. Applications for student teaching must be submitted during the calendar year before the student teaching semester. The deadline is November 15 for students planning to student teach the following fall semester and February 15 for students planning to student teach the following spring semester.
TRANSFER STUDENTS
Transfer students must complete the following work before they student teach.

EDTL:3002 Technology in the Classroom 2-3 s.h.
EDTL:3090 Orientation to Secondary Education 1 s.h.
EDTL:3095 Teaching Reading in Secondary Content Areas 1 s.h.
Appropriate methods courses
A practicum at the University of Iowa
All course work in the major

Transfer students must follow the normal application procedures. In addition, they are asked to complete a disclosure statement describing all practicum experiences they have taken at other institutions and a release statement allowing the College of Education Office of Education Services to contact all institutions where they have done professional preparatory work.

Graduate Programs of Study:
Overview
• Master of Arts in Teaching in science education
• Master of Science in science education
• Doctor of Philosophy in science education
• Master of Arts in teaching and learning
• Master of Arts in Teaching in teaching and learning
• Doctor of Philosophy in teaching and learning

The department offers graduate degree programs in three major areas: elementary education, secondary education, and special education.

Elementary education programs:
Developmental reading (offered in the M.A. in teaching and learning); and
Language, literacy, and culture (offered in the Ph.D. in teaching and learning).

Secondary education programs:
Art education (offered in the M.A. in teaching and learning); Developmental reading (offered in the M.A. in teaching and learning); English education (offered in the M.A. and M.A.T. in teaching and learning); Foreign language and English as a Second Language (ESL) education (offered in the M.A., M.A.T., and Ph.D. in teaching and learning); Language, literacy, and culture (offered in the Ph.D. in teaching and learning); Mathematics education (offered in the M.A., M.A.T., and Ph.D. in teaching and learning); Science education (offered in the M.A., M.A.T., and Ph.D. in science education); and Social studies education (offered in the M.A. and Ph.D. in teaching and learning).

The secondary education area also collaborates with the College of Liberal Arts and Sciences to offer an education option for graduate students earning an M.S. in mathematics; an M.A. and Ph.D. in music with a concentration in music education; and a joint B.A./M.A.T. in science education for undergraduates majoring in biology, chemistry, environmental sciences, or physics. In addition, the area offers an ESL endorsement for individuals who are enrolled in a Department of Teaching and Learning graduate degree program or who are licensed in-service teachers.

Special education:
Special education (offered in the M.A. and Ph.D. in teaching and learning).

Each degree program is described below.

Applicants for admission to University of Iowa graduate degree programs must meet the admission requirements of the Graduate College; see the Manual of Rules and Regulations of the Graduate College.

REQUIRED PH.D. RESEARCH COURSES
Students admitted to doctoral programs must complete the program's research requirements.

REQUIRED PH.D. CORE COURSES
All Ph.D. students in the Department of Teaching and Learning must complete one or both of the following Ph.D. core courses, depending upon program requirements.

EDTL:7004 Schooling in the United States 3 s.h.
EDTL:7033 Seminar on Teacher Education 3 s.h.

REQUIRED PH.D. COGNATES
All Ph.D. students in the Department of Teaching and Learning must complete two approved cognate areas as part of their doctoral study plan. Most comprehensive exams in the department are designed to cover the student's core area plus two cognate areas, so selection of cognate areas is important. Cognates also may enhance students' employment possibilities, since they represent a minor area of study.

The following list of cognates offered by program areas in the department is not exhaustive; students may select cognates from this list, or they may customize their own cognate areas in consultation with their advisors.

Curriculum Theory and Development
Three of these:

EDTL:4876 Advanced Methods for Teaching and Learning in a Culturally Responsive Classroom 3 s.h.
EDTL:5086 Curriculum Foundations 2-3 s.h.
EDTL:6570 Foundation of School Mathematics Curriculum 3 s.h.
EDTL:7004 Schooling in the United States 3 s.h.
EDTL:7075 Educational Ethnography 3 s.h.
EDTL:7100 Design and Organization of Curriculum 3 s.h.
EPLS:6265 Standards-Based Education and Accountability 3 s.h.
EPLS:6381 Analysis and Appraisal of Curriculum 3 s.h.
PSQF:6255 Construction and Use of Evaluation Instruments 3 s.h.

Foreign Language and ESL Education
Both of these:

EDTL:6400 Fundamentals of Second Language Assessment 3 s.h.
EDTL:6483 Second Language Classroom Learning 3 s.h.
One of these, chosen in consultation with faculty:
EDTL:6403 Language Policy and Planning 3 s.h.
EDTL:6480 Issues in Foreign Language Education 3 s.h.
EDTL:6484 Reading in a Second Language 3 s.h.
EDTL:6497 Principles of Course Design for Second Language Instruction 3 s.h.

Gifted Education
Administrative strand—two of these, chosen in consultation with faculty:
EPLS:4110 Administration and Policy in Gifted Education 2 s.h.
EPLS:4111 Evaluation of Gifted Programs 1 s.h.
EPLS:4113 Staff Development for Gifted Programs 1 s.h.
RCE:4127 Research and Theory in Talent/Giftedness 1 s.h.

Programming strand:
EDTL:4066 Curriculum Concepts in Gifted Education 3 s.h.
EDTL:4199 Program Models in Gifted Education 3 s.h.

Psychology strand—two of these, chosen in consultation with faculty:
RCE:4120 Psychology of Giftedness 3 s.h.
RCE:4121 Identification of Students for Gifted Programs 3 s.h.
RCE:4137 Introduction to Educating Gifted Students 3 s.h.
RCE:5226 Assessment of Giftedness 3 s.h.
RCE:5237 Seminar in Gifted Education 2-3 s.h.

Global Education
All of these:
EDTL:6841 Infusing a Global Perspective into the Curriculum 3 s.h.
EPLS:5104 Education in the Third World 2-3 s.h.
EPLS:5195 Research in Cross-Cultural Settings 3 s.h.

Language, Literacy, and Culture
Both of these:
EDTL:7015 Ph.D. Seminar in Language, Literacy, and Culture arr.
EDTL:7015 Ph.D. Seminar in Language, Literacy, and Culture (topic chosen in consultation with advisor) arr.

General emphasis—one of these:
EDTL:7008 Seminar: Research and Current Issues arr.
EDTL:7008 Seminar: Research and Current Issues (topic chosen in consultation with advisor) arr.

Elementary emphasis—one of these:
EDTL:6104 Literature for Children II 3 s.h.
EDTL:6164 Early Literacy Development and Instruction 2-3 s.h.
EDTL:6165 Reading and Writing Across Intermediate Grades 3 s.h.

Secondary emphasis—one of these:
EDTL:3393 Reading and Teaching Adolescent Literature 3 s.h.
EDTL:6315 M.A. Seminar: English Education arr.

Mathematics Education
Both of these:
EDTL:5535 Current Issues in Mathematics Education 1-3 s.h.
EDTL:7535 Seminar: Research in Mathematics Education arr.

Two of these:
EDTL:6530 Workshop in School Mathematics 1-3 s.h.
EDTL:6531 Technology in School Mathematics 2-3 s.h.
EDTL:6534 Foundations of Mathematics Education 2-3 s.h.
EDTL:6536 Teaching of Geometry 2-3 s.h.
EDTL:6539 Teaching of Algebra 2-3 s.h.

Science Education
All of these:
EDTL:6755 Practices of Inquiry in Science Learning Environments 3 s.h.
EDTL:6757 Learning in the Science Classroom 2-3 s.h.
EDTL:6759 Advanced Pedagogy 3 s.h.

Special Education
Three or four of these, depending on requirements of the major program:
EDTL:7040 Advanced Topics in Teaching and Learning arr.
EDTL:7945 Current Issues and Trends in Learning Disabilities 3 s.h.
EDTL:7948 Contemporary Research in Behavioral Disorders 3 s.h.
EDTL:7953 Seminar: Single Subject Design Research 3 s.h.

Graduate Programs of Study
The Department of Teaching and Learning offers, or jointly administers with departments in the College of Liberal Arts and Sciences, advanced degree programs in the following fields of professional interest: art education; developmental reading; English education; foreign language, second language, and English as a Second Language education; language, literacy, and culture; mathematics education; music education; science education; social studies education; and special education.

M.A.: Art Education
The Master of Arts program in art education requires a minimum of 38 s.h. of graduate credit. The program prepares highly qualified teachers of art for elementary and secondary schools and community colleges. Its strong
academic emphasis helps teachers who are creative artists to become highly literate in the history and language of art.

REQUIREMENTS
The M.A. plan of study includes a total of 18 s.h. in studio art and art history (either 12 s.h. of studio art and 6 s.h. of art history, or 12 s.h. of art history and 6 s.h. of studio art); a total of 8 s.h. in EDTL:6267 Seminar: Current Issues in Art Education; and a total of 12 s.h. in additional course work, specified after a student begins the program.

M.A. students also must complete a studio thesis or a written thesis.

ADMISSION
Applicants to the M.A. program in art education must meet the admission requirements of the Graduate College. They must have completed the equivalent of the minimum course work in art required for a University of Iowa B.A. or B.F.A. in art and must have a license/certificate to teach art. Applications must include a representative portfolio of the applicant's work, consisting of eight slide reproductions of artwork and one example of written work, which may be a paper previously written for a course or an original paper. Deficiencies in undergraduate art or courses recommended for teacher licensure/certification are evaluated following admission so that students can make up required course work concurrent with work for the degree.

M.A.: Developmental Reading
The Master of Arts program in developmental reading requires a minimum of 35 s.h. of graduate credit with thesis or a minimum of 33 s.h. of graduate credit without thesis. The program prepares graduate students for positions as reading specialists in kindergarten and grades 1-12. The required course work develops the skills, knowledge, and competence needed for supervisory, curricular, and remedial teaching positions in reading. The program also builds a background in reading for students who want to specialize further in the area and eventually to teach and/or conduct research at a college or university.

Successful completion of this program, combined with one year of successful teaching experience that includes teaching reading as a significant part of the responsibility, qualifies a student for certification as a reading specialist.

The M.A. program in developmental reading requires the following work.

REQUIRED COURSES
All of these:
- EDTL:4171 Literacy Learning and Teaching III 3 s.h.
- EDTL:4394 Early Literacy Development and Instruction 2-3 s.h.
- EDTL:6164 Early Literacy Development and Instruction 2-3 s.h.
- EDTL:6165 Reading and Writing Across Intermediate Grades 3 s.h.
- EDTL:6171 Advanced Reading Clinic Techniques 2-3 s.h.
- EDTL:6172 Advanced Reading Clinic Practicum 2-3 s.h.
- EDTL:7008 Seminar: Research and Current Issues (Reading) 3 s.h.

One of these:
- PSQF:4106 Child Development 3 s.h.
- PSQF:4130 Early Adolescent Development 3 s.h.
- PSQF:4133 The Adolescent and Young Adult 3 s.h.
- PSQF:6200 Educational Psychology 3 s.h.

Students who have completed educational psychology and/or human growth and development course work relating only to grades K-8 should choose PSQF:4133, or PSQF:6200 from the list above. Those who have completed work relating only to grades 5-12 should choose PSQF:4106 or PSQF:6200.

One of these:
- EDTL:3938 Assessment of Learning Problems 3 s.h.
- PSQF:4150 Introduction to Educational Measurement 3 s.h.
- An approved literacy assessment course

One of these:
- EDTL:5086 Curriculum Foundations 2-3 s.h.
- EDTL:6167 Inquiry-Based Curriculum Development in Early Childhood and Elementary Classrooms 3 s.h.
- EDTL:7100 Design and Organization of Curriculum 3 s.h.

One of these:
- EPLS:6383 Supervision and Evaluation 3 s.h.
- EDTL:7165 Reading Clinic: Supervision Thesis (required for thesis option): 3 s.h.
- EDTL:6393 Master's Thesis 2 s.h.

ELECTIVES
Students, in consultation with their advisors, may select the remaining required semester hours as electives from areas such as curriculum, supervision, language arts, testing and evaluation, linguistics, or speech pathology.

COMPREHENSIVE EXAMINATION
The comprehensive examination consists of two three-hour exams. Each three-hour exam is based on an aspect of reading or literacy. With agreement of a student's advisor and committee, a comprehensive project may be substituted for the written examination in one or both areas.

ADMISSION
Applicants to the M.A. program in developmental reading must meet the admission requirements of the Graduate College. They must have an undergraduate g.p.a. of at least 3.00; hold an early childhood, elementary, or secondary school teaching certificate; and show evidence of completing two years of successful teaching experience.

M.A.: English Education
The Master of Arts program in English education requires a minimum of 30 s.h. of graduate credit. The program is intended for experienced teachers of English. It provides opportunities for professional development and preparation for department chairs, supervisors of English, and curriculum specialists for secondary schools.

M.A. students specialize in English education and in one or two other areas. The other area(s) may include reading, writing, curriculum, adolescent literature, or
a literary area. Students and their advisors plan the program of study together. The only required course is EDTL:6315 M.A. Seminar: English Education. At the end of the program, students take a comprehensive examination in English education and in their chosen area(s), or they may choose to write a thesis.

Students must maintain a g.p.a. of at least 3.00 while enrolled in the program.

ADMISSION

Applicants to the M.A. program in English education must meet the admission requirements of the Graduate College. They should have taken extensive course work in English and should have taught English for at least two years. Application should be made to the College of Education.

M.A.T.: English Education

The Master of Arts in Teaching program in English education requires a minimum of 45 s.h. of graduate credit. The program is designed for students who have an undergraduate degree in English and few or no professional education courses. Successful completion of the program enables students to receive a credential to teach English in secondary schools.

The M.A.T. program in English education requires the following work.

ENGLISH

All of these:

- EDTL:6315/ENGL:6315 M.A. Seminar: English Education
- ENGL:3190 Language and Learning
- ENGL:3191 Reading and Teaching Adolescent Literature

Students may take the following English courses as part of the M.A.T. program or as part of their undergraduate program.

- A course in Shakespeare
- Three courses in American literature
- A course in British literature
- A course in nonfiction or creative writing, in addition to CNW:4355

EDUCATION

All of these:

- EDTL:3002 Technology in the Classroom (must be taken during student's first semester in the college)
- EDTL:3090 Orientation to Secondary Education
- EDTL:4087 Seminar: Curriculum and Student Teaching
- EDTL:4091 Observation and Laboratory Practice in the Secondary School
- EDTL:4092 Observation and Laboratory Practice in the Secondary School
- EDTL:4314 Introduction and Practicum: Secondary English (must be completed before enrollment in EDTL:4315 and EDTL:4394)
- EDTL:4315 Methods: Secondary English
- EDTL:4394 Methods: Secondary Reading
- EPLS:3000 Foundations of Education
- EPLS:4180 Human Relations for the Classroom Teacher
- PSQF:6200 Educational Psychology

COMPREHENSIVE EXAMINATION

The comprehensive examination involves a series of reflective projects supervised by English education faculty. The projects encompass issues explored throughout the course of study and involve integration of theory and practice.

ADMISSION

Applicants to the M.A.T. program in English education must meet the admission requirements of the Graduate College. They should have been granted a B.A. in English or the equivalent, with an undergraduate g.p.a. of at least 3.00. They also must take the Graduate Record Exam and meet all Teacher Education Program (TEP) application requirements. Since the M.A.T. is a credentialing program, candidates must not have qualified previously for a credential. Applicants are expected to have no more than 6 s.h. of course work in professional education courses before admission.

ESL Endorsement

An ESL endorsement enables an individual to teach English as a Second Language in K-12 in the state of Iowa. Because teaching endorsements are additional areas of expertise added to a teaching license, applicants must be current students in a Teacher Education Program (TEP) or licensed in-service teachers.

ADMISSION

Each applicant to the ESL endorsement program must submit a one-page essay explaining why he or she wishes to teach ESL; a transcript of all university-level course work; and evidence of having completed two semesters of foreign language beyond the language component of the College of Liberal Arts and Sciences General Education Program (p. 313) or a documented score of "advanced plus" on the oral proficiency interview (OPI) given in the language department. Applicants whose first language is not English must provide evidence of scoring 55 or higher on the Test of Spoken English (TSL) or 26 (Internet-based) on the speaking section of the Test of English as a Foreign Language (TOEFL).

Applicants are admitted to the ESL endorsement program twice a year; application deadlines are October 1 and March 1.

M.A.: Foreign Language and ESL Education

The Master of Arts program in foreign language and English as a Second Language (ESL) education requires a minimum of 33-36 s.h. of graduate credit. The program is designed for students who would like to pursue a foreign language and ESL education specialization in teaching (kindergarten through college) or in related fields (e.g., language laboratory directors, instructional materials designers, or evaluation specialists). It also offers enrichment in foreign language pedagogical
knowledge for practicing teachers. Students may design programs with a special focus.

The program offers three specializations: second languages and ESL education; a target language area (may include language, linguistics, literature, history, geography, or civilization); and a cognate area. The cognate area may be teacher education, reading, instructional design, measurement and statistics, or another area selected in consultation with their advisor.

Students take at least 15 s.h. in second language education course work, 9 s.h. in graduate language or linguistics, and 9 s.h. in the cognate area. They must earn 9 s.h. in courses numbered 5000 or above. Students also must complete a capstone project in consultation with their advisor.

Students must maintain a g.p.a. of at least 3.00 while enrolled in the program. Candidacy for the master's degree is reevaluated annually.

The M.A. program in foreign language and ESL education requires the following work, including these suggested courses.

**FOREIGN AND SECOND LANGUAGES EDUCATION**

Total of 15 s.h.

- EDTL:6400 Fundamentals of Second Language Assessment 3 s.h.
- EDTL:6483 Second Language Classroom Learning 3 s.h.
- EDTL:6497 Principles of Course Design for Second Language Instruction 3 s.h.

At least 6 s.h. from these:

- EDTL:6402 Second Language Program Management 3 s.h.
- EDTL:6403 Language Policy and Planning 3 s.h.
- EDTL:6407 Reading in Non-Roman Scripts 3 s.h.
- EDTL:6408 Designing Materials for Second Language Instruction 3 s.h.
- EDTL:6409 Cultural Curriculum 3 s.h.
- EDTL:6480 Issues in Foreign Language Education 3 s.h.
- EDTL:6484 Reading in a Second Language 3 s.h.

**TARGET LANGUAGE**

In consultation with their advisor, students select at least 9 s.h. of graduate language courses in their area of interest.

**COGNATE AREA**

Students complete at least 9 s.h. of course work chosen in consultation with their advisor.

**MASTER'S EXAMINATION**

Students take a written exam during the semester in which they plan to graduate. The exam covers second language education and the two study areas selected by a student. It is written by the graduate committee, which consists of at least three faculty members, two of whom must be from foreign language education. The candidate and his or her advisor discuss and formalize the exam's content and process eight months before the exam.

**ADMISSION**

Applicants to the M.A. program in foreign language and ESL education must meet the admission requirements of the Graduate College. They must be proficient in English and in another language and must have earned at least 20 s.h. in undergraduate, upper-division foreign language course work. Applicants should submit a statement of purpose explaining their graduate study goals. A g.p.a. of at least 3.00 in undergraduate course work and some experience living, working, and/or studying in the culture of the applicant's chosen target language are preferred. International applicants whose first language is not English must score at least 81 (Internet-based) on the Test of English as a Foreign Language (TOEFL) with a speaking score of 26 and a writing score of 25.

**M.A.T.: Foreign Language and ESL Education**

The Master of Arts in Teaching program in foreign language and English as a Second Language (ESL) education requires a minimum of 67 s.h. of graduate credit. The program is designed for superior liberal arts and sciences graduates who have had few or no professional education courses. Successful completion of the program leads to elementary and/or secondary teacher licensure. The M.A.T. is available in Chinese, French, German, Japanese, Latin, and Spanish.

M.A.T. students must complete at least 18 s.h. in graduate course work in the collaborating foreign language department in addition to professional education courses.

The M.A.T. in foreign language and ESL education requires the following work.

**PROFESSIONAL EDUCATION**

All of these:

- EDTL:3002 Technology in the Classroom (must be taken during student's first semester in the college) 2 s.h.
- EDTL:3090 Orientation to Secondary Education (must be taken during student's first semester in the college) 1 s.h.
- EDTL:3095 Teaching Reading in Secondary Content Areas (must be taken during student's first semester in the college) 1 s.h.
- EDTL:4900 Foundations of Special Education 3 s.h.
- EPLS:3000 Foundations of Education 3 s.h.
- EPLS:4180 Human Relations for the Classroom Teacher 3 s.h.
- PSQF:6200 Educational Psychology 3 s.h.

**FOREIGN LANGUAGE TEACHING**

All of these:

- EDTL:6400 Fundamentals of Second Language Assessment 3 s.h.
- EDTL:6483 Second Language Classroom Learning 3 s.h.
- EDTL:6497 Principles of Course Design for Second Language Instruction 3 s.h.

Total of 21-27 s.h. from these:

- EDTL:4087 Seminar: Curriculum and Student Teaching 1 s.h.
EDTL:4091 Observation and Laboratory Practice in the Secondary School \( \text{arr.} \)

EDTL:4092 Observation and Laboratory Practice in the Secondary School \( \text{arr.} \)

EDTL:4406 Foreign Language Education Practicum I 3 s.h.

EDTL:4407 Foreign Language Education Practicum II 3 s.h.

EDTL:4416 Learning to Teach Second Languages I 3 s.h.

EDTL:4417 Learning to Teach Second Languages II 3 s.h.

K-12 LICENSURE
The K-12 licensure option requires the following course.

EDTL:4089 Elementary School Special Subject Area Student Teaching 1-4 s.h.

COMPREHENSIVE EXAMINATION
A comprehensive examination is required. The examination reflects candidate's depth and breadth of knowledge in foreign language and ESL education, including but not limited to theory and practice as well as knowledge of and proficiency in the target language and/or literature of the candidate's choice. The candidate and his or her advisor discuss the exam's content and format eight months before the exam.

ADMISSION
Applicants must meet the admission requirements of the Graduate College. They must have been granted a bachelor's degree with a major or a strong concentration in a second language and must have an undergraduate g.p.a. of at least 3.00. They also must meet all Teacher Education Program (TEP) application requirements.

Ph.D.: Foreign Language and ESL Education
The Doctor of Philosophy program in foreign language and English as a Second Language (ESL) education requires a minimum of 80 s.h. of graduate credit. The program provides students with the necessary content-area knowledge and research skills for independent research, program administration, and varied leadership positions in foreign language and ESL education. It is designed for individuals who have demonstrated success in foreign language and ESL teaching and who wish to prepare for positions in academia, government, or the private sector where in-depth knowledge of foreign language educational issues is required.

Most courses for the Ph.D. should be numbered 5000 or above. At least 30 s.h. must be taken in the core area of foreign language education. A student and his or her advisor discuss core area course work and cognate area specializations. A student's progress toward the degree and his or her scholarship development is reviewed by the program's faculty and discussed by the student and his or her advisor each year.

The Ph.D. program in foreign language and ESL education requires the following work. Students may be able to count some courses completed for the master's degree toward the 80 s.h. required for the Ph.D.

REQUIRED COURSES
The program in foreign language and ESL education requires 16 s.h. of course work in research methods. Three courses must be taken from the First Tier requirements, and two courses must be taken from the Second Tier requirements. Students who have little experience with social/behavioral sciences research methods when they enter the program may be advised to take remedial course work in research methods, which will not count toward the 16 s.h. requirement.

FIRST TIER REQUIREMENTS
These courses should be taken in the first two years of study (10 s.h.).

Both of these:

EDTL:7405 Research Methods in Second Language Teaching and Learning 3 s.h.
PSQF:6243 Intermediate Statistical Methods 4 s.h.

One of these:

EDTL:7070 Introduction to Qualitative Methods in Literacy Research 3 s.h.
EPLS:7373 Qualitative Research Design and Methods 3 s.h.
PSQF:7331 Seminar: Educational Psychology I—Current Topics (when topic is qualitative educational research methods) 3 s.h.
RCE:7338 Essentials of Qualitative Inquiry 3 s.h.

SECOND TIER REQUIREMENTS
Two courses from the following, to be chosen in consultation with a student's advisor. These courses should be taken after the First Tier courses have been completed (6 s.h.):

Advanced Quantitative Courses

EDTL:7071 Critical Discourse Analysis in Educational Research 3 s.h.
EDTL:7072 Advanced Methods of Literacy Research: Qualitative Data Analysis and Reporting 3 s.h.
EDTL:7073 Ethnographic Methods, Theories, and Texts 3 s.h.
EDTL:7075 Educational Ethnography 3 s.h.
EDTL:7751 Advanced Qualitative Data Analysis 3 s.h.

Advanced Research Design Courses

EDTL:7410 Mixed Methods Research 3 s.h.
PSQF:6265 Program Evaluation 3 s.h.
PSQF:7331 Seminar: Educational Psychology I—Current Topics (when topic is conducting research online) \( \text{arr.} \)

Advanced Quantitative Courses

EPLS:6206 Research Process and Design 3 s.h.
EPLS:6209 Survey Research and Design 3 s.h.
EPLS:6370 Quantitative Methods for Policy Analysis 3 s.h.
PSQF:6244 Correlation and Regression 4 s.h.
PSQF:6246 Design of Experiments 4 s.h.
PSQF:6247 Nonparametric Statistical Methods 3 s.h.
### COMPREHENSIVE EXAMINATION

In order to qualify to take the comprehensive examination, students must successfully complete the required course work and an extended research activity. After successful completion of the required course work and research activity, and upon recommendation of the program's faculty, a student is eligible to sit for the comprehensive examination. Completion of the required course work and research activities does not guarantee advancement to the examination.

After passing the comprehensive examination, students consult with their advisor to choose a Ph.D. dissertation committee of at least five faculty members, who approve the dissertation proposal. The student then conducts research under the primary guidance of the advisor.

### ADMISSION

Applicants to the Ph.D. program in foreign language and ESL education must meet the admission requirements of the Graduate College. They should have at least two years of experience teaching foreign language or ESL and should hold a master's degree or have completed a significant amount of graduate course work in a foreign language or foreign language education. Applicants must have a g.p.a. of at least 3.00 in graduate course work. International applicants whose first language is not English must score at least 100 (Internet-based) on the Test of English as a Foreign Language (TOEFL) with a speaking score of 26 and a writing score of 25.

Application materials should include a statement of purpose explaining the applicant's professional goals, transcripts of all undergraduate and graduate work, Graduate Record Exam (GRE) General Test scores, a sample of academic writing, and three letters of recommendation.

### Ph.D.: Language, Literacy, and Culture

The Doctor of Philosophy program in language, literacy, and culture requires a minimum of 88-90 s.h. of graduate credit. The program brings together scholarly traditions and contemporary theory in literacy and cultural studies. Course work provides a broad background in relevant theoretic and research literature and opportunities to conduct original studies that explore the nature of literacy practices both in and out of school. Graduates find employment in university and college teaching, research, curriculum development, and administration of literacy programs.

### REQUIRED COURSES

Ph.D. students complete an introductory seminar in language, literacy, and culture; at least 9 s.h. of additional doctoral seminars in the program; approved cognate areas (see "Required Ph.D. Cognates" under "Graduate Programs of Study: Overview" above); and 9-12 s.h. of graduate course work outside the Department of Teaching and Learning with 6 s.h. of those outside the College of Education. Students also earn 10-12 s.h. of dissertation credit.

Students in the Language, Literacy, and Culture Ph.D. program are required to take 18 s.h. in research course work.

Both of these:

- **EDTL:7070 Introduction to Qualitative Methods** 3 s.h.
- **PSQF:6243 Intermediate Statistical Methods** 4 s.h.

Additional credit hours as outlined below (12 s.h.):

- A sequence of courses that meets the specific research interests of a student, to be selected in consultation with their advisor.
with an adviser and the language, literacy, and culture faculty.
• Credits may be taken in any combination of qualitative, quantitative or other relevant research paradigms.
• Courses may be taken either within or outside of the College of Education.
• It is recommended that students take EALL:5150 Introduction to Educational Research (3 s.h.) early in their programs of study.

In addition, all language, literacy, and culture students must complete one of the following Department of Teaching and Learning core courses.

EDTL:7004 Schooling in the United States 3 s.h.
EDTL:7033 Seminar on Teacher Education 3 s.h.

COMPREHENSIVE EXAMINATION AND DISSERTATION
As students near the completion of their course work, they identify several key strands for review and synthesis. With guidance from their advisors, students prepare for three forms of written and oral exams: they answer take-home questions in two areas of literacy; they submit a substantive issues paper, typically a report of an exploratory study or a review of research literature on a topic of special interest; and they design a syllabus for a literacy course and write a reflective commentary that demonstrates understanding of the relationship between theory and practice.

Following successful completion of all components of the comprehensive exam, students work with a faculty member to develop a proposal for a study that will make an original contribution to the understanding of some aspect of literacy. After the proposal has been approved, students conduct research and report their findings under the primary guidance of a dissertation chair.

For detailed information on the Ph.D. program in language, literacy, and culture, see Our Programs on the Department of Teaching and Learning web site.

ADMISSION
Applicants to the Ph.D. program in language, literacy, and culture must meet the admission requirements of the Graduate College. They should have at least three years of experience teaching or tutoring language or literacy (reading, writing, English, language arts) and should have earned a master's degree in a literacy-related field. Application materials should include a statement of purpose explaining the applicant's reasons for pursuing graduate study and describing his or her future goals; transcripts of all undergraduate and graduate course work; Graduate Record Exam (GRE) General Test scores; a sample of academic writing; and three letters of recommendation.

Applications for admission and for financial aid are reviewed December 1 each year.

M.A.: Mathematics Education
The Master of Arts program in mathematics education requires a minimum of 32 s.h. of graduate credit. The program provides students with advanced specialization in mathematics and education as a better foundation for K-12 teaching.

REQUIRED COURSES
M.A. students take a minimum of 9 s.h. of course work in mathematics approved by their advisor. They also take a minimum of four courses in mathematics education, which must include EDTL:5535 Current Issues in Mathematics Education and three courses chosen in consultation with their advisor.

Students choose a cognate area, usually enrolling in three or more courses in the area. Suggested areas include educational psychology, educational statistics and measurement, history or philosophy of education, pure or applied mathematics, instructional design and technology, counselor education, curriculum, administration, and special education. Courses are chosen in consultation with a faculty member from their cognate area.

Students also complete a sufficient number of electives in mathematics and education, chosen with the approval of their advisor, to complete 32 s.h. of credit.

COMPREHENSIVE EXAMINATION
Students take three two-hour comprehensive exams: one in mathematics education, the second in mathematics, and the third in their cognate area.

ADMISSION
Applicants to the M.A. program in mathematics education must meet the admission requirements of the Graduate College. Except in unusual cases, they should hold a professional license/certificate to teach school mathematics. A combined score of 1000 on the verbal and quantitative sections of the Graduate Record Exam (GRE) General Test is preferred.

M.S.: Mathematics with Education Option
The Master of Science in mathematics with education option requires a minimum of 32 s.h. of graduate credit. The program prepares licensed/certified teachers with advanced specialization in mathematics and mathematics education. It is administered by the Department of Mathematics (p. 455) (College of Liberal Arts and Sciences).

M.S. students must earn a minimum of 24 s.h. in the Department of Mathematics, including the core master's program for either pure mathematics or applied mathematics as described below. They also must complete two courses in mathematics education.

PURE MATHEMATICS
One of these sequences:
MATH:5200 & MATH:5210 Introduction to Analysis I-II 8 s.h.
MATH:6200 & MATH:6210 Analysis I-II 6 s.h.

One of these sequences:
MATH:5000 & MATH:5010 Abstract Algebra I-II 8 s.h.
MATH:6000 & MATH:6010 Introduction to Algebra I-II 6 s.h.
And:
MATH:5400 General Topology 4 s.h.
APPLIED MATHEMATICS

All of these:

MATH:4060 Discrete Mathematical Models 3 s.h.
MATH:4610 Continuous Mathematical Models 3 s.h.
MATH:4820 Optimization Techniques 3 s.h.
MATH:5600 Nonlinear Dynamics with Numerical Methods 4 s.h.
MATH:5700 Partial Differential Equations with Numerical Methods 4 s.h.
MATH:5800 Numerical Analysis: Nonlinear Equations and Approximation Theory 4 s.h.
MATH:5810 Numerical Analysis: Differential Equations and Linear Algebra 4 s.h.

COMPREHENSIVE EXAMINATION

Students take a comprehensive examination of six hours over the required courses in either pure mathematics or applied mathematics, and education. The examination assesses the candidate’s knowledge of mathematics and of the relevance of specific concepts in teaching secondary school mathematics.

ADMISSION

Application should be made to the Department of Mathematics.

M.A.T.: Mathematics Education

The Master of Arts in Teaching program in mathematics education requires a minimum of 49 s.h. of graduate credit. The program is designed primarily for students who decide they would like to become teachers and have already completed a B.S. or B.A. in mathematics. It features advanced work in mathematics along with the courses required for certification. It is a means by which students can obtain both a Master’s degree and certification. This degree program assumes a student has completed a baccalaureate degree in mathematics equivalent to one that would be completed at the University of Iowa, but has no previous course work in education. More course work may be advised if there are mathematics courses a student has not taken as part of his or her undergraduate mathematics baccalaureate degree program to render their degree equivalent to one from the University of Iowa.

The M.A.T. program in mathematics education requires the following work.

EDUCATION

The first three courses should be taken during the first semester of registration.

EDTL:3002 Technology in the Classroom 2-3 s.h.
EDTL:3090 Orientation to Secondary Education 1 s.h.
EDTL:3095 Teaching Reading in Secondary Content Areas 1 s.h.

All of these:

EDTL:3071 Secondary Classroom Management 2-3 s.h.
EDTL:3532 Introduction and Practicum: Mathematics 3 s.h.
EDTL:3534 Methods: Middle School Mathematics 3 s.h.
EDTL:4535 Methods: High School Mathematics 3 s.h.
EDTL:4900 Foundations of Special Education 3 s.h.
EPLS:3000 Foundations of Education 3 s.h.
EPLS:4180 Human Relations for the Classroom Teacher 3 s.h.
PSQF:6200 Educational Psychology 3 s.h.

The following courses are taken concurrently and constitute the student teaching semester:

EDTL:4087 Seminar: Curriculum and Student Teaching 1-3 s.h.
EDTL:4091 Observation and Laboratory Practice in the Secondary School arr.
EDTL:4092 Observation and Laboratory Practice in the Secondary School arr.

And:

One additional graduate-level mathematics education course in consultation with an advisor

GRADUATE MATHEMATICS REQUIREMENTS

If necessary, courses fulfilling the University of Iowa mathematics major with at least one additional mathematics graduate course (one of the following).

MATH:4050 Introduction to Discrete Mathematics 3 s.h.
MATH:4060 Discrete Mathematical Models 3 s.h.
MATH:4120 History of Mathematics 3 s.h.

COMPREHENSIVE EXAMINATION

The comprehensive exam includes a required two-part Master’s level exam in mathematics and mathematics education. At the discretion of the examining committee, this exam may consist of two parts and is both written and oral. The mathematics and mathematics education comprehensive examinations will not duplicate course examinations, but will assess both mathematics education and the mathematics specialization area chosen by a student.

ADMISSION

Applicants to the M.A.T. program in mathematics education must meet the admission requirements of the Graduate College. They also must take the Graduate Record Exam (GRE) General Test and meet all Teacher Education Program (TEP) application requirements. Candidates should have completed a baccalaureate degree program in mathematics equivalent to that which is offered through the College of Liberal Arts and Sciences at the University of Iowa. An undergraduate g.p.a. of at least 3.00 is required for admission and must be maintained throughout the enrollment period.

Joint B.A./M.A.T. Mathematics Education

The College of Liberal Arts & Sciences and the College of Education offer students the opportunity to earn their Bachelor of Arts in Math plus a Master’s degree in Education in as little as five years.

The Combined B.A./M.A.T. (4+1) program provides a seamless process whereby students can progress from undergraduate to graduate status. The usual period of study for both the Bachelor of Arts and the Master’s degree is six years. Through careful planning, many of
the courses required for the M.A.T. program can be taken during the undergraduate years, creating an opportunity to focus the fifth year of study on the comprehensive and student teaching requirements. A sample plan of study is available on the College of Education’s web site at Sample B.A./M.A.T. Mathematics Education Schedule.

ADMISSION

Students are eligible to apply to the 4+1 program during their sophomore or junior year if they have a cumulative g.p.a. of at least 3.25 or if they meet special considerations. Application materials must include a completed application to the Teacher Education Program (TEP); two recommendations from University of Iowa faculty; a career plan describing how this program will enhance the student’s scholarly and/or career goals; and an unofficial transcript of student’s prior work.

Students who submit completed applications will be notified within 30 days if they have been accepted into the program. The program accepts a limited number of students each year on a competitive basis. Once accepted into the program, a student meets with an advisor to select an advisory committee to plan a course of study.

During the sixth semester, a student in the program who has completed 80 s.h. of undergraduate work and maintained a 3.00 minimum g.p.a. must apply to the Graduate College. Application to the Graduate College must include a completed Graduate College application form; a letter of application/statement of purpose; one additional letter of recommendation from a faculty member in the science major; Graduate Record Exam (GRE) General Test scores; and Test of English as a Foreign Language (TOEFL) test scores for international students.

Students will be granted undergraduate/graduate credit for course work during the seventh semester; they begin paying graduate tuition during the eighth semester until completion of the program. The baccalaureate degree must be conferred at the end of the eighth semester or in the program’s fourth year.

Ph.D.: Mathematics Education

The Doctor of Philosophy program in mathematics education requires a minimum of 80-90 s.h. of graduate credit. The program prepares supervisors, teacher education personnel, community college personnel, and researchers in mathematics education. It is administered by the College of Education.

The Ph.D. program in mathematics education requires the following work. Students must update graduate course work done more than 10 years before admission to the program.

REQUIRED COURSES

All Ph.D. students in math education must complete EALL:5150 Introduction to Educational Research during the first year of their Ph.D. program. They also must complete an additional minimum of 15 s.h. in qualitative and quantitative course work, with at least 9 s.h. from one area (qualitative or quantitative) and at least 6 s.h. from the other. Students select from courses listed at Ph.D. Research Requirements.

All doctoral students in mathematics education must complete one of the following Ph.D. core courses.

EDTL:7004 Schooling in the United States 3 s.h.
EDTL:7033 Seminar on Teacher Education 3 s.h.

In addition, all doctoral students in the Department of Teaching and Learning must complete an approved cognate area; see "Additional Requirements" below.

Ph.D. students in mathematics education must complete a minimum of 24 s.h. of graduate work in the Departments of Computer Science, Mathematics, and Statistics and Actuarial Science, as approved by their advisor. Electives are encouraged in the pure mathematics and applied mathematics sequences.

Students who completed their mathematics requirement at another institution must complete at least 6 s.h. of additional course work in mathematics at the University of Iowa, chosen with advisor approval.

Students also must complete at least six courses in mathematics education, including EDTL:5535 Current Issues in Mathematics Education and EDTL:7535 Seminar: Research in Mathematics Education.

ADDITIONAL REQUIREMENTS

Students concentrate in two additional comprehensive examination areas in either the mathematical sciences or education. A minimum of three courses usually are required for a comprehensive examination area, but candidates should consult with faculty members in the areas selected to determine which courses they should take in order to adequately prepare for the examinations.

Students must complete a total of at least 36 s.h. in College of Education courses; this includes the course work listed above. All Ph.D. students must complete an approved cognate area; a partial list of potential cognate areas is available from the M.A. program in mathematics education.

Upon completing the program, a student must have a cumulative g.p.a. of 3.00 or higher on all graduate work in mathematics, all University of Iowa graduate work in mathematics, all graduate work, and all University of Iowa graduate work.

COMPREHENSIVE EXAMINATION

Students take three written comprehensive examinations, one in mathematics education and two in other fields of education or mathematics; an oral examination follows the written examinations.

DISSERTATION

Students must earn 10 s.h. of dissertation credit in EDTL:7493 Ph.D. Thesis. Each candidate completes a dissertation on a research problem in mathematics education. A prospectus of the proposed research must be presented to the dissertation committee before the candidate undertakes the study. Upon completion of the dissertation, the candidate defends the dissertation in an oral examination.

ADMISSION

Applicants to the Ph.D. program in mathematics education must meet the admission requirements of the Graduate College. They must have an undergraduate major in mathematics or the equivalent; a current teaching license/certificate and at least two years of teaching experience are strongly preferred. A faculty review committee makes admission decisions.
M.A.: Music Education

The Master of Arts in music with concentration in music education provides students with deeper insights into music, the theory and practice of music education, and the role of music in the school curriculum. The degree requires 33 s.h. of graduate credit and is offered with or without thesis.

The program is administered by the School of Music (p. 473) (College of Liberal Arts and Sciences) in cooperation with the College of Education. Application should be made to the School of Music.

Ph.D.: Music Education

The Doctor of Philosophy in music with concentration in music education prepares students for teaching, research, and administrative posts. Graduates find employment as college teachers of music education classes and activities; as band, chorus, and orchestra directors; and as administrators of music departments and schools of music. Some apply their skills in public schools as music supervisors, research and curriculum consultants, and directors of city or district school music programs.

The program is administered by the School of Music (p. 473) (College of Liberal Arts and Sciences) in cooperation with the College of Education. Application should be made to the School of Music.

M.A.T.: Science Education

The Master of Arts in Teaching program in science education requires a minimum of 48 s.h. of graduate credit. The program is designed primarily for graduates of bachelor's degree programs in science who decide that they would like to become teachers. It features advanced work in science along with the courses required for certification, enabling students to earn a master's degree and teaching certification at the same time.

The program assumes students have completed considerable course work in science (at least 56 s.h.) as undergraduates, but no previous course work in education. Students' science course work should be equivalent to that required by the University of Iowa Science Education (p. 788) Program.

The M.A.T. program in science education requires the following work.

PROFESSIONAL EDUCATION FOUNDATION SEQUENCE

All of these:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDTL:3002</td>
<td>Technology in the Classroom (must be taken during student's first semester in the college)</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>EDTL:3071</td>
<td>Secondary Classroom Management</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>EDTL:3090</td>
<td>Orientation to Secondary Education (must be taken during student's first semester in the college)</td>
<td>1 s.h.</td>
</tr>
<tr>
<td>EDTL:3095</td>
<td>Teaching Reading in Secondary Content Areas (must be taken during student's first semester in the college)</td>
<td>1 s.h.</td>
</tr>
<tr>
<td>EDTL:4900</td>
<td>Foundations of Special Education</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>EPLS:3000</td>
<td>Foundations of Education</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

Science education courses are taken in the following sequence.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDTL:4751</td>
<td>Science Teaching and Practice with Early Learners</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>EDTL:4752</td>
<td>Methods of Teaching Science</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>EDTL:4757</td>
<td>Assessment in the Science Classroom</td>
<td>2 s.h.</td>
</tr>
</tbody>
</table>

These two taken concurrently:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDTL:4753</td>
<td>Instructional Issues in Teaching Science</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>EDTL:4779</td>
<td>Secondary School Science Practicum</td>
<td>2 s.h.</td>
</tr>
</tbody>
</table>

These three taken concurrently:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDTL:4087</td>
<td>Seminar: Curriculum and Student Teaching</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>EDTL:4091</td>
<td>Observation and Laboratory Practice in the Secondary School</td>
<td>6 s.h.</td>
</tr>
<tr>
<td>EDTL:4092</td>
<td>Observation and Laboratory Practice in the Secondary School</td>
<td>6 s.h.</td>
</tr>
</tbody>
</table>

ELECTIVES

A minimum of one graduate course in biology, chemistry, earth science, or physics is required. Students who have satisfied portions of the required science course work listed above must take additional science course work to meet the minimum requirement of 48 s.h.

COMPREHENSIVE EXAMINATION

Students complete comprehensive examinations before their student teaching semester. Two comprehensive exams, one in science education and one in a science specialization area, are required. Students may not duplicate course examinations in these areas. The science education exam, under the guidance and supervision of the examining committee, consists of two parts, written and oral. Detailed requirements for the science education comprehensive examination are available from the Department of Teaching and Learning office.

ADMISSION

Applicants to the M.A.T. program in science education must meet the admission requirements of the Graduate College. They must have a bachelor's degree with a major or equivalent in one of the sciences. A g.p.a. of at least 3.00 is required for admission and must be maintained throughout the program. Applicants must meet all Teacher Education Program (TEP) application requirements.

Joint B.A./M.A.T.: Science Education

College of Liberal Arts and Sciences students who want to teach science and are working toward a Bachelor of Arts degree with a major in biology, chemistry, environmental sciences, or physics may apply to the joint Bachelor of Arts/Master of Arts in Teaching program offered by the College of Liberal Arts and Sciences and the College of Education. The joint program enables students to earn a B.A. and an M.A.T. in five years by beginning to earn graduate credit during their fourth year of undergraduate
study and by counting up to 18 s.h. of qualifying credit toward both degrees.

B.A. students are admitted to the joint program before their fourth year. They may begin taking education courses during their third year, but they may not earn graduate credit for them until their fourth and fifth years, after they have been admitted to the joint program. Students take 30 s.h. of course work during the fifth year and must complete all remaining requirements for both degrees that year.

**SCIENCE SPECIALIZATION (BROAD FIELD SCIENCE BLOCK)**

The following courses are required for the undergraduate degree in science education at the University of Iowa. They need not be repeated by M.A.T. candidates who need one or more advanced courses in their major science area, or by students from other interdisciplinary science discipline programs that prepare teachers for grades 6-9.

SIED:4135 The Nature of Science 4 s.h.

Two of these (unless completed during undergraduate study):

- SIED:4102 Societal and Educational Applications of Earth Science and Environmental 3 s.h.
- SIED:4103 Societal and Educational Applications of Biological Sciences 3 s.h.
- SIED:4105 Societal and Educational Applications of Physical Sciences 3 s.h.
- SIED:4106 Societal and Educational Applications of Chemical Concepts 3 s.h.

Education courses required for the joint program are listed under "M.A.T.: Science Education" above. Requirements for the B.A. degree are listed under Biology (p. 119), Chemistry (p. 135), Environmental Sciences (p. 278), and Physics and Astronomy (p. 507) (College of Liberal Arts and Sciences) in the Catalog.

**M.S.: Science Education**

The Master of Science program in science education requires a minimum of 38 s.h. of graduate credit. The program is designed for teachers and supervisors (K-college) and professionals in related fields, such as medical education, college teaching, museum program management, and outreach programs. It is intended to provide experience in understanding teaching and learning and the research processes required to advance the field.

M.S. students complete course work in four areas: science education, education, research, and science. Their individual programs of study are approved by the science education faculty.

The M.S. program in science education requires the following work.

**REQUIRED COURSES**

All of these:

- EDTL:6755 Practices of Inquiry in Science Learning Environments (no substitute for this course) 3 s.h.
- EDTL:6757 Learning in the Science Classroom (no substitute for this course) 3 s.h.

EDTL:6759 Advanced Pedagogy (no substitute for this course) 3 s.h.

EDTL:7755 Independent Study in Science Education Research (taken twice for 3 s.h. each) 6 s.h.

Two science content courses chosen with the advisor 6 s.h.

A minimum of 13 s.h. chosen from these:

- EDTL:6756 Science Education: The Nature of Science 3 s.h.
- EDTL:6758 Writing in the Science Classroom 3 s.h.
- EDTL:7100 Design and Organization of Curriculum 3 s.h.
- PSQF:4143 Introduction to Statistical Methods 3 s.h.
- PSQF:6200 Educational Psychology 3 s.h.
- PSQF:6220 Quantitative Educational Research Methodologies 3 s.h.
- PSQF:6275 Constructivism and Design of Instruction 3 s.h.
- RCE:7338 Essentials of Qualitative Inquiry 3 s.h.

One additional qualitative or quantitative research methods course chosen in consultation with the advisor

May include one of these:

- EDTL:7004 Schooling in the United States 3 s.h.
- EDTL:7033 Seminar on Teacher Education 3 s.h.

**MASTER OF SCIENCE EXAMINATION**

Students must complete a thesis (EDTL:6393 Master's Thesis), for which they earn 2-4 s.h. of credit. A final oral examination is administered on campus in which the candidate defends his or her thesis. This examination includes a critical inquiry into the purposes, methods, and results of the thesis research investigation.

The final examination is conducted by a committee of no fewer than three members of the graduate faculty. In some cases, the committee must include a member from outside science education; consult the department.

**ADMISSION**

Applicants to the M.S. program in science education must meet the admission requirements of the Graduate College. They should hold an undergraduate major in a science area (or combination of science areas), in science education, or in elementary education with a science emphasis. The department recommends that applicants have teaching licensure/certification unless they are preparing for careers in allied health, museums, or community colleges.

**Ph.D.: Science Education**

The Doctor of Philosophy program in science education requires a minimum of 85 s.h. of graduate credit. The program is designed for individuals who aspire to positions as college and university science educators; major supervisors in national, state, and local systems; teachers in small liberal arts colleges; instructors of general education science courses at major universities; research directors in science education; and professionals in medical and/or allied health education.
The Ph.D. program in science education requires the following work.

**REQUIRED COURSES**

All Ph.D. students in science education must complete EALL:5150 Introduction to Educational Research during the first year of their Ph.D. program. They also must complete an additional minimum of 15 s.h. in qualitative and quantitative course work, with at least 9 s.h. from one area (qualitative or quantitative) and at least 6 s.h. from the other. Students select from courses listed at Ph.D. Research Requirements. Course selections must be consistent with other requirements for the degree.

All doctoral students in science education must complete one or both of the following Ph.D. core courses. Students may not substitute other courses for these.

- EDTL:7004 Schooling in the United States 3 s.h.
- EDTL:7033 Seminar on Teacher Education 3 s.h.

In addition, all doctoral students in the Department of Teaching and Learning must complete an approved cognate area; see "Required Ph.D. Cognates" under "Graduate Programs of Study: Overview" above.

**SCIENCE EDUCATION**

All of these (15 s.h.):

- EDTL:6754 Theory and Research on Curriculum Materials in Science (no substitute for this course) 3 s.h.
- EDTL:6757 Learning in the Science Classroom 3 s.h.
- EDTL:6759 Advanced Pedagogy 3 s.h.
- Graduate-level science education courses chosen in consultation with advisor 6 s.h.

**EDUCATION**

All of these (12 s.h.):

- EDTL:7100 Design and Organization of Curriculum 3 s.h.
- EALL:5150 Introduction to Educational Research 3 s.h.
- PSQF:6200 Educational Psychology 3 s.h.
- PSQF:6275 Constructivism and Design of Instruction 3 s.h.

**RESEARCH IN SCIENCE EDUCATION**

Both of these (21 s.h.):

- EDTL:7750 Seminar: Science Education (taken three times for 1 s.h. each) 3 s.h.
- EDTL:7755 Independent Study in Science Education Research (taken six times for 3 s.h. each) 18 s.h.

**SCIENCE AREA**

Students complete a family of courses (total of 12 s.h.) in a major science area.

**DISSERTATION**

Ph.D. students earn 10 s.h. of thesis credit in EDTL:7493 Ph.D. Thesis.

**ADMISSION**

Applicants to the Ph.D. program in science education must meet the admission requirements of the Graduate College. They should have completed a bachelor's degree in a science area (or combination of science areas), in science education, or in elementary education with a science emphasis; have a cumulative g.p.a. of at least 3.00 on undergraduate and graduate work; and have a combined score of at least 1000 on the verbal and quantitative portions of the Graduate Record Exam (GRE) General Test. Applicants must submit three letters of recommendation; a statement of purpose describing their reasons for pursuing graduate work and their goals for graduate study; and an example of their academic writing.

**M.A.: Social Studies Education**

The Master of Arts program in social studies education requires 38 s.h. of graduate credit. The program provides an opportunity for interdisciplinary work in education, history, social science, or related areas for classroom teachers, high school department chairs, supervisors, and others interested in advancing their competence in history and the social sciences and greater proficiency in teaching and supervision.

Students choose one of two programs. Program A provides interdisciplinary study in education, history, social science, or related areas for classroom teachers or others interested in advancing their competence in instruction and their subject area. Program B is for individuals who have a bachelor's degree in history or a social science and who wish to obtain a teaching license/certificate while earning the M.A. degree. Program B students must apply to both the Graduate College and the College of Education.

**PROGRAM A REQUIREMENTS**

Program A students distribute the program's required 38 s.h. among three concentration fields in history and social sciences (or related areas), social studies education, and general education, with at least 9 s.h. in each of three fields. They must earn at least 9 s.h. in courses numbered 5000 or above distributed among the three concentration fields.

Students who choose the thesis option complete a research or investigative problem. If the thesis is research or investigation in history, social science, or a related area, the thesis director is a member of the appropriate department. If the thesis is an investigative problem in social studies education, the thesis director is a College of Education faculty member.

**PROGRAM A COMPREHENSIVE EXAMINATION**

The required comprehensive examination consists of three two-hour written exams, one on each of the three concentration fields.

**PROGRAM B REQUIREMENTS**

Program B students should have completed considerable work in the social sciences and/or history as undergraduates. Students in the College of Education's Teacher Education Program for secondary education in social studies may not apply credit they have earned in required licensure courses to the 38 s.h. required for the M.A., even though the credit counts toward state teaching licensure.

Program B students who completed EDTL:4811 Introduction and Practicum: Secondary Social Studies and/or EDTL:4870 Methods: Secondary Social Studies as undergraduate or postbaccalaureate students at the University of Iowa are required to retake these courses during the M.A. program and immediately before student
teaching. Required teaching licensure course work completed at other colleges or universities is reviewed on a case-by-case basis.

Program B students who were accepted to the undergraduate Teacher Education Program before they received a baccalaureate must complete a college-level math course.

For licensure, students admitted to the M.A. in social studies education must complete 30 s.h. in a history or social science area; the 30 s.h. may include previous undergraduate and/or graduate-level course work. Required professional education course work not completed as part of the baccalaureate degree must be completed for licensure.

Students also must complete 15 s.h. in an additional history or social science licensure area; previous undergraduate course work may apply.

Students must complete all of the following professional education courses, unless they completed some of them as part of their bachelor's degree. In such cases, the semester-hour requirement for Program B is reduced accordingly, but it never falls below 38 s.h. All students must take the course work required for meeting all Iowa Department of Education requirements for teacher licensure/certification.

Professional education courses:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDTL:3002</td>
<td>Technology in the Classroom</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>EDTL:3071</td>
<td>Secondary Classroom Management</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>EDTL:3090</td>
<td>Orientation to Secondary Education</td>
<td>1 s.h.</td>
</tr>
<tr>
<td>EDTL:3095</td>
<td>Teaching Reading in Secondary Content Areas</td>
<td>1 s.h.</td>
</tr>
<tr>
<td>EDTL:4087</td>
<td>Seminar: Curriculum and Student Teaching</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>EDTL:4091</td>
<td>Observation and Laboratory Practice in Secondary School</td>
<td>6 s.h.</td>
</tr>
<tr>
<td>EDTL:4092</td>
<td>Observation and Laboratory Practice in Secondary School</td>
<td>6 s.h.</td>
</tr>
<tr>
<td>EDTL:4811</td>
<td>Introduction and Practicum: Secondary Social Studies</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>EDTL:4870</td>
<td>Methods: Secondary Social Studies</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>EDTL:4900</td>
<td>Foundations of Special Education</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>EDTL:6833</td>
<td>History and Foundations of Social Studies Education</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>EDTL:6841</td>
<td>Infusing a Global Perspective into the Curriculum</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>EDTL:6877</td>
<td>Seminar: Social Studies Education</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>EPLS:3000</td>
<td>Foundations of Education</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>EPLS:4180</td>
<td>Human Relations for the Classroom Teacher</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>PSQF:6200</td>
<td>Educational Psychology</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

Subject area specialization courses: a minimum of 9 s.h. of course work in history or a social science is required; students should take at least one course taught by the instructor who will serve on the examining committee.

**PROGRAM B COMPREHENSIVE EXAMINATION**

The comprehensive examination consists of three two-hour exams: one on the subject area specialization, one on general professional education, and one on social studies education.

**ADMISSION**

Applicants to the M.A. program in social studies education must meet the admission requirements of the Graduate College. They should have a bachelor's degree in education, history, or one of the social sciences from an accredited institution; a cumulative g.p.a. of at least 3.00; a g.p.a. of at least 3.00 in history and/or social science courses; a combined verbal and quantitative score of at least 300 on the Graduate Record Exam (GRE) General Test; and two letters of recommendation. Evidence of writing ability in a completed major paper or essay also is required. Typically, applicants to Program A are expected to hold a secondary teaching license/certificate.

After declaring a social studies education major, M.A. students must maintain a g.p.a. of at least 3.00.

**Ph.D.: Social Studies Education**

The Doctor of Philosophy program in social studies education requires a minimum of 90 s.h. of graduate credit. The program prepares secondary department chairs, supervisors, curriculum directors, teacher education personnel, and college instructors in the social sciences and in social studies education.

The required 90 s.h. of credit includes course work and the dissertation (10 s.h.).

**REQUIRED COURSES**

All doctoral students in the social studies education program are required to complete 18 s.h. of course work focused on research methodology.

Both of these:

- EALL:5150 Introduction to Educational Research 3 s.h.
- PSQF:6243 Intermediate Statistical Methods 4 s.h.

One of these:

- EDTL:7070 Introduction to Qualitative Methods in Literacy Research 3 s.h.
- PSQF:7331 Seminar: Educational Psychology ar. I—Current Topics (when topic is qualitative educational research requirements)

In consultation with an advisor, students can fulfill the remaining 8 s.h. of research methodology course work by completing any of the following courses:

Qualitative Methodology

- EDTL:7071 Critical Discourse Analysis in Educational Research 3 s.h.
- EDTL:7073 Ethnographic Methods, Theories, and Texts 3 s.h.
- EDTL:7410 Mixed Methods Research 3 s.h.
- EDTL:7751 Advanced Qualitative Data Analysis 3 s.h.
- EDTL:7774 Qualitative Research with Computer-Aided Qualitative Data Analysis Software 3 s.h.
**COMPREHENSIVE EXAMINATION**

Students take three three-hour examinations, one in each of the study areas. Depending on the distribution of course work, the nine hours of written examinations may be rearranged. The Ph.D. examining committee consists of five members, who are selected according to the nature of the student's Ph.D. program and distribution of course work. An oral examination is conducted by the committee following the written exam.

**DISSERTATION**

Ph.D. candidates must complete a dissertation on a research problem in social studies education. The candidate must present a prospectus of the proposed research to the dissertation committee before undertaking the study. Upon completion, the candidate defends the dissertation in an oral exam.

**ADMISSION**

Applicants to the Ph.D. program in social studies education must meet the admission requirements of the Graduate College. They must have a bachelor's degree in history, the social sciences, or education; a master's degree in history, the social sciences, or education; a cumulative g.p.a. of at least 3.00; and a combined verbal and quantitative score of at least 310 on the Graduate Record Exam (GRE) General Test. At least two years of teaching experience is strongly preferred. Applicants who did not write a thesis as part of their M.A. must submit seminar papers or field research as equivalents.

**M.A.: Special Education**

Special education programs are offered in K-8 and 5-12 Instructional Strategist I: Mild/Moderate, and K-12 Instructional Strategist II: BD/LD. These programs are designed to prepare graduates for positions in public schools, local and state education agencies, clinical settings, and institutions of higher education. All teacher licensure/certification programs are approved by the Iowa Department of Education.

The Master of Arts program in special education requires a minimum of 32 s.h. of graduate credit. The program prepares individuals to deliver appropriate levels of service to students with disabilities at the elementary and secondary levels, in either public or private settings. Applicants with a master's degree and special education certification may request admission in order to obtain an additional area of special education licensure/certification (i.e., professional improvement). Students typically receive licensure/certification in at least one area upon completing the program. Contact the Department of Teaching and Learning for specific program requirements.

**ADMISSION**

Applicants to the M.A. program in special education must meet the admission requirements of the Graduate College. They must have an undergraduate g.p.a. of at least 3.00 (and/or at least 3.00 on a minimum of 12 s.h. of graduate course work). A combined verbal and quantitative score of at least 1000 on the Graduate Record Exam (GRE) General Test is preferred. Applicants whose first language is not English must score at least 100 (Internet-based) on the Test of English as a Foreign Language (TOEFL).

Application materials must include a completed Graduate College application form; copies of official transcripts for all college course work; an official report of Graduate Record Exam (GRE) General Test scores; three current letters of recommendation; and evidence of experience and/or teacher licensure/certification. An interview may be requested.

Final admission decisions are made by the special education graduate admissions committee.
**Ph.D.: Special Education**

The Doctor of Philosophy program in special education requires a minimum of 90 s.h. of graduate credit. The program prepares students for teaching and research positions in higher education, and for curriculum, supervisory, and research positions in state and local education agencies. The program permits students to study and practice extensively in their special education interest area and in an interest area outside of special education.

The Ph.D. curriculum includes an emphasis on research skills, all facets of special education, an approved cognate area (see "Required Ph.D. Cognates" under "Graduate Programs of Study: Overview" above), and at least one specialization area.

**REQUIRED COURSES**

All doctoral students in special education must take EALL:5150 Introduction to Educational Research in addition to the following research requirements:

Quantitative Research Requirements (13 s.h.)

Both of these:

- PSQF:4143 Introduction to Statistical Methods 3 s.h.
- PSQF:6243 Intermediate Statistical Methods 4 s.h.

Two of these:

- EPLS:6206 Research Process and Design 3 s.h.
- PSQF:6220 Quantitative Educational Research Methodologies 3 s.h.
- PSQF:6244 Correlation and Regression 4 s.h.
- PSQF:6246 Design of Experiments 4 s.h.
- PSQF:6247 Nonparametric Statistical Methods 3 s.h.
- PSQF:6249 Factor Analysis and Structural Equation Models 3 s.h.
- PSQF:6252 Introduction to Multivariate Statistical Methods 3 s.h.

Qualitative Research Requirements (6 s.h.)

This course:

- EDTL:7953 Seminar: Single Subject Design Research 3 s.h.

One of these:

- EDTL:7410 Mixed Methods Research 3 s.h.
- EPLS:7373 Qualitative Research Design and Methods 3 s.h.

In addition, all doctoral students in special education must complete one of the following Ph.D. core courses.

- EDTL:7004 Schooling in the United States 3 s.h.
- EDTL:7033 Seminar on Teacher Education 3 s.h.

All Ph.D. students in special education must complete the following courses.

- EDTL:7943 Proseminar: Issues, Trends, and Research in Special Education 3 s.h.
- EDTL:7944 Proseminar: Issues, Trends, and Research in Special Education II 3 s.h.

Students also must complete an interdisciplinary minor in a discipline outside of special education (minimum of 12 s.h.). In addition, they are required to write the comprehensive examination and complete a doctoral dissertation, earning a minimum of 10 s.h. in EDTL:7493 Ph.D. Thesis.

**ADMISSION**

Applicants to the Ph.D. program in special education must meet the admission requirements of the Graduate College. They must have master's degree or equivalent in special education; those without an M.A. thesis must have completed an equivalent project. Applicants should have a graduate g.p.a. of at least 3.50 and a combined verbal and quantitative score of at least 1000 on the Graduate Record Exam (GRE) General Test. Applicants whose first language is not English must score at least 100 (Internet-based) on the Test of English as a Foreign Language (TOEFL). Applicants should have at least one year of full-time teaching experience with exceptional children; several years are preferred.

Applicants must include a completed Graduate College application form; copies of official transcripts for all college course work; an official report of Graduate Record Exam (GRE) General Test scores; three current letters of recommendation; and evidence of experience and/or teacher licensure/certification. An interview may be requested.

Final admission decisions are made by the special education graduate admissions committee.

**Financial Support**

A limited number of teaching assistantships are available for graduate students. Assignments vary. Some involve supervising undergraduate majors enrolled in practicums: some involve teaching sections of undergraduate methods courses and supervising student teachers; others consist primarily of research activities. Graduate assistants may register for a maximum of 12 s.h. of credit per semester. Graduate assistants must register for at least 6 s.h. per semester.

All assistantships are awarded on a competitive basis. Applicants must have been admitted to regular status in the Graduate College and to an advanced program in the College of Education. For information about assistantships, consult the College of Education advisor in the appropriate field.

**Courses**

**Elementary Education, Lower-Level Undergraduate**

**EDTL:1050 Opportunities in Education** 2 s.h.

Introduction for underrepresented students to the teaching profession and its widely varied opportunities; faculty, students, recipients of awards in education; tours of Iowa City schools; reflection on and personal integration of class learning experiences, consideration of future plans.

**EDTL:1129 First-Year Seminar** 1 s.h.

Small discussion class taught by a faculty member; topics chosen by instructor; may include outside activities (e.g., films, lectures, performances, readings, visits to research facilities). Requirements: first- or second-semester standing.
EDTL:2000 Creativity for a Lifetime 3 s.h.
Exploration of what senior artists can teach about creativity and aging; interdisciplinary project-based collaborative learning opportunities that consider role of arts and creativity across a lifespan; essential skills necessary to be professionals in numerous careers including health, social work, education, humanities, and the arts; integration of teamwork and opportunities for individual growth that allow for personal development; identification of ways for students to be more creative in their own lives and work. Same as ARTS:2000, ASP:2000, RHET:2000.

EDTL:2821 Oral Interpretation 3 s.h.
Weekly performances to develop and define communication skills for professional careers in teaching and business; poetry, prose, monologue, storytelling, duo interpretation, reader's theatre, and demonstration speeches. Requirements: for COMM:2821 — g.p.a. of at least 2.30 and minimum 30 s.h. of credit. Same as COMM:2821.

Elementary Education, Upper-Level Undergraduate and Graduate

EDTL:3002 Technology in the Classroom 2-3 s.h.
EDTL:3103 Assessment for Instructional Planning and Practice 3 s.h.
Fundamentals of using assessment data to make instructional planning decisions that preservice educators need in their advanced course work and classrooms; practical application with curriculum-based procedures; emphasis on classroom-based procedures used to make educational decisions to plan instruction for students, particularly those who are experiencing academic difficulty. Requirements: admission to TEP.

EDTL:3114 Parent-Child Relationships 3 s.h.
Roles and relationships within and between families, culture, society; identify (family) resources and concerns based on children's development, abilities.

EDTL:3120 Methods and Materials: Music for the Classroom Teacher 2 s.h.
Development of music skills, techniques, knowledge of methods and materials for teaching music to young children; for elementary education majors. Requirements: admission to TEP.

EDTL:3122 Creativity, Imagination, Play, and Human Development through the Arts 3 s.h.
Different theories related to human development and visual arts; use of visual arts to make meaning out of experience from the time people began making symbolic marks; ways to integrate visual arts into everyday life; cognitive and physical processes involved in making, understanding, and looking at visual art through studio experiences; theories of cognitive development; role of visual art in education; introduction to art production, art history, art criticism, and aesthetics.

EDTL:3123 Reading and Responding to Children's Literature 3 s.h.
Reading and teaching of children's literature; becoming more knowledgeable readers of children's literature; using children's literature in elementary classroom for aesthetic, personal, social, and critical purposes; wide range of literary texts in different genres and multiple ways readers might experience these texts given particular teaching approaches; ways in which readers interact with texts and with each other to make meaning as they read and discuss literature. Requirements: admission to elementary TEP.

EDTL:3127 Methods and Materials: Physical Education, Health, and Wellness 2-3 s.h.
EDTL:3130 Adaptive Physical Education for the Elementary Classroom Teacher 2 s.h.
Create and deliver quality, inclusive physical education for students with mental, physical, or emotional disabilities; identify and evaluate the needs of disabled students, plan units and lessons with appropriate modifications for all learners, write an IEP, comply with IDEA in a physical education setting. Prerequisites: EDTL:3127.

EDTL:3131 Movement Education 2 s.h.
Movement education as a basis for psychomotor and cognitive development in children; summary of basic growth and motor development; in-depth instruction on theory and application of movement education curriculum, and practice on design and execution of movement education lessons. Prerequisites: EDTL:3127.

EDTL:3139 American Government and Civics for the Elementary Classroom Teacher 3 s.h.
Foundations and processes of American government as related to development of civic literacy in elementary students and their teachers; founding documents, legal precedents, social and economic changes throughout American history; research-based teaching and learning processes from social studies education. Requirements: admission to TEP.

EDTL:3141 Elementary School Mathematics: Number and Operations 3 s.h.
Problem-solving approach to current trends in math education and process of teaching math; current math content knowledge assessed at start and end of course; opportunities to strengthen number and operations content knowledge; how children in grades K-5 think about and learn math; core ideas of learning, teaching, planning, and assessing number and operations concepts and skills; research-based pedagogical strategies that help children develop math concepts and procedures. Requirements: admission to TEP.

EDTL:3142 Elementary School Mathematics: Geometry and Measurement
EDTL:3143 Methods of Art Education in Elementary Schools 3-4 s.h.
Application of studio methods to teaching children in Saturday Children's Art Class Program. Same as ARTE:3143.

EDTL:3146 Elementary School Mathematics: Data/Probability and Algebra 3 s.h.
Problem-solving approach to current trends in math education and process of teaching math; current math content knowledge assessed at start and end of course; opportunities to strengthen data analysis/probability and algebra content knowledge; how grade K-5 children think about and learn math; core ideas of learning, teaching, planning, and assessing data/probability and algebra concepts and skills; research-based pedagogical strategies that help children develop math concepts and procedures. Requirements: admission to TEP.

EDTL:3154 Teaching and Learning in the Earth Sciences 3 s.h.
Meaningful and practical learning experiences to foster elementary science learning environments that engage learners in scientific practices and understanding of earth sciences; essential concepts in earth sciences; instruction to promote elementary student learning; learning, teaching, subject matter, curriculum, and assessment. Prerequisites: EPLS:3000 and EDTL:3103 and EDTL:3190 and PSQF:1075. Requirements: admission to TEP.

EDTL:3158 Teaching and Learning in the Biological Sciences 3 s.h.
Meaningful and practical learning experiences to foster elementary science learning environments that engage learners in scientific practices and understanding of biological sciences; essential concepts in biological sciences; instruction to promote learning of essential concepts; learning, teaching, subject matter, curriculum, and assessment. Prerequisites: EPLS:3000 and EDTL:3103 and EDTL:3190 and PSQF:1075. Requirements: admission to TEP.

EDTL:3159 Teaching and Learning in the Chemical/Physical Sciences 3 s.h.
Meaningful and practical learning experiences that foster elementary science learning environments and engage learners in scientific practices and understanding of physical sciences; essential concepts in physical sciences; instruction to promote student learning of essential concepts; learning, teaching, subject matter, curriculum, and assessment. Prerequisites: EDTL:3002 and EDTL:3103 and EDTL:3190 and EPLS:3000 and PSQF:1075. Requirements: admission to TEP.

EDTL:3160 Literacy Learning and Teaching I 3 s.h.
Theoretical foundations and practical skills to become reflective professionals who can design and implement effective reading and language arts instruction; authentic formative assessment for economically, academically, culturally, racially, and linguistically diverse children in grades K-3; for preservice elementary teachers. Prerequisites: EDTL:3002 and EDTL:3103 and EDTL:3190 and EPLS:3000 and PSQF:1075. Requirements: admission to elementary TEP.

EDTL:3161 Social Studies for the Elementary Classroom Teacher 3 s.h.
Individual growth and change due to environment, economy, and technology; focus on developing teacher's understanding of social and behavioral sciences and how they relate to geography, history, and government in student's growth toward democratic citizenship; emphasis on need to develop intellectually stimulating curricula based on Iowa Core in behavioral science; lesson and curriculum development from research-based best practices in teaching social studies and driven by Iowa Core goals and objectives; technology as a teaching tool and focus of investigation in today's society. Prerequisites: EDTL:3002 and EDTL:3103 and EDTL:3190 and EPLS:3000 and PSQF:1075. Requirements: admission to elementary TEP.

EDTL:3163 Methods: Elementary School Mathematics 2-3 s.h.

EDTL:3164 Literacy Learning and Teaching II 3 s.h.
Theoretical foundations and practical skills to become reflective professionals who can design and implement effective reading and language arts instruction; authentic formative assessment for economically, academically, culturally, racially, and linguistically diverse children in grades 3-6; for preservice elementary teachers. Prerequisites: EDTL:3002 and EDTL:3103 and EDTL:3190 and EPLS:3000 and PSQF:1075. Requirements: admission to elementary TEP.

EDTL:3168 History for the Elementary Classroom Teacher 3 s.h.
Development of historical literacy in elementary students and their teachers; connecting children to the past using family histories; interactions and patterns in world history; diverse perspectives in U.S. history; using primary sources to investigate state and local history. Requirements: admission to TEP.

EDTL:3170 Elementary Classroom Management 1-3 s.h.
EDTL:3172 Elementary Reading Practicum  3-4 s.h.
Experience in teaching literacy to elementary students; opportunity to learn from an experienced teacher within a functioning classroom; supervisor with classroom experience mentors and supports students at practicum site; on-site practicum experiences preceded by on-campus seminar experience with practicum coordinator and supervisors; for preservice teachers. Prerequisites: EDTL:3002 and EDTL:3103 and EDTL:3190 and EPLS:3000 and PSQF:1075.

EDTL:3174 Elementary Math Practicum  3-4 s.h.
Experience in teaching mathematics to elementary students; opportunity to learn from an experienced teacher within a functioning classroom; supervisor with classroom experience mentors and supports students at practicum site; on-site practicum experiences preceded by on-campus seminar experience with practicum coordinator and supervisors; for preservice teachers. Prerequisites: EDTL:3002 and EDTL:3103 and EDTL:3190 and EPLS:3000 and PSQF:1075. Corequisites: EDTL:3163 and EDTL:3170.

EDTL:3175 Elementary Social Studies/Science Practicum  2 s.h.
Experience in teaching social studies and science to elementary students; opportunity to learn from an experienced teacher within a functioning classroom; mentoring and support from supervisor with classroom experience at practicum site; on-site practicum experiences preceded by on-campus seminar experience with practicum coordinator and supervisors; assignments designed to enrich and augment on-site experiences and tied to student's current methods courses; for preservice teachers. Requirements: admission to TEP.

EDTL:3176 Teaching Elementary School Science  3 s.h.
Advanced science methods for elementary education majors seeking a science specialization.

EDTL:3180 Drama in the Classroom  3 s.h.
Theories of community, culture, identity in relation to language arts teaching and learning; emphasis on incorporating multiple literacies, both oral and print, into language arts curricula; action research involving oral literacy. Same as THTR:3610.

EDTL:3190 Orientation to Elementary Education  1-2 s.h.
Overview of elementary education expectations, including options for student teaching; classroom observation, lesson planning, performance indicators, INTASC standards, classroom management, information about mandatory child abuse reporting, blood-borne pathogens, professional ethics.

EDTL:3620 Methods and Materials: General Music  3 s.h.
Methods for teaching general music in elementary and secondary schools. Prerequisites: EDTL:3002 and EDTL:3090 and EDTL:3610.

EDTL:4024 Differentiating Projects with Technology  1 s.h.
Use of digital tools to enrich student presentations; PowerPoint slide shows, presentations uploaded to World Wide Web, interactive multimedia presentations via HyperStudio.

EDTL:4026 Reading for High-Ability Students  1 s.h.
Purposes and methods of reading instruction, with focus on developmentally appropriate needs of high-ability readers; genres of literature, enriched and accelerated reading curricula, role of reading in social and emotional development of gifted students.

EDTL:4028 Differentiating through Advanced Technology  1 s.h.
Multimedia and web-based tools and utilities that enrich classroom learning and facilitate presentations made by technologically advanced students; production and editing of digital video, computer graphics, advanced web-publishing and communication techniques; skill development.

EDTL:4029 Developing Leadership Skills for Gifted and Talented Students, K-12  1 s.h.

EDTL:4065 Social Studies for High-Ability Learners  1-2 s.h.
Intersection of unique challenges presented by talented students and challenges of designing, implementing, and assessing quality inquiry-based social studies instruction; background in social studies or social studies education not required.

EDTL:4066 Curriculum Concepts in Gifted Education  3 s.h.
Analyzing and refining understanding of curriculum in context of: needs of gifted and talented students, rationale for and implementation of curriculum differentiation, and curriculum principles for and applications to gifted and talented; designed for preservice and inservice educators, as well as those interested in curriculum development, design, and delivery.

EDTL:4081 ePortfolio Production  1-2 s.h.
Experience producing an ePortfolio and uploading it to the Internet; practical experience using digital tools, content and design related to ePortfolio production; experience using a web browser and access to the Internet and to a digital camera or scanner. Requirements: able to perform basic computer functions and use a World Wide Web browser. Same as PSQF:4081, EALL:4081, RCE:4081, EPLS:4081.

EDTL:4085 Current Readings and Research in Gifted Education  1 s.h.
Research in the field of gifted education and talent development; applications of research to ensure best practices in providing services and programs for high-ability learners.

EDTL:4096 Topics in Teaching and Learning  arr.

EDTL:4153 Gifted and General Education Collaboration  1 s.h.
Need for differentiated learning experiences throughout the school day for gifted students; how classroom teachers and gifted/talented resource teacher collaborate to provide appropriate instructional services to gifted students; collaborative models, planning process, and recommendations for both direct and indirect services. Requirements: access to the Internet.

**EDTL:4171 Literacy Learning and Teaching III**
Elaborates on content from EDTL:3160 and EDTL:3164; issues in theoretically sound reading and writing assessment, instruction in K-8 classrooms where local, state, and national goals play increasing roles; reading and writing processes; teaching and learning of reading and writing; focus on role of language and conversation in learning, content area reading instructional strategies, classroom-based reading and writing assessment, special issues in teaching, and learning with textbooks. Prerequisites: EDTL:3002 and EDTL:3103 and EDTL:3190 and EPLS:3000 and PSQF:1075.

**EDTL:4190 Supervised Teaching in the Elementary School: Interactive Phase**
Student teaching at the elementary level (K-9). Corequisites: EDTL:4091. Requirements: application to the Office of Teacher Education and Student Services.

**EDTL:4191 Supervised Teaching in the Elementary School: Pre- and Post-Active Phase**

**EDTL:4192 Special Area Student Teaching**
Supervised teaching and observation in specific areas of elementary curriculum (see ISIS for areas offered).

**EDTL:4193 Independent Study**
Requirements: senior standing.

**EDTL:4199 Program Models in Gifted Education**
Development and refinement of preservice and inservice educators' understanding of academic programs; needs of gifted and talented students, including diverse and often underrepresented groups of students; rationale for and implementation of a comprehensive program model for gifted students. Requirements: Internet access.

**Elementary Education, Graduate**

**EDTL:5104 Language Disorders in School-Aged Children**
Emphasis on elementary grades; usually taken in conjunction with EDTL:4192, which provides approximately 70 hours of supervised clinical practice in elementary schools. Recommendations: primarily for communication sciences and disorders majors. Same as CSD:5104.

**EDTL:6104 Literature for Children II**
Current theory, research, and practice in reading and responding to children's literature; genre and topic vary. Same as ENGL:6104.

**EDTL:6164 Early Literacy Development and Instruction**
Understanding of early reading and writing experiences; relationship of reading to other communication areas; knowledge of instructional approaches, techniques, materials, assessment procedures; interrelationship of home and school experiences; identification of current and crucial issues and relevant research.

**EDTL:6165 Reading and Writing Across Intermediate Grades**
Issues in teaching, learning, and assessment of students grades 4-9; fostering positive literate identities, literacy engagement, strategies for reading, writing, and critically responding to texts in a range of genres and formats and across content areas.

**EDTL:6167 Inquiry-Based Curriculum Development in Early Childhood and Elementary Classrooms**
Theoretical and practical organization of developmentally appropriate curricula and teaching methods to promote learning.

**EDTL:6171 Advanced Reading Clinic Techniques**
Instructional procedures for children and early adolescents with severe learning problems in reading; causes of reading disorders; educational prognosis for severely disabled readers. Corequisites: EDTL:6172.

**EDTL:6172 Advanced Reading Clinic Practicum**
Practice in selecting and using instructional procedures that address the needs and interests of struggling literacy learners, with emphasis on teaching to students' strengths; how to fit clinical teaching techniques into an overall literacy instructional program. Corequisites: EDTL:6171.

**EDTL:6293 Individual Instruction**

**EDTL:6534 Foundations of Mathematics Education**
History of U.S. mathematics education; learning theory applied to teaching, learning mathematics; curriculum design; curriculum/standards and achievement patterns in the United States and other countries; equity; research literature.

**EDTL:6955 Social and Behavioral Interventions**
Design, implementation, and evaluation of function-based interventions for students with significant behavioral challenges; functional behavior assessment, multi-component intervention design, and single-subject methodology to test effects of intervention in a K-12 school.

**EDTL:7004 Schooling in the United States**
Governance, finance, and policy structures that have influenced teaching and learning in public schools.

**EDTL:7008 Seminar: Research and Current Issues**
Review of literature, critical analysis of reported research, and study of current issues and problems for a specific curricular area; topics vary.

EDTL:7040 Advanced Topics in Teaching and Learning 3 s.h.
Topics vary.

EDTL:7092 Field Service Project 3 s.h.
Individual field service project in a specific curricular area; for advanced students.

EDTL:7093 Research Project 3 s.h.
Individual research projects in a specific curricular area; for advanced students.

EDTL:7100 Design and Organization of Curriculum 3 s.h.
Major issues, modern selection, sequential arrangement, organization of content; relationship of time allotments to implementation; utilization of instructional equipment; appraisal procedures; staff participation in curriculum development.

EDTL:7165 Reading Clinic: Supervision 3 s.h.
Supervised experience in guiding and improving teacher performance in clinical practicums.

Secondary Education, Upper-Level Undergraduate and Graduate

EDTL:3001 Introduction to Museum Studies 3 s.h.
Overview of museum history, function, philosophy, collection, and curatorial practices; governance and funding issues; exhibition evaluation and audience studies; examples from Museum of Art, Museum of Natural History, Old Capitol Museum, and Medical Museum. GE: Social Sciences. Same as SIED:3001, ANTH:3001, MUSM:3001.

EDTL:3010 Learning in Museums 3 s.h.
Exploration of the methodology of museum education; institutional objectives that facilitate learning in museum setting; exhibition and program development, didactic materials, and funding strategies. Prerequisites: MUSM:3001. Recommendations: good writing skills. Same as MUSM:3110.

EDTL:3026 Workshop for Secondary School Journalism/Communication Teachers 1-3 s.h.
Workshops on journalism/mass media curriculum, audio/video production, photojournalism, publication design, journalistic writing techniques, advising student publications. Same as JMC:3210.

EDTL:3060 Pre-Intern Fall 4 s.h.
First course in the Regents collaborative Iowa Teacher Intern License Pathway program. Requirements: admission to the ITILP program.

EDTL:3061 Pre-Intern Spring 4 s.h.

EDTL:3062 Pre-Intern Summer I 4 s.h.
Third course in the Regents collaborative Iowa Teacher Intern License Pathway program. Prerequisites: EDTL:3060 and EDTL:3061.

EDTL:3063 Pre-Intern Summer II 6 s.h.
Fourth course in the Regents collaborative Iowa Teacher Intern License Pathway program. Prerequisites: EDTL:3060 and EDTL:3061 and EDTL:3062.

EDTL:3064 Intern Year 4 s.h.
Fifth course in the Regents collaborative Iowa Teacher Intern License Pathway program. Prerequisites: EDTL:3060 and EDTL:3061 and EDTL:3062.

EDTL:3071 Secondary Classroom Management 2-3 s.h.
Characteristics of the classroom environment and their implications for organization and management; concepts and principles teachers can use when thinking about managerial tasks in the classroom; for prospective middle and secondary school teachers. Prerequisites: EDTL:3090. Requirements: admission to TEP.

EDTL:3090 Orientation to Secondary Education 1 s.h.
Overview, including options for student teaching, classroom observation, lesson planning, classroom management, performance indicators, INTASC standards, blood borne pathogens, professional ethics.

EDTL:3095 Teaching Reading in Secondary Content Areas 1 s.h.
Integration of reading strategies into secondary content areas for teacher candidates in secondary education.

EDTL:3204 Art Education Studio 3-4 s.h.
Art training related to processes of elementary, secondary school art teaching; studio methods applied to teaching children, adolescents. Requirements: concurrent enrollment in EDTL:3290 for Teacher Education Program student.

EDTL:3205 Methods of Art Education in Secondary Schools 4 s.h.
Art education theory and methods at secondary levels; art curriculum, unit, and lesson planning; evaluation, motivation, instructional materials; observational techniques.

EDTL:3290 Introduction and Practicum: Art 2-3 s.h.
Practice of learning from an experienced art teacher in an art classroom and setting; observations in an art classroom side-by-side with experience and insight gained through participating and teaching in the Saturday Art Workshop Program. Requirements: admission to TEP.
EDTL:3382 Language and Learning 2-3 s.h.
How language reflects and constructs learners' identities and cultures; readings related to oral and written language, native and second language development, linguistic diversity; discussion of the relationship of language theory to schools of language instruction. English majors may apply this course to the following area and/or period requirement. AREA: Literary Theory and Interdisciplinary Studies. Same as ENGL:3190.

EDTL:3393 Reading and Teaching Adolescent Literature 3 s.h.
Reading and evaluation of literature suitable for junior and senior high school students. English majors may apply this course to the following area and/or period requirement. AREA: Literary Theory and Interdisciplinary Studies. Same as ENGL:3191.

EDTL:3532 Introduction and Practicum: Mathematics 3 s.h.
Experience designing and teaching lessons with varied instructional intent and use of multiple instructional strategies; study and practice methods of managing classroom learning environment; significant time spent in cooperating schools, on-campus meetings. Requirements: admission to TEP.

EDTL:3534 Methods: Middle School Mathematics 3 s.h.
Subject matter content, teaching and assessment techniques for grades 5-9 math; how students learn mathematics; mathematics curricular planning for all students.

EDTL:3605 Instrumental Techniques 2 s.h.
Same as MUS:3605.

EDTL:3610 Introduction and Practicum: Music 2 s.h.
Experience observing and assisting music teachers and students in elementary or secondary schools; six hours per week in the school plus on-campus class meetings. Requirements: admission to TEP.

EDTL:3630 Band Methods and Materials 3 s.h.
High school and elementary school music methods required for teaching certificate; for instrumental music education majors. Same as MUS:3630.

EDTL:3635 Instrumental Conducting 3 s.h.
Advanced skills for instrumental conducting, score analysis, rehearsal techniques, literature selection. Prerequisites: MUS:3625. Same as MUS:3635.

EDTL:3640 Choral Methods 3 s.h.
Organization, implementation of effective choral music programs for all ages. Same as MUS:3640.

EDTL:3645 Choral Conducting and Literature 3 s.h.
Advanced skills appropriate to choral conducting, analysis, literature selection studied and implemented to develop a secure approach to choral art; students preparing to teach in the elementary or secondary schools must register under EDTL:3645. Prerequisites: EDTL:3640 and MUS:3625. Same as MUS:3645.

EDTL:3660 String Methods and Materials 3 s.h.
Methods for teaching bands in schools. Offered fall semesters. Same as MUS:3660.

EDTL:4021 Science for High Ability Students 1 s.h.
Unique challenges and opportunities confronted by teachers of students with above average ability and interest in science; theory and practice; development of program outlines for science programs.

EDTL:4022 Math Programming for High Ability Students 1 s.h.
Unique challenges and opportunities confronted by teachers of high-ability students; theory and practice, development of program outlines for implementation. Same as PSQF:4122.

EDTL:4025 Differentiated Instruction for the Gifted 1 s.h.
Program options for K-12 gifted students; student abilities and needs linked with various curriculums; case studies, school materials.

EDTL:4032 Middle School Curriculum and Methods 3 s.h.
Junior high and middle school development compared; characteristics of exemplary programs, disciplinary and interdisciplinary trends; variety of teaching methods (group and individual); hands-on activities. Requirements: admission to TEP.

EDTL:4072 Thinking Skills 1 s.h.
Factors involved in teaching thinking skills as a total concept; the relationship of critical and creative thinking; review of published programs.

EDTL:4073 Programming/Curriculum for High Ability Students 1 s.h.
Programming and curriculum for K-12 students identified as gifted or highly able; in-class differentiations, special projects for pull-out programs, facilitating research projects, mentoring in advanced programming.

EDTL:4074 Differentiation at the Secondary Level 1 s.h.
Importance of differentiation for gifted learners in middle school and high school; differentiation through advanced placement programs as well as broader perspectives on differentiation; essentials for differentiation understood and applied to a lesson that will be implemented with students.

EDTL:4077 Seminar: Curriculum and Student Teaching 1-3 s.h.
Discussions, role-playing, group and individual reports, analysis of critical incidents, classroom management, videotapes of student classroom performance pertinent to participants' student teaching experiences. Requirements: student teaching.

EDTL:4089 Elementary School Special Subject Area Student Teaching arr.
Supervised teaching experience in a single subject in grades 1-6.
EDTL:4091 Observation and Laboratory Practice in the Secondary School
Student teaching experience in performing the duties of regular classroom teachers under supervision of experienced personnel in secondary schools.

EDTL:4092 Observation and Laboratory Practice in the Secondary School
Continuation of EDTL:4091.

EDTL:4314 Introduction and Practicum: Secondary English
Experience observing and assisting English or speech teachers and students in secondary schools; 12 hours per week in the school plus on-campus class meetings.

EDTL:4315 Methods: Secondary English
Organizational techniques, methods, materials for teaching high school English; experience in simulated teaching situations during laboratory sessions, integrated with lectures and discussions. Prerequisites: EDTL:4314. Same as ENGL:4810.

EDTL:4355 Approaches to Teaching Writing
Theories, practices, strategies, and history of writing and teaching writing. English majors may apply this course to the following area and/or period requirement. AREA: Nonfiction and Creative Writing. Same as CNW:4355.

EDTL:4394 Methods: Secondary Reading
Methods and materials used in teaching developmental reading in all junior and senior high school content areas. Prerequisites: EDTL:4314.

EDTL:4406 Foreign Language Education Practicum I
Skill development for teaching languages in the early grades; curriculum design, test creation, microteaching with inservice teachers. Prerequisites: EDTL:4410. Corequisites: EDTL:4416.

EDTL:4407 Foreign Language Education Practicum II
Practice in lesson design, classroom management techniques, evaluation skills during work with inservice foreign language teachers. Prerequisites: EDTL:4410. Corequisites: EDTL:4417.

EDTL:4410 Teaching K-12 Second Language Learners
Second language learning and teaching in the multicultural classroom; influence of school setting, societal context. Requirements: admission to TEP.

EDTL:4416 Learning to Teach Second Languages I
Approaches, methods, and techniques of teaching the modalities of listening, speaking, reading, and writing in a second language. Corequisites: EDTL:4406.

EDTL:4417 Learning to Teach Second Languages II
Curriculum design, classroom management, student evaluation, technology, using context to teach culture in second languages. Prerequisites: EDTL:4410 or EDTL:6483. Corequisites: EDTL:4407.

EDTL:4418 ESL Practicum I
Skill development for teaching English as a second language; curriculum design, test creation, microteaching with inservice teachers.

EDTL:4467 Methods for Teaching English to Speakers of Other Languages in K-12 Settings
Exploration of approaches, methods, and practices in teaching English to speakers of other languages in K-12 school settings; communicative and content-based approaches to language learning with practical application of theory and research; issues concerning linguistically diverse learners covered with pedagogical implications; skills in teaching approaches for English language learners; lesson and unit planning, materials evaluation and adaptation, and assessment for placement, diagnosis, exit, and evaluation of English language learners.

EDTL:4468 Instruction of English Language Learners for K-12 Classrooms
Preparation to work with English Learners (ELLs) in K-12 settings; dramatic increase in this population over recent decade; need for teachers to understand sociocultural and linguistic challenges faced by ELLs and their families; proficiency in instructional and differentiation strategies for instructing ELLs; ELL variation and cultural considerations, English language development standards, second language teaching and learning, differentiation for ELLs, effective practice for ELL instruction and assessment; for students in teacher preparation program.

EDTL:4498 Language Structure for Teaching English Language Learners
Exploration of approaches, methods, and practices in teaching English to speakers of other languages in K-12 settings; communicative and content-based approaches to language learning with practical application of theory and research; issues concerning linguistically diverse learners covered with pedagogical implications; skills in teaching approaches for English language learners; lesson and unit planning, materials evaluation and adaptation, and assessment for placement, diagnosis, exit, and evaluation of English language learners.

EDTL:4535 Methods: High School Mathematics
Subject matter content, teaching and assessment techniques for grades 9-12 math; how students learn mathematics; mathematics curricular planning for all students. Prerequisites: EDTL:3534.

EDTL:4630 Psychology of Music
Cognition of music, affective response, aesthetic response, musical ability. Same as MUS:4630.

EDTL:4640 Introduction to Music Research
Preparation for conducting research on music behavior.
EDTL:4751 Science Teaching and Practice with Early Learners
2 s.h.
Introduction to students, schools, the purpose of schooling children in science, learning theories, science curricula, contemporary science education issues, effective science teaching.

EDTL:4752 Methods of Teaching Science
3 s.h.
Developing, writing, and orally defending a robust research-based framework for teaching science that includes student goals, student actions, content, materials, activities, teaching behaviors and strategies, contemporary learning theories, self-evaluation. Prerequisites: EDTL:4751.

EDTL:4753 Instructional Issues in Teaching Science
3 s.h.
Articulating, experiencing, practicing a research-based framework for teaching science in the real world of students, schools, teaching. Prerequisites: EDTL:4752. Corequisites: EDTL:4779.

EDTL:4757 Assessment in the Science Classroom
2 s.h.
Exploration of ways in which students are assessed in science classrooms; methods used to assess student learning and theoretical backgrounds; formative/summative assessment techniques, including technology-based assessment; development of assessment around three guiding questions: Where are you trying to go? Where are you now? How can you get there?; ways in which assessment theories guide teaching and learning. Requirements: admission to TEP.

EDTL:4779 Secondary School Science Practicum
arr.
Supervised teaching experience in a single subject; secondary school setting.

EDTL:4811 Introduction and Practicum: Secondary Social Studies
3 s.h.
Experience observing and assisting social studies teachers and students in secondary schools; nine hours per week in the school plus on-campus class meetings. Requirements: admission to TEP.

EDTL:4870 Methods: Secondary Social Studies
3 s.h.
Analysis of the teaching-learning process; organization of social studies content for teaching purposes; evaluation of learning procedures and new strategies; practicum work includes microteaching, computer-assisted modules, lesson plan development, writing test items.

EDTL:4876 Advanced Methods for Teaching and Learning in a Culturally Responsive Classroom
3 s.h.
Multiculturalism and equity issues in education that support development of resources and lesson activities to appeal to a diverse student body; asynchronous online course for educators in all disciplines who are pursuing licensure or currently teaching in a K-12 classroom, advanced technological literacy not required. Eight weeks. Requirements: successful completion of a methods course in K-12 licensure program.

EDTL:5080 Workshop: Teacher Training for Advanced Placement Courses
1-2 s.h.
Focus on a particular academic content area.

EDTL:5086 Curriculum Foundations
2-3 s.h.
Elementary and secondary background developments in curriculum; definitions, historical perspective, philosophies, theories of knowledge, models, learning theories, directions of development and shaping forces; emphasis on development of a curriculum project. Same as SLA:5501.

EDTL:5535 Current Issues in Mathematics Education
1-3 s.h.
Recent curriculum developments, experimental programs, research relevant to classroom instruction, trends in education that may have a significant impact on mathematics programs.

EDTL:5600 Graduate Music Education Workshop
1 s.h.
For inservice music teachers; topics vary. Same as MUS:5600.

EDTL:5601 Graduate Music Education Workshop II
1 s.h.
Varied topics; for inservice music teachers. Same as MUS:5601.

EDTL:5610 Foundations of Music Education Curricula
3 s.h.
Curriculum development, instructional materials, analysis of current teaching methods and techniques in school music programs; historical foundations of music education.

Secondary Education, Graduate

EDTL:6267 Seminar: Current Issues in Art Education
3-4 s.h.
Analysis of literature in art education and related disciplines. Same as ARTE:6267.

EDTL:6315 M.A. Seminar: English Education
arr.
Significant developments in English education; primary and collateral readings. Same as ENGL:6315.

EDTL:6393 Master's Thesis
arr.

EDTL:6400 Fundamentals of Second Language Assessment
3 s.h.
How to write language tests; discussion of fundamental issues in development of new tests or selection of existing tests. Same as SLA:6503.

EDTL:6402 Second Language Program Management
3 s.h.
Preparation for supervising, administering foreign language programs at all levels; for precollege language teachers and graduate students. Same as SLA:6504.
EDTL:6403 Language Policy and Planning 3 s.h.
Sociology and politics of national policies involving language, internationally; development of a research-based policy perspective on language issues in the country in which the student intends to teach.

EDTL:6407 Reading in Non-Roman Scripts 3 s.h.
Theory and practice of reading in languages that use non-Roman alphabets, syllabary, logographic systems; reading in first and second language contexts; instructional and literacy development issues. Prerequisites: EDTL:4171 or EDTL:6484. Same as SLA:6975.

EDTL:6408 Designing Materials for Second Language Instruction 3 s.h.
Critical perspective on creating and using media for second language learning and teaching; research on materials design, development of media. Prerequisites: EDTL:6483. Same as SLA:6505.

EDTL:6409 Cultural Curriculum 3 s.h.
Culture's role in foreign/second language teaching; definition, pedagogy, assessment, and materials that allow culture to be taught and learned. Same as SLA:6970.

EDTL:6480 Issues in Foreign Language Education 3 s.h.
Theoretical perspectives of pivotal research issues at the forefront of foreign language education; systems available to foreign language professionals for disseminating research. Same as SLA:6500.

EDTL:6483 Second Language Classroom Learning 3 s.h.
Synthesis of empirical findings on children's and adults' learning of a second or foreign language; emphasis on theoretical underpinnings of approaches, methods, techniques in language teaching. Same as ASIA:6483, SLA:6506.

EDTL:6484 Reading in a Second Language 3 s.h.
Current theory, research, practice in second language reading field; role of textual features and the reader in reading comprehension. Same as SLA:6501.

EDTL:6497 Principles of Course Design for Second Language Instruction 3 s.h.
Contemporary views of second language curriculum design; guidelines necessary for the creation of prototypical curriculum units to be transposed into classroom-ready forms; for individuals interested in foreign language materials development. Same as SLA:6502.

EDTL:6530 Workshop in School Mathematics 0-3 s.h.
Recent developments in school mathematics teaching methods and curriculum relevant to a selected issue; one to three weeks of intensive examination, experience.

EDTL:6531 Technology in School Mathematics 2-3 s.h.
Methods, materials, issues, pedagogy, assessment; use, evaluation of technology for mathematics teaching and learning; implications for organization, development of course content.

EDTL:6536 Teaching of Geometry 2-3 s.h.
Current developments in teaching middle school/junior high and high school geometry; selection, organization of content; research on teaching and learning.

EDTL:6539 Teaching of Algebra 2-3 s.h.
Current developments in curriculum and instructional methods in secondary school algebra; classroom use of the history of algebra, use of technologies, implications of current research for the algebra classroom.

EDTL:6570 Foundation of School Mathematics Curriculum 3 s.h.
Elementary and secondary background developments in school and mathematics curriculum; definitions, historical perspective, reform, theories of knowledge, implementation, evaluation, international perspectives, issues in mathematics curriculum.

EDTL:6600 Individual Projects in Music Education 1-2 s.h.
Projects of special concern to individual music teachers in public schools.

EDTL:6754 Theory and Research on Curriculum Materials in Science 3 s.h.
Theoretical perspectives and empirical research on design and use of science curriculum materials; contemporary theoretical assumptions about active and participatory relationships between curriculum materials, teachers, and students in particular institutional contexts; exploration of heuristics for development of effective science curriculum materials and recent research on how elementary, middle, and secondary teachers evaluate, adapt, and enact them through professional practice; for students with research and/or development interests based in K-16 contexts.

EDTL:6755 Practices of Inquiry in Science Learning Environments 3 s.h.
Contemporary perspectives on inquiry-based science teaching and learning, implications for theory and research; readings, discussions, presentations, and writing to examine and build upon policy-level science education reform discourse, sociological and organizational theory, empirical research in science education.

EDTL:6756 Science Education: The Nature of Science 3 s.h.
Relationship between scientists' work and current theoretical and practical portrayals of the nature of science in K-16 education.

EDTL:6757 Learning in the Science Classroom 2-3 s.h.
Assumptions about learning and about learning theories and their impact on pedagogical actions; how some concepts are planned and implemented.

EDTL:6758 Writing in the Science Classroom 3 s.h.
Literacy in the science classroom; theoretical and pedagogical perspectives; practical classroom activities that lead to effective writing and increased learning.

**EDTL:6759 Advanced Pedagogy** 3 s.h.
Theoretical and practical perspectives on pedagogy; how to assess practice, provide feedback, and build learning pathways for teachers.

**EDTL:6833 History and Foundations of Social Studies Education** 3 s.h.
Historical, philosophical, social foundations of social studies education; recent debates over content and instructional processes; student research proposals.

**EDTL:6840 Theories and Perspectives in Global Education** 3 s.h.
Examination of theories and perspectives within global education that help to understand historical and contemporary social, political, economic, and cultural issues; relationship to international studies, international education, global cultures, human rights, social justice, and other areas; interaction with global educators who conduct research and/or teach in institutes of higher education around the world.

**EDTL:6841 Infusing a Global Perspective into the Curriculum** 2-3 s.h.
Rationales, conceptualizations, and themes in global perspectives in education, implications for curriculum change; elements of perspective consciousness, cultural universals, cultural diversity, cross-cultural awareness, global systems, global history, global issues; application and evaluation of ideas within fields of study and varied teaching situations.

**EDTL:6877 Seminar: Social Studies Education** arr.
Periodical literature, trends, curricular developments, research in various aspects of social studies education; for master's and doctoral candidates in social studies education.

**EDTL:7015 Ph.D. Seminar in Language, Literacy, and Culture** arr.
Historical, recent research and theory in literacy education; topics vary.

**EDTL:7033 Seminar on Teacher Education** 3 s.h.
History, structure, and politics of teacher education; current practice and agendas for reform; new developments in teacher assessment.

**EDTL:7070 Introduction to Qualitative Methods in Literacy Research** 3 s.h.
Conceptual and practical exploration of qualitative research design methods, including data collection, analysis, and reporting; understanding proposal writing.

**EDTL:7071 Critical Discourse Analysis in Educational Research** 3 s.h.
Critical discourse analysis (CDA) as theory and method; social and power relations, identities, and knowledge through written, visual, and spoken texts in social settings, such as schools, families, communities; theoretical and methodological traditions of CDA in educational research; critical approaches to analyzing spoken, written, and visual texts. Prerequisites: EDTL:7070 or EPLS:7373 or PSQF:7331 or RCE:7338.

**EDTL:7072 Advanced Methods of Literacy Research: Qualitative Data Analysis and Reporting** 3 s.h.
Advanced course in traditional and contemporary qualitative data analysis methods and varied forms of reporting to understand, critique, and conduct research about literacy learning and teaching. Prerequisites: EDTL:7070 or EPLS:7373 or PSQF:7331 or RCE:7338.

**EDTL:7073 Ethnographic Methods, Theories, and Texts** 3 s.h.
Practical and theoretical background for conducting ethnographic field studies in literacy, schooling, language, or a field of student's choice; methods, methodologies, and perspectives from anthropology, sociology, folklore, journalism, literary criticism, cultural, critical, and composition theory; read historical and contemporary ethnography, consider ethnographic forms of expression (films, graphics, fiction, poems); roles, responsibilities, and ethics of writer, reader, viewer, and informant; tools, methods, and writer's techniques to develop an ethnographic portfolio. Prerequisites: EDTL:7070 or EPLS:7373 or PSQF:7331 or RCE:7338.

**EDTL:7075 Educational Ethnography** 3 s.h.
Study of culture and social organization; how ethnographers become participant-observers of varying degrees in the social setting they study; opportunities to explore ethnographic research methods; focus on ethnography in educational settings; methods used in a variety of contexts including communities, businesses, families, and other social organizations; ethnography committed to social justice; social theory, issues of power and privilege, unequal access to socioeconomic and educational opportunities.

**EDTL:7380 Practicum in College Teaching** arr.

**EDTL:7385 Teaching and Learning in Higher Education** 3 s.h.
Current theoretical and empirical literature on teaching and learning in higher education; focus on development of effective teaching practice. Same as PSQF:7385, EPLS:7385, GRAD:7385, RCE:7385.

**EDTL:7405 Research Methods in Second Language Teaching and Learning** 3 s.h.
Overview of common research methods used to study second language (L2) teaching and learning and related fields; variety of readings from current L2 publications, presentations, video testimonials by active L2 researchers, discussions of readings, and activities designed to process and apply concepts; field research methods; designing a rigorous research study on topic of student's choice; speaking and writing with confidence about research methods used in other studies.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Description</th>
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<tbody>
<tr>
<td>EDTL:7406</td>
<td>Proposal Writing for Second Language Research</td>
<td>3 s.h.</td>
<td>Procedures and techniques for writing research proposals at the doctoral level; written research proposal dealing with a question in second language teaching and learning.</td>
</tr>
<tr>
<td>EDTL:7410</td>
<td>Mixed Methods Research</td>
<td>3 s.h.</td>
<td>Introduction to mixed methods research in education; knowledge and skills necessary to conduct mixed methods study; history and language of mixed methods research; identification and processing arguments for and against mixed methods research; extend understanding of research in education; how to assess strengths and weaknesses of published mixed methods studies; investigation of one or more mixed methods research designs in depth; application of mixed methods research design to a research proposal. Prerequisites: EALL:5150. Requirements: formal introduction to quantitative and qualitative research methods, and familiarity with basic steps of research process. Recommendations: direct experience conducting research studies not required. Same as EPLS:7392.</td>
</tr>
<tr>
<td>EDTL:7535</td>
<td>Seminar: Research in Mathematics Education</td>
<td>arr.</td>
<td>Analysis of current research, research methodology, curriculum developments in mathematics education; topics vary.</td>
</tr>
<tr>
<td>EDTL:7600</td>
<td>Seminar: Current Topics in Music Education</td>
<td>2-3 s.h.</td>
<td>Major areas of professional and research interest.</td>
</tr>
<tr>
<td>EDTL:7640</td>
<td>Advanced Research in Music Education</td>
<td>3 s.h.</td>
<td>Design, performance, analysis, and reporting of music research.</td>
</tr>
<tr>
<td>EDTL:7707</td>
<td>Research: Science Education</td>
<td>arr.</td>
<td>Planning of individual research projects by M.S. and Ph.D. students.</td>
</tr>
<tr>
<td>EDTL:7750</td>
<td>Seminar: Science Education</td>
<td>0-2 s.h.</td>
<td>Discussion of completed faculty and doctoral candidates' research, national issues, program features.</td>
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<tr>
<td>EDTL:7751</td>
<td>Advanced Qualitative Data Analysis</td>
<td>3 s.h.</td>
<td>Varied approaches to qualitative data analysis and philosophical foundations; analysis and interpretation of qualitative data; writing qualitative research findings. Prerequisites: EDTL:7070 or EPLS:7373 or PSQF:7331 or RCE:7338.</td>
</tr>
<tr>
<td>EDTL:7755</td>
<td>Independent Study in Science Education Research</td>
<td>2-3 s.h.</td>
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<tr>
<td>EDTL:7756</td>
<td>Research Apprenticeship in Science Education</td>
<td>3 s.h.</td>
<td>Practical experiences in science education research in a collaborative, team-oriented environment; apprenticeship model of instruction in which students' participation in authentic tasks and their learning are mutually constitutive; engagement in actual research practices to produce an empirically-based product; development of expertise with some aspect of research methodology determined by instructor; for graduate students with interests in research or development based in K-16 contexts.</td>
</tr>
<tr>
<td>EDTL:7774</td>
<td>Qualitative Research with Computer-Aided Qualitative Data Analysis Software</td>
<td>3 s.h.</td>
<td>Qualitative data analysis using computer-aided qualitative data analysis software (CAQDAS); emphasis on methodological approaches to data analysis, and practical and experiential aspects of using CAQDAS to conduct these stages of analysis; opportunity to work with ATLAS.ti, NVivo, Dedoose, and the Coding Analysis Toolkit (CAT); capstone product is a research report based upon qualitative analysis; students strongly encouraged to analyze data from their own research.</td>
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</table>

**Special Education, Upper-Level Undergraduate and Graduate**

Courses at the 3000 level are open to students in education and related disciplines.

<table>
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<tr>
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<tbody>
<tr>
<td>EDTL:3905</td>
<td>Teaching Deaf and Hard of Hearing Students</td>
<td>3-4 s.h.</td>
<td>Issues in deaf education; management techniques, communication strategies, teaching strategies, instructional materials, hands-on activities, assessments, parent involvement; use of technology, ethnic and cultural diversity, classroom management, pre-reading techniques, literacy development, educational program options. Taught in English and/or American Sign Language. Requirements: for 4 s.h. option — concurrent enrollment in ASL:2002, if not taken as a prerequisite. Same as ASLE:3905.</td>
</tr>
<tr>
<td>EDTL:3915</td>
<td>Introduction: Strategist I (Elementary)</td>
<td>1-2 s.h.</td>
<td>Teaching students with mild disabilities in elementary resource placements; current trends and issues, basic and theoretical approaches, implications of federal and state statutes, multidisciplinary team approaches to providing appropriate educational programming; students complete a practicum with an elementary special education teacher. Requirements: admission to TEP.</td>
</tr>
<tr>
<td>EDTL:3933</td>
<td>The Culturally Different in Diverse Settings</td>
<td>3 s.h.</td>
<td>Diversity in society; laws—past and present, experiences, incidents, how they affect society.</td>
</tr>
<tr>
<td>EDTL:3938</td>
<td>Assessment of Learning Problems</td>
<td>3 s.h.</td>
<td>Effective use of varied formal and informal assessment techniques for students with learning and behavior problems; techniques that inform teaching decisions. Requirements: admission to TEP and Elementary Strategist I program.</td>
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</tbody>
</table>
EDTL:3963 Inclusive Theatre 3 s.h.
Introduction to implementation of performance opportunities for special populations (defined as those with cognitive or physical disability) and underrepresented populations. Same as THTR:3605.

EDTL:3976 Reading Intervention for Students At Risk 3 s.h.
Reading instructional approaches for students at risk for, or with reading disabilities; students enrolled in lab apply content while working with a reading disability student; use of effective teaching principles and research-based practices for designing and delivering instruction in reading (including oral and silent reading), vocabulary development, reading fluency, comprehension. Requirements: admission to TEP.

EDTL:4137 Introduction to Educating Gifted Students 3 s.h.
Fundamental issues such as curriculum, counseling, family issues, gender and minority issues. Same as RCE:4137.

EDTL:4188 Practicum in Teaching and Curriculum Development in Gifted Education 1-6 s.h.
Experience in developing course materials for classes offered through the Belin-Blank Center for Gifted Education. Same as RCE:4188.

EDTL:4189 Practicum in Gifted/Talented Education 1 s.h.
Experience developing course materials for classes offered through the Belin-Blank Center for Gifted Education.

EDTL:4900 Foundations of Special Education 3 s.h.
Students with disabilities, gifted and talented; strategies for effective treatment, collaboration between regular and special education teachers; remediation of academic, behavioral, social problems.

EDTL:4921 Transition and Related Issues 3 s.h.
Curriculums, programs, and delivery systems that help persons with disabilities move from preschool to elementary, elementary to middle school, middle school to high school, and to postsecondary life; emphasis on ecological and task analysis, transition planning strategies, interagency collaboration, self-determination, access to resources and support services.

EDTL:4922 Supervised Teaching: Elementary Strategist I 7 s.h.
Student teaching at the elementary level in a program for students with mild to moderate disabilities. Requirements: elementary education major.

EDTL:4934 Parent-Teacher Communication 1-3 s.h.
Realities of working with parents; interpersonal skills; options for parent support services. Same as PSQF:4134.

EDTL:4936 Home/School/Community Partnerships 3 s.h.
Issues related to collaboration among families, educators, community members in implementing school programs. Same as PSQF:4136.

EDTL:4940 Characteristics of Disabilities 3 s.h.
Etiologies of mild/moderate disabilities; current educational trends; educational alternatives; importance of multidisciplinary team; psychological and social-emotional characteristics of individuals.

EDTL:4950 Behavioral and Social Interventions 3 s.h.
Individual behavioral management, behavioral change strategies, and social interaction strategies, methods, and techniques for individuals with exceptional learning needs.

EDTL:4967 Integrated Disability Studies Practicum 1-3 s.h.
Hands-on, interactive experience to learn what is involved in working with young adult students with multiple learning and cognitive disabilities; four whole-group classroom sessions and required attendance at one UI REACH course.

EDTL:4969 Diversity, Career Exploration, and Transition II 1-3 s.h.
Hands-on, interactive experience to learn what is involved in working with young adult students with multiple learning and cognitive disabilities, and assist them with transitioning into the workplace; three whole-group classroom sessions and required attendance in one of two REACH courses (internship prep or job search strategies).

EDTL:4982 Instructional Decision Making in Education 3 s.h.
Overview of and practical application with curriculum-based procedures for assessment and evaluation; classroom-based measures to make educational decisions for instruction of students, particularly those experiencing academic difficulty.

EDTL:4983 Academic and Behavioral Strategies for Students with Learning Disabilities and Behavioral Disorders 3 s.h.
Merge theory and practices for assessing, planning interventions, delivering instruction, and monitoring progress for individuals who have learning disabilities and emotional/behavioral disorders.

EDTL:4984 Academic Skills for Students with Special Needs 3 s.h.
Introduction to appropriate methodology for teaching academic skills to students with significant learning difficulties; how to teach students effectively regardless of the label that might be applied to them or the setting to which they might be assigned; effective application of classroom-based measurement, curriculum development, and instructional strategies for teaching academic skills to education students with special needs.

EDTL:4987 Introduction to Assistive Technology 3 s.h.
How assistive technology can be used for attainment of goals in education or work. Same as RCE:4187.

EDTL:4990 Interdisciplinary Issues in Disabilities 1-3 s.h.
Critical issues related to interdisciplinary delivery of services to persons with developmental disabilities; observation and participation in staffing and consultation; opportunity for related community experiences.

EDTL:5961 Foundation of Applied Behavior Analysis 3 s.h.
Foundation knowledge and basic principles of behavior analysis in philosophical assumptions of behavior analysis, behavioral terminologies, verbal operants, and measurement concepts; first in a four-course sequence to prepare Chinese-speaking students to sit for the Board Certified Assistant Behavior Analyst (BCaBA) certification exam sponsored by the Behavior Analyst Certification Board (BACB). Corequisites: EDTL:7953.

EDTL:5962 Function of Behaviors and Interventions 4 s.h.
Functional assessment/analysis and interventions designed to change behaviors; describing and implementing components of functional behavioral assessment; using results of a functional assessment to develop a program to teach appropriate behavior and/or decrease inappropriate behaviors; development of an instructional program to teach desired behaviors; third in a four-course sequence to prepare Chinese-speaking students to sit for the Board Certified Assistant Behavior Analyst (BCaBA) certification exam sponsored by the Behavior Analyst Certification Board (BACB). Prerequisites: EDTL:5961 and EDTL:7953.

EDTL:5963 Ethics and Professional Conduct of Behavior Analysts 2 s.h.
Issues related to ethical and professional conduct of behavior analysts when working with clients according to BACB Professional Disciplinary and Ethical Standards and Guidelines for Responsible Conduct for Behavior Analysts; responsible conduct of a behavior analyst, behavior analyst's responsibility to client, assessing behavior, behavior analyst and individual behavior change program; fourth in a four-course sequence to prepare Chinese-speaking students to sit for the Board Certified Assistant Behavior Analyst (BCaBA) certification exam sponsored by the Behavior Analyst Certification Board (BACB). Prerequisites: EDTL:5961 and EDTL:5962 and EDTL:7953.

EDTL:5964 Behavior Analyst Practicum 1-4 s.h.
Development, implementation, and evaluation of techniques that produce behavior changes in clients; discussion of key issues related to techniques of applied behavior analysis; review of various theoretical, conceptual, historical, legal, and practical aspects of behavior analysis; provides a portion of the supervisory component as required by the Behavior Analyst Certification Board (BACB).

For students enrolled in graduate student teaching practicum. Requirements: special education major.

EDTL:6936 Administration of Students with Special Needs 3 s.h.
Foundation for and skill practice in tasks performed by directors of special education and others administering to needs of special education students, and economically and socially deprived students; for prospective school administrative personnel. Same as EPLS:6236.

EDTL:6950 Strategist I Student Teaching: Elementary 2 s.h.
Student teaching in an elementary mild and moderate special education program.

EDTL:6951 Strategist I Student Teaching: Secondary 2 s.h.
Student teaching in a secondary mild and moderate special education program.

EDTL:6953 Strategist II Student Teaching: Elementary arr.
Student teaching in K-8 learning disabilities or behavior disorders.

EDTL:6954 Strategist II Student Teaching: Secondary arr.
Student teaching in secondary learning disabilities or behavior disorders.

EDTL:6975 Explicit Instruction 3 s.h.
Empirically supported methods for teaching reading and mathematics K-12 to students with mild-moderate disabilities; assessment and curricular adaptations to individual needs.

EDTL:7932 Field Service Project in Special Education Internship arr.
Part-time or full-time experience as an intern in school districts or area education agencies; develops skills in supervision and administration of special education.

EDTL:7943 Proseminar: Issues, Trends, and Research in Special Education 2-3 s.h.
Conceptual and practical development of research across special education and related disciplines; empirical review of the literature; focus on professional writing skills.

EDTL:7944 Proseminar: Issues, Trends, and Research in Special Education II 2-3 s.h.
Recent research from a variety of special education areas reviewed by students; simulated comprehensive examinations. Prerequisites: EDTL:7943.

EDTL:7945 Current Issues and Trends in Learning Disabilities 3 s.h.
Readings and discussions of current issues and trends in learning disabilities (e.g., definition, prevalence, interventions, subtyping, assessment).

EDTL:7948 Contemporary Research in Behavioral Disorders 3 s.h.
In-depth analysis of current research in behavioral disorders; emphasis on evaluating its methodology and contribution to the field.
EDTL:7952 Seminar: Behavioral Assessment and Evaluation
3 s.h.
Broadens skills of graduate students who engage in research with exceptional persons; research designs are usually taught in the Department of Psychological and Quantitative Foundations, but because of the nature of handicapping conditions and the low incidence of some handicaps, the single-subject design yields better research information. Same as PSQF:7352.

EDTL:7953 Seminar: Single Subject Design Research
3 s.h.
Reviews of single subject research, development of student proposals; focus on special education, applied research.
UI REACH

Director

• Pamela Ries (Teaching and Learning)

Faculty: http://www.education.uiowa.edu/services/reach/faculty-staff
Web site: http://www.education.uiowa.edu/services/reach/

Postsecondary Program of Study

UI REACH (Realizing Educational and Career Hopes) is a two-year transition certificate program at the University of Iowa for students with multiple intellectual, cognitive, and learning disabilities. UI REACH provides a campus experience that empowers young adults to become independent, engaged members of the community. Courses, campus life, and career preparation assist students to reach their full potential. UI REACH strives to maintain periodic contact with alumni to encourage them to become independent adults by utilizing the independent living and career-related skills they acquired in the program.

UI REACH offers courses on academic skill building, career preparation, student and community life skills, and socialization. Courses are taught by College of Education instructors.

UI REACH students live in a University of Iowa residence hall, where they receive support from specially trained undergraduate resident assistants. A fully inclusive college environment provides students with age-appropriate community opportunities and interactions with other University of Iowa students.

A limited number of UI REACH alumni may be selected to participate in the program’s third-year option. Participation during the third year involves full-time course work; emphasis is on additional courses and internships that promote self-sufficiency, independent living, and self-determination.

For more information, visit the UI REACH web site.

Courses

REA:0001 Academic Success 2 s.h.
Tools that help students succeed in academic courses; basic organization, efficient note taking, study and test-taking skills; participation in activities that increase awareness of classroom dynamics; solutions for test anxiety; ways to approach diverse learning experiences; how class content relates to study hall and residential facilities; seminar.

REA:0010 Social Skills I 2 s.h.
Basic interpersonal skills needed to succeed in academic, social, and employment environments; structured learning process for gaining discrete social skills necessary to initiate and maintain conversations in a variety of settings; awareness of feelings and cues in conversation to respond appropriately and have successful reciprocal interactions; lectures, modeling, role play, and practice in the community.

REA:0020 Computers and Technology I 2 s.h.
Training in computer literacy and practical skills for computer use in everyday life; computer parts and functions, the Windows operating system, computer applications; use of the personal computer to improve personal, academic and workplace productivity; group discussion, demonstrations, and multimedia experience support diverse learning styles.

REA:0021 Computers and Technology II 2 s.h.
Builds on REA:0020; fundamental computer competencies and strategies to simplify everyday life and enhance workplace performance; opportunity to improve practical skills for the workplace, communication with others, and daily life; tools for improving personal organization and communication and for meeting academic, entertainment, and workplace needs; group discussion, demonstration, independent exploration, and a multimedia experience support diverse learning styles.

REA:0030 Health and Wellness I--Exploration 2 s.h.
Importance of health and wellness, personal relationships, sexuality and making healthy choices; overview of health and wellness topics college students face—nutrition, substance use, risky behaviors, personal relationships, sexual health, mental health.

REA:0031 Health and Wellness II--Healthy Lifestyles 2 s.h.
Health and wellness personalized for students; help in assessing individual health and wellness decisions and behaviors to improve current and long-term health and wellness; small group discussion, individual assessments, real-life exploration, interactions with health educators, one-on-one student support; second in a series.

REA:0040 Personal Finance and Math I 2 s.h.
Understanding of numbers, operations, and managing personal finances; computation strategies, problem-solving strategies, skills for good consumers; opportunity to practice math skills in the community and the workplace; first in a series.

REA:0041 Personal Finance and Math II 2 s.h.
Skills and knowledge needed for managing personal finances; banking, budgeting, insurance, how to be a good consumer; students plan for their financial future by studying paycheck information, actual income, and tax responsibility; research on independent living costs; second in a series.

REA:0050 Lifetime Reading and Writing 2 s.h.
Enhancement of leisure reading; library visit to discover interesting genres, activities to review books, discussion of components (e.g., plot, characters); techniques of good readers; writing tools for success in daily living; writing forms including short organizational forms (e.g., to-do lists, grocery lists), family correspondence, business letters; observation and demonstration of writing techniques; use of writing as a form of self-expression, organization, and communication with others.
REA:0051 Practical Writing 1 s.h.
Writing tools for success in daily living; experience with a range of writing forms, beginning with short organizational forms such as to-do and grocery lists and progressing to family correspondence and business letters; observation and demonstration of writing techniques in group activities; help with self-expression in written formats, with focus on organization and communication with others; students practice writing techniques in class, in their residence halls, and in the community; seminar.

REA:0060 Tools for Life I: Critical Thinking and Decision Making 1 s.h.
Introduction to strategies, key elements, and resources for critical thinking; problem-solving and critical-thinking strategies and skills for responsible, independent decision making in personal, university, career, and community contexts; small-group discussion, case studies, role-playing, and applied practice in real-world situations related to daily, personal, academic, and career decisions.

REA:0061 Tools for Life II: Problem Solving 1 s.h.
Introduction to strategies and methods of problem solving; evaluation of scenarios from academic, social, and work environments; discussion of students' personal and current experiences; focus on development of interpersonal communication skills, relationship building, independence, career selection.

REA:0062 Social Skills II 2 s.h.
Continuation of REA:0010; more advanced relationship skills that require self-regulation; self-awareness; applying skills for communicating under stress; structured learning process including repetitive practice and modeling as key components.

REA:0070 Life Skills I--Transitions 2 s.h.
Components of successful independent and community living; personal safety issues, effective communication skills for interacting with peers and college personnel, how to access broad community resources for living, work, and leisure; students develop a plan for personal daily routines; classroom activities, practical experiences on campus and in the community.

REA:0071 Life Skills II--Community Life 2 s.h.
Review of previously learned skills for making the transition to independent living in the college environment; use of a personal planner for managing daily routines and schedules, planning for independent living after graduation; classroom activities, practical experiences on campus and in the community.

REA:0072 Life Skills III--On Your Own 2 s.h.
Goal setting and planning for independent living after college; how to use daily living skills from college in students' planned home communities; skills required for finding and managing a home or apartment, using community resources and agencies, and meeting basic needs; how to be interdependent and independent in the community.

REA:0073 Life Skills IV--Transition Planning 2 s.h.
Work on transition plan during spring semester of final year—goal setting and planning for independent living after college; how to use daily living skills from college in students' planned home communities; using community resources and agencies; meeting basic needs; how to be interdependent and independent in student's home community; identification of transition team members; plan and lead transition meeting.

REA:0074 Household Management II 3 s.h.
Continuation of REA:0075; preparation for independent apartment living; experiential training, assessment to determine support needs; apartment living, personal care, value shopping and budgeting, preparing meals, successful community living.

REA:0075 Household Management I 3 s.h.
Independent living skills introduced in the life skills and health and wellness courses; hands-on experience in room care, clothing care, food/kitchen safety, meal planning and nutrition, food preparation, simple recipes, grocery shopping, event planning.

REA:0076 Community Leisure and Advocacy 1 s.h.
Utilizing community resources while promoting self-advocacy and leadership; student support for transitioning from a university setting to community living; exploration of community resources related to recreation, entertainment, and independent living using multiple media sources for information gathering; field trips to investigate local resources; research related resources within students' home communities. Requirements: enrollment in UI REACH Program.

REA:0078 Historical Documentary Making 2 s.h.
History of disabilities (learning and physical disabilities); ground work for making a historical documentary; desktop documentary software used by student teams to produce documentaries on history of disability rights movement. Requirements: enrollment in REACH program.

REA:0079 Service Learning 2 s.h.
Classroom-based learning combined with community service; available resources and ways to better a community; assessment of community needs, research volunteer organizations, service-learning opportunities within the community.

REA:0080 Exploring Issues in Society 1 s.h.
Diversity and social justice issues; some social implications of being a person with a disability (e.g., negative treatment from others due to stigma, ignorance, stereotypes); guidance toward empowerment in self-advocacy at work, at school, and in community life; overview of cognitive and learning disabilities, Americans with Disabilities Act and other legislation that promotes equality, history of the disability rights movement, current social trends affecting people with disabilities; perspectives from America's history of social, cultural, and religious unity, celebration, and conflict.
REA:0081 Personal Leadership 1 s.h.
Builds on concepts learned in REA:0080; self-advocacy and awareness of individual strengths as empowerment for leadership roles in the community; qualities of a leader, value of mentors, importance of community service; elements of work-life balance; opportunities to participate in life-long service learning and leadership.

REA:0090 Current Events 1 s.h.
Forum to increase knowledge and ability to comment on current events; voting and political process, civic responsibilities in the local and federal elections process, how students can participate; use of various forms of media (i.e., print, broadcast, Internet) to develop critical thinking skills related to awareness of current events and their impact; personal safety issues; effective communication skills for interacting with peers and college personnel.

REA:0091 Psychology 1 s.h.
Basic concepts of psychology, with focus on daily life and understanding behavior; situations encountered as persons with an intellectual disability; differences between a psychologist, psychiatrist, and counselor; role of professionals; individual differences and social influences on behavior; introduction to scientific method, conducting basic experiments.

REA:0094 Introduction to Spanish: Language and Culture 2 s.h.
Introduction to Spanish language and culture; emphasis on basic conversational phrases, functional vocabulary, and cultural awareness; diversity of 21st-century Spanish-speaking world.

REA:0100 Career Exploration 4 s.h.
Opportunity to explore, enhance, or broaden work interests, skills, and potential career opportunities; interest inventories, review of vocational experiences, interactive employer presentations, informational interviews, job site experiences; focus on self-assessment of one's individual vocational strengths.

REA:0101 Job Search Strategies 2 s.h.
Fundamental tools and techniques for getting a job; students create a résumé, including references and updated work history; interview techniques, information gathering, thank-you letters, work-related vocabulary, appropriate behaviors and attitudes for a successful job search; role playing, demonstrations, real-world practice.

REA:0102 Entrepreneurism 2 s.h.
Characteristics, advantages, and disadvantages of self-employment; legal aspects of forming a business, marketing, acquiring start-up funding and other resources; financial obligations and monitoring of funds required for a successful business; students write a business plan.

REA:0103 Job Search Strategies II 2 s.h.
Continuation of REA:0101; update résumés, references, and cover pages; appropriate behaviors and attitudes for successful job search; seek and apply for jobs with assistance from instructor.

REA:0200 Business Support Seminar 1 s.h.
Aspects of careers in business support; office procedures, word processing skills, oral and written communication, records management, business terminology.

REA:0201 Creative Arts Seminar 2 s.h.
Aspects of careers in creative arts; availability of employment, professional association memberships, vocabulary used in the creative arts work environment.

REA:0202 Education Career Seminar 1 s.h.
Aspects of careers in education; additional training typically required for careers in education, child/student needs, lesson planning.

REA:0203 Health Services Seminar 1 s.h.
Aspects of careers in health services; office procedures and equipment, customer service skills, terminology used in health care environments.

REA:0204 Hospitality Seminar 1 s.h.
Aspects of careers in hospitality; customer service skills, phone and counter etiquette, vocabulary used in the hospitality industry.

REA:0205 Human Services Seminar 1 s.h.
Aspects of careers in human services; types of human services environments, interpersonal relationships and boundaries, paperwork requirements, terminology commonly used in human services environments.

REA:0207 Marketing/Sales Seminar 1 s.h.
Aspects of careers in marketing and sales; customer service skills, use of retail equipment, marketing techniques and the importance of product appearance, pricing and advertising, vocabulary used in a retail sales environment.

REA:0208 Parks and Natural Resources Seminar 1 s.h.
Aspects of careers in parks and natural resources management; operation and maintenance of equipment, safety procedures, customer service skills, typical vocabulary for positions involving care and management of shrubs, trees, flowers, and turf.

REA:0209 Skilled Trades Seminar 1 s.h.
Aspects of careers in the skilled trades; occupational skill standards in specific skilled trades, apprenticeships or advanced training required, safety in the workplace, vocabulary typical for specific skilled-trade work environments.

REA:0210 Information/Technology Seminar 1 s.h.
Aspects of careers in information technology; occupational skill requirements and standards, knowledge of typical equipment employees must operate, safety in the workplace, typical vocabulary for information technology work environments.

REA:0211 Culinary Arts Seminar 2 s.h.
Different types of careers in the food industry; workplace skills and tasks; continuing training and education options; equipment and food safety; basic preparation steps, food presentation, place settings; field trips. Requirements: enrollment in REACH program.
REA:0212 Community College Prep Seminar
Preparation to continue education at a community college after UI REACH; application and admission testing requirements, how to access the services offered at Student Disability Services; exploration of associate degree and certificate; area of study requirements and courses offered.

REA:0250 Academics and Life Skills Exploration I
Expand basic academic and/or life skills with discovery, experiential learning, progress monitoring, and self-reflection; focus on strengthening foundational skills in practical academics and life skills; first of a two-part series.

REA:0251 Academics and Life Skills Exploration II
Builds on basic academic and/or life skills explored in REA:0250; UI REACH instructors and university faculty work together to enhance learning opportunities while providing explicit, interactive learning opportunities; progress monitoring, reflection, and focus on maintenance of basic academic and life skills; second of a two-part series.

REA:0252 Academics and Life Skills Enrichment I
Broaden and diversify academic and student life experiences; address specific interest areas of students; focus on communication, relationships, academics, and independent life; individualize, extend, and provide depth to student's current level of knowledge and skills.

REA:0253 Academics and Life Skills Enrichment II
Builds on extended and diversified learning opportunities provided in REA:0252; transfer of skills and knowledge to new situations and environments encountered as students transition to workplace and home communities.

REA:0254 Social Skills for Work
Learning opportunities to develop appropriate social skills in the workplace.

REA:0300 Internship I—Prep
Introduction to functional skills, job expectations, environments of the workplace; students venture out into the community and see first-hand what a specific career or job entails; role of the influencer; small groups, job shadowing, tryouts—depending on individual needs and abilities; create a résumé; summer job searching skills; preparation for Internship II—applications, interviews, contacting employers.

REA:0301 Internship II
Internship experience leading to increased independence in the workplace (e.g., more independent operation of equipment, socialization, workplace safety, problem solving, conflict management); opportunity to acquire additional workplace skills in the student’s career emphasis area; employers and mentors guide students in fulfilling their job responsibilities; students maintain a journal and discuss their experience with their advisor or instructor; second of three consecutive internships.

REA:0302 Internship III
Internship experience with opportunities to develop more advanced skills for independent communication, problem solving, and workplace performance in the student's career emphasis area; employers and mentors observe the student in the workplace; students maintain a journal and discuss their experience with their advisor or instructor; third of three consecutive internships.

REA:0303 Internship IV
Individualized community work experiences with periodic classroom seminars; building independent work skills, such as researching bus routes and e-mailing weekly journals; students, instructors, and employers evaluate student's work performance.

REA:0304 Internship V
Continuation of REA:0303; community work experiences with periodic classroom seminars; emphasis on work skills in student's career area of choice; soft skills needed to be an independent worker.

REA:0305 Advanced Internship
Development of advanced workplace skills in time management, communication, problem solving, and performance; one or more internships individualized to meet needs for further workplace soft skill development; observation in workplace by instructors, employers and mentors; journaling and discussion of experience with UI REACH staff; tracking time via method that works for individual needs; internship experiences and classroom seminars; emphasis on work skills in any career area and soft skills needed to be an independent worker. Requirements: UI REACH fourth year enrollment.

REA:0325 Computer and Technology Literacy I
Self-paced course to improve personal, academic, and career computer literacy and skills; online learning modules and computer-based programs to increase computer skills; email and Internet searching, online learning options, online banking and purchasing, Microsoft Office programs, and online career resources.

REA:0326 Computer and Technology Literacy II
Self-paced course builds on skills learned in REA:0325; extends and provides depth to student's current level of skill; course work focuses on enhancing personal, academic, and career computer literacy; group discussion, demonstration, independent exploration, and practice to further develop computer skills; email, online career resources, Google Drive, social networking, and budgeting.

REA:0327 Social Networking
Management of student's social network space; instruction and practice to increase access to people online while encouraging safe practices in social media communication; types of personal information that should not be revealed online; risks of meeting strangers online; constructing online personal space by engaging in use of appropriate messages, photos, and privacy settings.
REA:0400 Independent Study arr.
Independent study coordinated with the student's UI REACH advisor.

REA:0501 Special Topics arr.
Topics include leisure resources, current events, science, family life, consumerism, community involvement, self-determination, self-advocacy, leadership, assistive technology, mentoring; course assignments, instruction, and student assessment in classroom and/or community settings; may be required or elective course.
College of Engineering

Dean
• Alec B. Scranton

Associate dean, research and graduate studies
• Milan Sonka

Associate dean, academic programs
• Keri C. Hornbuckle

Associate dean, diversity and outreach
• Tonya L. Peeples

Director, Center for Bioinformatics and Computational Biology
• Tom Casavant

Director, Center for Computer-Aided Design
• Karim Abdel-Malek

Director, Iowa Institute for Biomedical Imaging
• Milan Sonka

Director, IIHR—Hydroscience and Engineering
• Larry Weber

Undergraduate major: B.S.E.
Undergraduate certificates: technological entrepreneurship; wind energy
Graduate degrees: M.S.; Ph.D.
Web site: http://www.engineering.uiowa.edu/

Engineering is defined by the Accreditation Board for Engineering and Technology as that profession in which knowledge of the mathematical and natural sciences gained by study, experience, and practice is applied with judgment to develop ways to use, economically, the materials and forces of nature for the benefit of mankind.

In short, engineering is the application of science and mathematics to solve problems for society.

The major aim of engineering is the creation of a new process, product, material, or system. This activity demands a high degree of creativity and problem solving ability coupled with a full understanding of engineering fundamentals, good judgment, and a practical sense of economics.

The College of Engineering prepares men and women for one or more of the many career opportunities in the engineering profession. Such opportunities include positions in design, production, development, research, management, and consulting. Engineers are employed in industrial organizations, governmental agencies, and private practice.

The College of Engineering’s mission is to develop, disseminate, transfer, and preserve technical knowledge that improves people’s lives. The college endeavors to:
• provide a well-rounded and superior engineering education that draws upon resources of a comprehensive research university to attract outstanding undergraduate and graduate students in selected engineering fields;
• conduct high-quality research in selected areas, enabling faculty members and students to keep pace with new developments and ensuring that the newest concepts are taught in its courses; and
• serve the needs of the University, industry, government, and the general populace by making its facilities and faculty expertise accessible.

COLLEGE ORGANIZATION
The College of Engineering has five departments and four research units. The Department of Biomedical Engineering, Department of Chemical and Biochemical Engineering, Department of Civil and Environmental Engineering, Department of Electrical and Computer Engineering, and Department of Mechanical and Industrial Engineering offer a total of six undergraduate programs of study and many graduate programs of study.

The research units are the Center for Bioinformatics and Computational Biology, the Center for Computer-Aided Design, the Iowa Institute for Biomedical Imaging, and IIHR—Hydroscience and Engineering.

DIVERSITY AND INCLUSION IN THE COLLEGE OF ENGINEERING
The College of Engineering is committed to developing an inclusive community of learning and scholarship with the sustainable support systems that enable participants of all ages (pre-K-12, college, graduate students, staff, and faculty) to succeed. This welcoming extends beyond the college to the wider University of Iowa community and to national venues. Inclusion efforts are led by the Outreach, Admissions, Scholarship and Inclusion Services (OASIS) team. Diversity programs offered by the Ethnic Inclusion Effort for Iowa engineering (eI2) and by Women in Science and Engineering (WiSE) help to nourish the college community. Project Lead the Way (PLTW) and FIRST Tech Challenge (FTC), as well as general pre-engineering summer camps, engage K-12 students and teachers in the Midwest expanding inclusion practices to broaden participation of underrepresented groups in science and engineering disciplines. These programs enjoy the support from several international engineering and manufacturing firms, federal agencies, and private foundations. The associate dean for diversity and outreach manages these efforts and further serves to increase recruitment and retention of diverse undergraduate and graduate students, faculty, and staff within the college.

Undergraduate Programs of Study
The College of Engineering offers the Bachelor of Science in Engineering (B.S.E.) with majors in biomedical engineering, chemical engineering, civil engineering, electrical engineering, industrial engineering, and mechanical engineering. All six B.S.E. programs of study are accredited by the Engineering Accreditation Commission of ABET. Each has its own set of articulated program educational objectives, and all are designed to ensure that graduates possess the following general attributes:
• ability to apply knowledge of mathematics, science, and engineering;
• ability to design and conduct experiments as well as to analyze and interpret data;
• ability to design a system, component, or process to meet desired needs;
• ability to function on multidisciplinary teams;
• ability to identify, formulate, and solve engineering problems;
• understanding of professional and ethical responsibility;
• ability to communicate effectively in oral, written, and graphical forms;
• a broad education necessary to understand the impact of engineering solutions in a global and societal context;
• recognition of the need to engage in lifelong learning and the ability to do so;
• knowledge of contemporary issues; and
• ability to use the techniques, skills, and modern engineering tools necessary for successful engineering practice.

The University of Iowa B.S.E. programs of study distinguish the College of Engineering from other engineering colleges in the region. They draw on the University’s recognized strengths to offer unique opportunities for students who wish to pursue a wide range of career options and an education that goes beyond technology.

See Bachelor of Science in Engineering (p. 841) in the Catalog for detailed information about the B.S.E., including requirements, admission, and academic rules and procedures. For information about each B.S.E. major, see the Catalog’s College of Engineering department sections: Biomedical Engineering (p. 851), Chemical and Biochemical Engineering (p. 861), Civil and Environmental Engineering (p. 871), Electrical and Computer Engineering (p. 884), and Mechanical and Industrial Engineering (p. 894).

The college also offers joint undergraduate degrees with the College of Liberal Arts and Sciences and the Tippie College of Business; a dual degree with the University of Northern Iowa; a joint bachelor’s/master’s degree program in each engineering discipline; and a joint bachelor’s/master’s degree with the School of Urban and Regional Planning. See "Joint and Dual Degrees" in the Bachelor of Science in Engineering (p. 841) section of the Catalog. In addition, the College of Engineering partners with the Tippie College of Business to offer the Certificate in Technological Entrepreneurship (p. 914) for undergraduate engineering students. The College of Engineering also teams with the College of Liberal Arts and Sciences to offer the Certificate in Wind Energy (p. 915), which is open to all University of Iowa undergraduates.

Graduate Programs of Study
The College of Engineering offers the Master of Science and Doctor of Philosophy in biomedical engineering, chemical and biochemical engineering, civil and environmental engineering, electrical and computer engineering, industrial engineering, and mechanical engineering. For information about principal research and study areas, degree requirements, admission, and financial support for individual graduate programs, see the Catalog’s College of Engineering department sections: Biomedical Engineering (p. 851), Chemical and Biochemical Engineering (p. 861), Civil and Environmental Engineering (p. 871), Electrical and Computer Engineering (p. 884), and Mechanical and Industrial Engineering (p. 894).

Diversity and Inclusion in Graduate Programs
Diversity programs have served to build and nourish the graduate community within the College of Engineering. The college is active in recruiting graduate students of diverse backgrounds and provides mentoring, networking, professional development, and financial support for many graduate students. The success in mentoring underrepresented students in engineering has been built on strong collaboration with other campus units and has been supported through private, state, and federal funding.

Signature programs within the College of Engineering which support graduate students include the Ethnic Inclusion Effort for Iowa Engineering and Women in Science and Engineering which provide opportunities for graduate professional development. In addition, the college is a diversity leader as a part of the University Center for Exemplary Mentoring, supported by the Alfred P. Sloan foundation, and as a member of The National GEM Consortium.

Applicants must meet the admission requirements of the Graduate College; see the Manual of Rules and Regulations of the Graduate College.

Professional Licensure
Licensure as a professional engineer is governed by the laws of each state. Most states’ minimum requirements include graduation from an accredited engineering curriculum of at least four years, followed by at least four years of practical experience and successful completion of two major examinations.

The agency that controls and monitors the licensing procedure in Iowa is the Iowa Engineering and Land Surveying Examining Board. The first step in the procedure for students enrolled in an accredited program is to pass an examination on engineering fundamentals given near the time of graduation. Following graduation and the successful completion of the engineering fundamentals exam, graduates receive an Engineer-in-Training (EIT) certificate. The final step in the procedure is to pass the principles and practice exam in a specialty area following a minimum of four years of approved professional experience. At this point, the graduate engineer becomes a licensed Professional Engineer.

Student Organizations
The College of Engineering student body is represented by the Engineering Student Council. The council plans and carries out activities involving the entire college. The organization also acts on collegewide matters of general student interest.

Several engineering professional societies have University of Iowa student chapters: American Institute of Chemical Engineers, American Society of Civil Engineers, American Society of Mechanical Engineers, Biomedical Engineering
Student Society, Institute of Electrical and Electronics Engineers, and Institute of Industrial Engineers.

The following student organizations are multidisciplinary and are open to all engineering students:

- the American Institute of Aeronautics and Astronautics is a professional organization affiliated with the field of aerospace engineering;
- the American Wind Energy Association focuses on career development, research, and advocacy for wind energy;
- the Engineering Sales Club helps engineering students develop the professional skills required for sales careers;
- Engineering World Health, Continental Crossings, U.S. Green Building Council, and Engineers Without Borders work to reduce poverty and improve global sustainability;
- the Human Factors and Ergonomics Society raises awareness of human factors issues;
- the Society of American Military Engineers promotes and facilitates engineering support for national security;
- the Society of Automotive Engineers is a professional and technical organization; and
- a local chapter of Theta Tau, a national professional engineering fraternity, is active in service to the college.

The University chapter of Tau Beta Pi, a national honorary society for students in all engineering fields, gives special recognition to superior students in their junior and senior years. The work of students who are outstanding in specific engineering disciplines is recognized by Alpha Eta Mu Beta (biomedical engineering), Omega Chi Epsilon (chemical engineering), Chi Epsilon (civil engineering), Eta Kappa Nu (electrical engineering), Alpha Pi Mu (industrial engineering), and Pi Tau Sigma (mechanical engineering).

Student organizations that support the enrollment of women and members of minority populations in the college include the Multi-Ethnic Engineering Student Association, the National Organization for the Professional Advancement of Black Chemists and Chemical Engineers, the National Society of Black Engineers, the Society of Hispanic Professional Engineers, the Society of Women Engineers, and Women in Science and Engineering.

For more information, visit Engineering Student Organizations on the college's web site.

Research Centers

The College of Engineering has four major research centers. College of Engineering researchers also collaborate with researchers from outside the college in several interdisciplinary research units.

College of Engineering Research Centers

CENTER FOR BIOINFORMATICS AND COMPUTATIONAL BIOLOGY

The Center for Bioinformatics and Computational Biology (CBCB) is a multidisciplinary research center dedicated to applying high performance networking and computing to basic life science and applied biomedical research. With faculty and students representing more than 20 traditional disciplines, the CBCB has contributed to the understanding of inherited human diseases, including blindness, heart disease, cancer, deafness, diabetes, autism, schizophrenia, hypertension, obesity, and heart disease. For almost 20 years, the CBCB has been at the cutting edge of high throughput molecular discovery and interpretation in transcriptomics, proteomics, and genomics. At the confluence of these efforts lies the current wavefront of personalized genomic medicine, to which the CBCB plays a central role in partnership with labs, centers, and institutes across the University's Carver College of Medicine and basic science programs across campus. The CBCB also has been a nexus for industry start-ups and partnerships with numerous commercial enterprises. The center is jointly sponsored by the College of Engineering and the Carver College of Medicine.

CENTER FOR COMPUTER-AIDED DESIGN

The Center for Computer-Aided Design (CCAD) conducts basic and applied research in six units: the Operator Performance Laboratory (research in human performance); the Virtual Soldier Research program (research in human modeling and simulation); the Cognitive Systems Laboratory (research in human factors in transportation and human computer interaction); the Reliability and Sensory Prognostic Systems program; the National Advanced Driving Simulator (research in human factors and simulation for ground transportation); the Musculoskeletal Imaging, Modeling, and Experimentation Program (computational modeling of anatomic structures); and Advanced Manufacturing Technology (design, modeling, and fabrication of tissue replacement parts, tissue scaffolds, medical devices, and cell and organ printing; testing of manufacturability, design effectiveness, virtual performance, and reliability of polychlorinated biphenyls—PCBs).

IOWA INSTITUTE FOR BIOMEDICAL IMAGING

The Iowa Institute for Biomedical Imaging (IIBI) conducts research in the following areas: medical imaging (CT, MR, OCT, PET, SPECT, ultrasound), medical image analysis and computer-aided diagnosis; cardiovascular image analysis (angiography-intravascular ultrasound data fusion, MR image analysis of congenital heart disease, coronary CT image analysis, early detection of cardiovascular disease); pulmonary image analysis (CT and MR image analysis of the lung); cell image analysis (cell tracking, shape analysis); and virtual surgery planning (augmented reality for liver resection surgery). The institute is sponsored jointly by the College of Engineering and the University's Carver College of Medicine.

IIHR—HYDROSCIENCE & ENGINEERING

IIHR—Hydroscience & Engineering is one of the nation's premier and oldest fluids research and engineering laboratories. Its activities include fluid dynamics (turbulent flows, vortex dynamics, ship hydrodynamics, biological fluid flow, atmospheric boundary layer, experimental and computational fluid dynamics); environmental hydraulics (hydraulics structures, river mechanics, hydraulic structures, ice mechanics, cold regions engineering, fisheries engineering, sediment management, heat disposal in water bodies and power productions, bioremediation of groundwater, computational hydraulics, water quality monitoring); and water and air resources (air pollution, hydroclimatology, hydrogeology, hydrology,
hydrometeorology, remote sensing, water resources and basin-scale processes).

Interdisciplinary Research Units

CENTER FOR BIOCATALYSIS AND BIOPROCESSING

The Center for Biocatalysis and Bioprocessing (CBB) concentrates on biocatalysis and bioprocessing education, research, and technology transfer. Its research includes fermentation; bioprocessing of small molecules, peptides, proteins and biocatalysis; pilot-scale technology transfer; structural biology of biocatalysts; biocatalyst screening and discovery; bioremediation; cloning of genes and optimization of protein expression in microorganisms; and GMP operations for producing clinical-grade biotherapeutics.

CENTER FOR GLOBAL AND REGIONAL ENVIRONMENTAL RESEARCH

The Center for Global and Regional Environmental Research (CGRER) is devoted to studying and bettering the environment. Its focus includes multiple aspects of global environmental change, including regional effects on nature ecosystems, environments, and resources on human health, culture, and social systems. The center helps Iowa's agencies, industries, and people prepare for accelerated environmental change.

CENTER FOR HEALTH EFFECTS OF ENVIRONMENTAL CONTAMINATION

The Center for Health Effects of Environmental Contamination (CHEEC) is a multidisciplinary environmental health research center dedicated to supporting and conducting research to identify, measure, and prevent adverse health outcomes related to exposure to environmental toxins, particularly water contaminants. The center also conducts educational programs on environmental health and works with environmental database design, development, and systems support for environmental health research.

CENTER FOR INTERNATIONAL RURAL AND ENVIRONMENTAL HEALTH

The Center for International Rural and Environmental Health (CIREH) promotes understanding and awareness of the causes, consequences, and prevention of communicable, chronic, environmental, and occupational diseases in all regions of the world. The center focuses its education, training, and research on nations with substantial agrarian economies.

ENVIRONMENTAL HEALTH SCIENCES RESEARCH CENTER

The Environmental Health Sciences Research Center (EHSSRC) researches the adverse health effects of environmental contaminants among rural and agricultural populations. The center is at the forefront of research on rural environmental health problems such as pesticide-induced cancers and birth defects, community and occupational exposures to airborne hazards from concentrated livestock operations, asthma among rural children, and remediation of rural hazardous waste sites. It also trains scientists to characterize mechanisms that underlie environmental disease and approaches to their prevention.

INJURY PREVENTION RESEARCH CENTER

The Injury Prevention Research Center (IPRC) is a multidisciplinary unit whose focus includes injury prevention, acute care, biomechanics, and surveillance activities. The center's current work involves examining different types of residential smoke detectors, using simulation technology to study driving safety among persons with sleep apnea and persons on antiseizure medication, using bicycling simulation to study risk taking in children, and studying the effect of interpersonal violence on women's health.

OPTICAL SCIENCE AND TECHNOLOGY CENTER

The Optical Science and Technology Center (OSTC) involves researchers from the College of Engineering and the College of Liberal Arts and Sciences. The center's objective is to catalyze research in the optical sciences by establishing an environment that promotes collaborative science and the development of innovative technology. Broad areas of interest include development of novel semiconductor materials with unique electronic and optical properties; design, fabrication, and characterization of nanostructures and nanomaterials; photopolymerization processes; exploration of environmental science; and application of novel optical devices in the biosciences.

ORTHOPAEDIC BIOMECHANICS LABORATORY

The Orthopaedic Biomechanics Laboratory researches trauma, carpal tunnel syndrome, and articular contact arthritis, osteonecrosis of the hip, high-energy limb trauma, carpal tunnel syndrome, and articular contact stresses as they relate to joint degeneration.

PHOTOPOLYMERIZATIONS CENTER

The Photopolymerizations Center (IUCRC) works to advance the fundamental understanding of the kinetics and mechanisms of photopolymerizations; to establish a venue for active discussions and collaborations among industrial and academic researchers; to explore high-risk, cutting-edge research on photopolymerization processes that could lead to technological innovations; and to promote and/or develop novel applications that exploit the unique set of advantages offered by photopolymerizations.

PUBLIC POLICY CENTER

The Public Policy Center (PPC) facilitates interdisciplinary academic research on policy related to health, human factors and vehicle safety, crime and justice, housing, the environment, and transportation. It works to provide policy makers with information they can use to help communities and individuals thrive in sustainable ways.

Facilities and Resources

Seamans Center for the Engineering Arts and Sciences

The Seamans Center for the Engineering Arts and Sciences is home to the College of Engineering. Dedicated in 2001, the Seamans Center combines new construction with extensive renovation of the former Engineering Building to provide space for learning, teaching, research, and
collaboration that anticipates the needs of 21st-century engineering.

The building's Student Commons and John Deere Plaza Lobby offer welcoming space for students to work individually or together on homework and projects. Both facilities provide wireless computer connections. Additional work rooms and conference areas join the Seams Center's expanded classrooms and flexible research space in an environment designed to serve the needs of the college's students, faculty, and staff.

All five of the college's departments have headquarters in the Seams Center, and most faculty offices are located there.

**Engineering Student Services**

The professional staff of Engineering Student Services administers student services for the College of Engineering, including admission, advising, tutoring, and student records and scholarship. It also is the administrative home of Engineering Professional Development and the Hanson Center for Technical Communication.

**Engineering Professional Development**

Engineering Professional Development (EPD) develops and promotes experiential education and professional opportunities for students in the College of Engineering. EPD's professional staff coordinates the College of Engineering's co-op and internship programs and opportunities for students to network with employers, including an engineering career fair each semester and other programming related to career development. EPD offers individual advising and class presentations on résumé and cover letter preparation and interviewing skills. It also provides instruction on finding professional engineering positions and networking as well as evaluating and negotiating job offers. EPD recruits employers and organizations interested in hiring engineering students, and it partners with the Pomerantz Career Center to facilitate on-campus interviewing.

**Global Engineering**

Global opportunities for students are becoming increasingly important, as it is very likely that, regardless of discipline, engineering graduates will interact with customers and colleagues across the globe.

Engineering students have numerous opportunities to study abroad. Choices abound in terms of location and duration of stay. There are multiple study abroad opportunities where students can immerse themselves in another culture while taking required engineering courses in English.

In addition to studying abroad, engineering students can volunteer abroad, conduct research in other countries, and complete global internships.

For global opportunities related to a specific major, visit International Programs.

**Lichtenberger Engineering Library**

The Lichtenberger Engineering Library is a branch of the University of Iowa Main Library and is a center of engineering college activity. Its collections include more than 140,000 volumes and electronic full-text access to over 5,000 engineering and scientific journals. It offers electronic access to primary engineering and scientific indexes and abstracts, and full-text access to standards and U.S. patents. The library also maintains a substantial collection of publications from major engineering societies and a collection of national and international standards.

Tools also are available for check out to students and faculty in order to allow for more hands-on projects and use in class assignments. Example tools include screwdrivers, scales, and light meters. The library provides 35 computer workstations with specialized software packages and a significant amount of study space for students. The study spaces allow for individual as well as group study. The library features individual study carrels, group tables, lounge chairs, a collaborative work station, and movable whiteboards. Library personnel are available to assist with specialized engineering-related reference and informational questions. Personnel also provide course- and topic-specific instructional programs to further critical thinking and life-long learning skills.

**Hanson Center for Technical Communication**

The Hanson Center for Technical Communication (HCTC) assists undergraduate engineering students develop and polish their communication skills. The center's director and assistant director supervise a staff of professional writing consultants and peer consultants.

HCTC writing consultants are professional instructors who work in teams to help engineering faculty members present and evaluate writing-intensive assignments. They also provide individual feedback and assessment of students' work throughout the writing process.

HCTC peer consultants are engineering students who have strong communication skills. Peer consultants conduct one-on-one tutoring sessions at the center, helping their fellow students develop skills for organization and audience analysis and for creating precise technical descriptions and persuasive, logical narratives.

**Engineering Computer Services**

Engineering Computer Services (ECS) provides information technology administration for curricular, administrative, and research computing at the College of Engineering. The college has three drop-in computer labs with 180 high-end Linux and Windows computer workstations, 24-seat and a 45-seat computer classrooms and labs, and a 250-seat virtual computer lab with graphics support that students can access on the Internet. Numerous public domain applications and commercial engineering applications support the full range of engineering classes. Software is upgraded annually, and hardware is upgraded every four years. The college's computer labs are open 24 hours a day, every day of the year.

**Engineering Electronics Shop**

The Engineering Electronics Shop (EES) is a full-service electronics facility that supports sales and service for the College of Engineering and the University. EES provides design, construction, repair, calibration, and preventive maintenance services for teaching and research laboratories and maintains more than 100,000 parts in stock. The shop has laser cutting and etching equipment and a fully functional printed circuit board production facility. EES also maintains a large set of rental lockers for students.
Engineering Machine Shop

The Engineering Machine Shop (EMS) is a full-service, light manufacturing facility that supports curricular, research, and operational needs of the College of Engineering and the University. EMS provides professional design and fabrication services and gives students, staff, and faculty controlled access to a variety of manufacturing equipment. The shop has its own six-seat computer instruction classroom, a high resolution 3-D scanner, and several high resolution 3-D printers. EMS also supports College of Engineering clubs with its projects support facility.

Course Numbering System

Each College of Engineering course is listed in the General Catalog section of the department that offers it; see the links under "Index: Academic Programs" at the top of this page. Core engineering courses are listed in the College of Engineering section; see "Core Engineering Courses" below. Engineering students may enroll in any course in the College of Engineering if they meet the course prerequisite and corequisite requirements.

Students who have not taken the University of Iowa prerequisite but who have earned credit in equivalent course work from another institution should consult the course instructor if they have questions concerning their preparation for the course. They must obtain the instructor's consent before registering for the course.

Undergraduates from other colleges must contact Engineering Student Services for policies and procedures. Consent for enrollment in an engineering course is based on space available as well as on whether a student has the mathematics, science, and engineering background considered necessary to undertake the course work.

Course numbers consist of an alphabetical prefix (up to four letters) and a four-digit numerical suffix separated by a colon. Each course's prefix corresponds to the academic program in the College of Engineering that offers the course, as follows.

- BME: biomedical engineering
- CBE: chemical and biochemical engineering
- CEE: civil and environmental engineering
- ECE: electrical and computer engineering
- IE: industrial engineering
- ME: mechanical engineering
- ENGR: core and Project Lead the Way

The four-digit numerical suffix identifies the course's level and type, according to the following guidelines.

- 0000–0999: noncredit courses and courses offered to nonmatriculated students.
- 1000–1999: introductory, elementary, and general education courses appropriate for first-year students and for other students with no special background; they require few or no prerequisites.
- 2000–2999: lower-level undergraduate courses usually taken by second-year students and sometimes by third-year students; they may build on materials from 1000–1999 prefix courses and may require prerequisites.
- 3000–3999: upper-level undergraduate courses such as courses for majors and courses that require prerequisites; although these courses are for undergraduates, graduate students earn graduate credit for courses at this level.
- 4000–4999: advanced upper-level undergraduate courses such as senior seminars, advanced independent study courses, or honors thesis work; although these courses are for undergraduates, graduate students earn graduate credit for courses at this level.
- 5000–5999: introductory or first-year graduate courses; although these are graduate courses, undergraduates may register for these courses without special permission, on the advice of their advisors.
- 6000–6999: lower-level and intermediate graduate courses; undergraduates must have special permission to register for these courses.
- 7000–7999: advanced graduate courses; undergraduates must have special permission to register for these courses.
- 8000–9999: courses for professional degree programs offered by the professional colleges.

Core Engineering Courses

Most College of Engineering courses are offered by the college's departments. They are listed and described in the departments' General Catalog sections; see the links under "Index: Academic Programs" at the top of this page.

The college's individual undergraduate programs and course requirements for each engineering major also are described in the Catalog's College of Engineering department sections. Each undergraduate program builds upon a core program (see Bachelor of Science in Engineering (p. 841) in the Catalog). The following core program courses are offered by the college. Not all core courses are required for each engineering major.

Core program courses are intended for College of Engineering students. Undergraduates in other disciplines who wish to register for core program courses should contact Engineering Student Services.

**ENGINEERING CORE**

**ENGR:1000 Engineering Success for First-Year Students**

1 s.h.

Introduction to engineering student life; electronic resources; keys to and skills for success; coping with adversity; selecting a major; advising; curriculum choices and career objectives; ethics; communication; internships and co-ops; job search skills. Requirements: first-semester standing.

**ENGR:1100 Engineering Problem Solving I**

3 s.h.

Development and demonstration of specific problem solving skills; directed project or case study involving actual engineering problems and their solutions.
ENGR:1300 Engineering Problem Solving II  3 s.h.
Engineering problem solving using computers; introduction to digital computations, problem formulation using a procedural high-level language; structured, top-down program design methodology; debugging and testing; introduction to use of software libraries; examples from numerical analysis and contemporary applications in engineering. Corequisites: MATH:1550.

ENGR:2110 Engineering Fundamentals I: Statics  2-3 s.h.
Vector algebra, forces, couples, moments, resultants of force couple systems; friction, equilibrium analysis of particles and finite bodies, centroids; applications. Prerequisites: MATH:1550. Corequisites: MATH:1560 and PHYS:1611.

ENGR:2120 Engineering Fundamentals II: Electrical Circuits  3 s.h.
Kirchhoff's laws and network theorems; analysis of DC circuits; first order transient response; sinusoidal steady-state analysis; elementary principles of circuit design; SPICE analysis of DC, AC, and transient circuits. Corequisites: MATH:2560.

ENGR:2130 Engineering Fundamentals III: Thermodynamics  3 s.h.
Basic elements of classical thermodynamics, including first and second laws, properties of pure materials, ideal gas law, reversibility and irreversibility, and Carnot cycle; control volume analysis of closed simple systems and open systems at steady state; engineering applications, including cycles; psychrometrics. Prerequisites: CHEM:1110 and PHYS:1611. Corequisites: MATH:1560.

CROSS DISCIPLINARY CORE

ENGR:0000 Cooperative Education Training Assignment: Engineering  0 s.h.
For engineering majors participating in the Cooperative Education and Internship Program.

ENGR:0002 Half-time Co-op Ed Training Assign Engineering  0 s.h.
Registration for work assignment periods; for students participating in the Cooperative Education Program.

ENGR:0004 Academic Co-op Ed Training Assign Engineering  arr.
Academic credit for full-time co-op/internship employment in the College of Engineering. Requirements: for international students — F-1 or J-1 visa, engineering undergraduate standing, minimum 3.50 g.p.a., full-time internship offer letter in hand (at least 40 hours/week and one semester in length). Internship approved by International Student and Scholar Services for F-1 Curricular Practical Training (CPT) or J-1 Academic Training (AT), concurrent registration in approved 3 s.h. distance education or evening course, and preapproval of internship by Engineering Professional Development; non-international students may be eligible on case-by-case basis.

ENGR:1029 First-Year Seminar  arr.
Introduction to engineering fields of study; work closely with a faculty member or senior administrator; participation that eases the transition to college-level learning; cutting-edge research taking place in the College of Engineering.

ENGR:1500 Robots and Society: The Second Machine Age  2 s.h.
Impact of second machine age (the digital age) including its immense bounty and access to cultural items that enrich lives; identification of best strategies for thriving in a changing world; first machine age—known as the Industrial Revolution (1760-1840)—that resulted in a major change from hand production to using machines for production; fundamental characteristics of second machine age; invention of digital technology with machines everywhere; economic consequences, methods of intervention, effective implementation to allow people and communities to thrive.

ENGR:2013 Introduction to Sustainability  arr.
Introduction to sustainability knowledge, skills, and habits as a means to shape one vision of a sustainable citizen; emphasis on basic skills of literacy, applied math, and finding information; exploration of sustainability knowledge areas via increasing levels of democratic dialoguing and attention to increasing larger system sizes; traditional sustainability knowledge areas related to society, economy, and environment; intersecting themes (e.g., informed consumerism, eco-economics, livable environments).

ENGR:2510 Fluid Mechanics  4 s.h.
Fluid properties; hydrostatics; transfer of mass, momentum, and energy in control-volume and differential forms; dimensional analysis and similitude; laminar and turbulent flow in conduits; flow past bluff bodies and airfoils; engineering applications; experimental laboratories, computer simulation projects. Prerequisites: ENGR:2710 and MATH:2560. Corequisites: ENGR:2130.

ENGR:2710 Dynamics  3 s.h.
Vector calculus, Newton's laws, 3-D motion of particles and multiparticle systems, 2-D motion of rigid bodies applications. Prerequisites: ENGR:2110 and MATH:1550.

ENGR:2720 Materials Science  3 s.h.
Concepts and examples of selection and applications of materials used by engineers; mechanical, electrical, and thermal properties that govern a material's suitability for particular applications; lectures supplemented by laboratory experiments. Prerequisites: CHEM:1110. Corequisites: MATH:1550.

ENGR:2730 Computers in Engineering  2-3 s.h.
Introduction to digital systems and engineering applications of microprocessor-based computers; C programming language; serial and parallel I/O; analog-to-digital and digital-to-analog conversion; system control using polling and interrupts; lab arranged. Prerequisites: ENGR:1300.

ENGR:2750 Mechanics of Deformable Bodies  3 s.h.
Elementary theory of deformable bodies, stress, strain; axial, transverse, bending, torsion, combined and buckling loads; deflection of beam. Prerequisites: ENGR:2110. Corequisites: MATH:2560.

**ENGR:2760 Design for Manufacturing** 3 s.h.  
Fundamentals of design, engineering graphics, and manufacturing processing; computer graphics using Pro/ENGINEER for CAD and CAM; typical industrial processes, including casting, welding, machining, forming; laboratory exercises and projects. Corequisites: ENGR:2720.

**ENGR:4000 Engineering Honors Seminar** 1 s.h.  
Completion of an approved project under the supervision of a faculty member. Requirements: engineering honors and junior or higher standing.

**ENGR:4001 Leadership Seminar:**  
Mediocrity is Not an Option 1 s.h.  
Skills needed to gain competitive edge in professional world with understanding that mediocrity is not an option; importance of developing a career plan, power of networking, significance of soft skills, value of mentoring; participation in series of discussions and activities; deeper insight of strengths and weaknesses, how to enhance skills that employers desire, and become effective leaders in workplace; presentation by retired chief operating officer of a leading aerospace company.

**ENGR:5100 Sustainability Explorations:**  
Costa Rica 1 s.h.  
Societal, economic, and environmental interactions as applied to informed consumerism, eco-economies, and livable environments in United States and Costa Rica; intensive spring break learning experience at the University of Georgia Costa Rica campus embedded in course curriculum; satisfies 1 s.h. of project work for University of Iowa sustainability certificate.

**ENGR:5101 Sustainability Explorations:**  
Brazil and Colombia 1 s.h.  
Societal, economic, and environmental interactions applied to informed consumerism, eco-economies, and livable environments in the United States and Brazil; intensive spring break learning experience at the Instituto Nacional de Pesquisas da Amazonia in Manaus embedded in course curriculum; satisfies 1 s.h. of project work for University of Iowa sustainability certificate.

**ENGR:5200 COE Fellows Seminar** 1 s.h.  
Aspects of professional development for academic research, including applications for graduate fellowships, types of student aid, stewardship of discretionary accounts, identifying and meeting milestones in the Ph.D. process, integrating into the research team, teaching in a variety of academic settings, writing research articles, developing a curriculum vitae, networking in professional organizations, preparing research presentations, critical thinking, creating inclusive laboratory and classroom environments, and the impact of engineering on sustainability.

**ENGR:7270 Engineering Ethics** 1 s.h.  
Introduction to practical issues associated with being a responsible scientist; topics in responsible conduct of research in engineering and the sciences using case studies, presentations, and discussions with visiting speakers; conforms to mandates set by the Office of the Vice President for Research and the Graduate College to train graduate students and postdoctoral scholars/fellows in responsible conduct of research. Requirements: first-year graduate standing in College of Engineering.

**ENGR:7604 Engineering Ethics for Post Docs** 0 s.h.  
Introduction to practical issues associated with being a responsible scientist; topics in responsible conduct of research in engineering and the sciences using case studies, presentations, and discussions with visiting speakers; conforms to mandates set by the Office of the Vice President for Research and the Graduate College to train graduate students and postdoctoral scholars/fellows in responsible conduct of research. Requirements: new postdoctoral research scholar/fellow in College of Engineering.

**Project Lead The Way**

Project Lead The Way (PLTW) is a four-year high school sequence taught in conjunction with traditional math and science courses. The program’s curriculum emphasizes critical thinking, creativity, innovation, and real-world problem solving. PLTW courses provide students with in-depth, hands-on knowledge of engineering and technology-based careers.

**ENGR:1430 Introduction to Engineering Design** 3 s.h.  
Problem-solving skills taught through a design-development process; use of solid-modeling computer design software to create, analyze, and communicate models of product solutions. Requirements: Project Lead the Way high school student.

**ENGR:1431 Principles of Engineering** 3 s.h.  
Introduction to engineering and engineering technology; exploration of varied technology systems and manufacturing processes to show how engineers and technicians use math, science, and technology to solve engineering problems and help people; concerns about social and political consequences of technological change. Requirements: Project Lead the Way high school student.

**ENGR:1432 Digital Electronics** 3 s.h.  
Applied logic, with focus on application of electronic circuits and devices; use of computer simulation software to design and test digital circuitry before circuits and devices are built. Requirements: Project Lead the Way high school student.

**ENGR:1433 Computer Integrated Manufacturing** 3 s.h.  
Builds on computer solid modeling skills developed in ENGR:1430 on of robotics and automation principles; robotics in automated manufacturing, design analysis; students use CNC equipment to produce models of their 3-D designs. Requirements: Project Lead the Way high school student.
ENGR:1434 Civil Engineering and Architecture 3 s.h.
Overview of civil engineering and architecture; interrelationship and dependence of each field on the other; roles of civil engineers and architects, project planning, site planning, building design, project documentation and presentation; students use state-of-the-art software to solve real-world problems and provide solutions for projects and activities. Requirements: Project Lead the Way high school student.

ENGR:1435 Aerospace Engineering 3 s.h.
Experience applying scientific and engineering concepts to design materials and processes for aeronautics and flight; aerospace information systems, star sailing or astronautics rocketry, propulsion, physics of space science, space life sciences; habitat and crew systems with life support, biology of space science, principles of aeronautics, structures and materials, systems engineering. Requirements: Project Lead the Way high school student.

ENGR:1436 Biotechnical Engineering 3 s.h.
Experiences from the fields of biotechnology, bioengineering, biomedical engineering, and biomolecular engineering; biomechanics, cardiovascular engineering, genomics and biotechnology, tissue engineering, biomedical devices, human interface, bioprocess engineering, forensics, bioethics. Requirements: Project Lead the Way high school student.

ENGR:1437 Computer Science and Software Engineering (CSE) 3 s.h.
Implementation of the College Board’s 2013 Computer Science Principles framework; development of computational thinking, career paths that utilize computing, professional tools to foster creativity and collaboration; use of Python as a primary tool; incorporation of multiple platforms and languages for computation; development of programming expertise, exploration of Internet workings; projects and problems including app development, visualization of data, cybersecurity, robotics, simulation. Requirements: enrollment in Project Lead the Way program and consent of UI Project Lead the Way director.

ENGR:1440 Environmental Sustainability 3 s.h.
Investigation and design of solutions in response to real-world challenges related to clean and abundant drinking water, food supply issues, and renewable energy; application of knowledge through hands-on activities and simulations. Requirements: Project Lead the Way high school student.

ENGR:6431 Concepts of Physical Science and Principles of Engineering 5 s.h.
Understanding the field of engineering and engineering technology; technology systems and manufacturing processes explored to learn how engineers and technicians use math, science, and technology to solve engineering problems and benefit people; concerns about social and political consequences of technological change. Requirements: Project Lead the Way high school teacher.

ENGR:6433 Concepts in Physical Science with Computer Integrated Manufacturing Applications 5 s.h.
Introduction to high-tech, innovative nature of modern manufacturing; opportunities related to understanding manufacturing; manufacturing processes, product design, robotics, automation; students may earn a virtual manufacturing badge recognized by the National Manufacturing Badge system; proper paradigm for relating these concepts to secondary level students. Requirements: Project Lead the Way teacher.

ENGR:6434 Concepts of Physical Science with Civil Engineering Applications 5 s.h.
Civil engineering and architecture field experience; proper paradigm for relating concepts to secondary-level students, history of civil engineering, architectural design, surveying, cost and efficiency analysis, sustainable design, soil testing, site evaluation and layout. Requirements: Project Lead the Way high school teacher.

ENGR:6436 Concepts of Physical Science with Biotechnical Engineering Applications 3 s.h.
Experiences from biotechnology, bioengineering, biomedical engineering, and biomolecular engineering, and how to relate them to secondary students; biomechanics, cardiovascular engineering, genetic engineering, agricultural biotechnology, tissue engineering, biomedical devices, human interface, bioprocess engineering, forensics, bioethics. Requirements: Project Lead the Way high school teacher.

ENGR:6437 Concepts of Physical Science with Computer Engineering 5 s.h.
Field of computer science and software engineering; exploration of pedagogy to learn how engineers and technicians use math, science, and technology to solve engineering problems and benefit people; concerns about social and political consequences of technological change. Requirements: Project Lead the Way high school teacher.

ENGR:6438 Concepts of Physical Science with Medical Detectives Training 2 s.h.
Field of medical testing and forensics, exploration of pedagogy; how medical personnel use math, science, and technology to solve problems and benefit people; solving medical mysteries through hands-on projects and labs; how to measure and interpret vital signs; how systems of human body work together to maintain health. Requirements: Project Lead the Way high school or middle school teacher.

ENGR:6439 Concepts of Physical Science with Engineering Design and Development 5 s.h.
Experiences from engineering design and development fields; proper paradigm for relating concepts to secondary-level students; team work to design and develop an original solution to a technical problem by applying engineering design process; research to choose, validate, and justify a technical problem; teams design, build, and test solutions, then present and defend original solution to an outside panel; developed by Project Lead the Way.

ENGR:6440 Concepts in Physical Science with Environmental Sustainability Applications 1.5 s.h.
Investigation and design of solutions in response to real-world challenges related to clean and abundant drinking water, food supply issues, and renewable energy; proper paradigm for relating these concepts to secondary level students; application of knowledge through hands-on activities and simulations. Requirements: Project Lead the way teacher.

**ENGR:6450 Concepts in Physical Science with K-5 STEM Launch Applications**

Introduction to Project Lead the Way (PLTW) launch curriculum; 24 modules (K-5 grade level) that align to Common Core State Standards for math and English language arts, Next Generation Science Standards, and other national and state standards; 10-hour modules presented in pairs that combine to create a thematic unit; flexibility of teachers and schools to introduce modules that they want, when they want, and at the grade level they want; proper paradigm for relating these concepts to elementary (K-5) students, training other elementary teachers. Requirements: Project Lead the Way teacher.

**ENGR:6451 Concepts in Physical Science with Introduction to Computer Science**

Preparation for teaching beginning computer science course; creation of simple applications for mobile devices using MIT App Inventor; impact of computing on society, application of computing across career paths, skill building and awareness of digital citizenship and cybersecurity; transfer of programming skills gained in MIT App Inventor to text-based programming in Python to create strategy games; proper paradigm for relating these concepts to secondary students.

**Interdepartmental Degree**

Bachelor of Science in Engineering (p. 841)

**Departments**

Biomedical Engineering (p. 851)
Chemical and Biochemical Engineering (p. 861)
Civil and Environmental Engineering (p. 871)
Electrical and Computer Engineering (p. 884)
Mechanical and Industrial Engineering (p. 894)

**Certificate Programs**

Technological Entrepreneurship (p. 914)
Wind Energy (p. 915)
Bachelor of Science in Engineering

**Undergraduate major:** B.S.E.  
**Web site:** http://www.engineering.uiowa.edu/

**Undergraduate Program of Study**

- Bachelor of Science in Engineering

The College of Engineering offers the Bachelor of Science in Engineering (B.S.E.) with majors in biomedical engineering, chemical engineering, civil engineering, electrical engineering, industrial engineering, and mechanical engineering. The undergraduate majors are designed to attract the best and brightest students and prepare them to be engineers who will succeed in a workplace filled with diverse people, attitudes, and ideas; to compete in the global marketplace; to work effectively in multidisciplinary teams; and to confidently understand, use, and develop modern technology.

All six B.S.E. programs of study are accredited by the Engineering Accreditation Commission of ABET. Each has its own set of articulated program educational objectives, and all are designed to ensure that graduates possess the following general attributes:

- **ability to apply knowledge of mathematics, science, and engineering;**
- **ability to design and conduct experiments as well as to analyze and interpret data;**
- **ability to design a system, component, or process to meet desired needs;**
- **ability to function on multidisciplinary teams;**
- **ability to identify, formulate, and solve engineering problems;**
- **understanding of professional and ethical responsibility;**
- **ability to communicate effectively in oral, written, and graphical forms;**
- **a broad education necessary to understand the impact of engineering solutions in a global and societal context;**
- **recognition of the need to engage in lifelong learning and the ability to do so;**
- **knowledge of contemporary issues; and**
- **ability to use the techniques, skills, and modern engineering tools necessary for successful engineering practice.**

The University of Iowa B.S.E. programs of study distinguish the College of Engineering from other engineering colleges in the region. They draw on the University's recognized strengths to offer unique opportunities for students who wish to pursue a wide range of career options and an education that goes beyond technology.

Each program emphasizes a broad understanding of fundamental principles common to all engineering disciplines and provides students with the opportunity to specialize in a selected engineering discipline. All build on the University's research strengths. Program flexibility is provided by a curriculum in which each student develops engineering competency within a particular academic program and complements it with a tailored thematic option in support of chosen career objectives (e.g., engineering practice, project management, research and development).

This Catalog section provides information about requirements that all B.S.E. students must fulfill, regardless of their engineering major, as well as admission information and academic rules and procedures; see "Bachelor of Science in Engineering" below.

Engineering students may earn more than one B.S.E. degree. They also may earn joint undergraduate degrees in the College of Liberal Arts and Sciences or the Tippie College of Business, a joint B.S.E./master's degree in urban and regional planning, or a joint B.S.E./M.S. in engineering; see "Joint and Dual Degrees" later in this section.

The undergraduate Certificate in Technological Entrepreneurship (p. 914) is tailored specifically for engineering students who intend to start and operate their own businesses or who would like to understand and learn about managing innovation in business environments. The undergraduate Certificate in Wind Energy (p. 915) introduces students to a developing field that has a growing need for professionals with knowledge of wind energy fundamentals. The University offers a wealth of other certificates and minors in a wide range of disciplines that are open to all undergraduate students; see "Minors" and "Certificates" below.

**DIVERSITY AND INCLUSION IN THE COLLEGE OF ENGINEERING**

The College of Engineering strives to be a national leader in including women and men of all races and ethnic groups in its student body and providing a model for other institutions that are interested in strengthening inclusion of all peoples in engineering. The Ethnic Inclusion Effort for Iowa Engineering develops integrative programs and activities which serve to build and nourish the engineering community. This includes support of diversity programming and diversity in student organizations. Women in Science and Engineering (WISE) offers a variety of services for undergraduate students including the WISE Peer Mentoring Program and the Be-WISE Women in Science and Engineering Living-Learning Community (LLC). The Be-WISE-LLC is the University of Iowa's longest continuously running living-learning community that provides academic and social support programming, as well as a positive community of scholars, for women majoring in STEM fields. To learn more, see Diversity at the UI College of Engineering on the college's web site.

**Bachelor of Science in Engineering**

The Bachelor of Science in Engineering (B.S.E.) requires a minimum of 128 s.h. Students must be enrolled in the UI College of Engineering for the last 30 s.h. of work toward the degree, or 45 of the last 60 s.h., or a total of 90 s.h. They must have a g.p.a. of at least 2.00 on all college work used to satisfy degree requirements as well as on all work undertaken at the University of Iowa.

Engineering students earn the B.S.E. degree in one of six undergraduate programs of study (majors): biomedical engineering, chemical engineering, civil engineering, electrical engineering, industrial engineering, or mechanical engineering.

All students complete a core of common B.S.E. requirements, usually during their first three semesters;
see "Core Requirements" below. They also must complete a curriculum—a set of required and elective courses—designed specifically for their major program. The curriculum prepares students to practice engineering in that program's field of engineering. It is designed by the program's faculty members according to guidelines provided by the national accrediting body of ABET.

Each program's curriculum is divided into four major stems: mathematics and basic sciences; engineering topics; an elective focus area; and the general education component (humanities and social sciences). All of the courses in the curriculum stems are integrated and sequenced to help students understand the interrelationships and importance of each stem. See "Curriculum Stems" below.

Courses below the level of the beginning courses in each program's curriculum count toward students' overall grade-point averages and are recorded on their transcripts, but they do not count toward requirements for the B.S.E. degree.

**Core Requirements**

All B.S.E. students must complete a core of courses that constitute approximately one-third of the courses required for the degree. They complete most of the core during their first three semesters, so most students may postpone making a decision about which engineering major to pursue or may change their engineering major during their first three semesters with little or no loss of time or credit.

The core includes RHET:1030 Rhetoric, a first-year course in writing, speaking, and critical reading; ENGR:1100 Engineering Problem Solving I and ENGR:1300 Engineering Problem Solving II, which cover a breadth of topics from engineering as a profession to team design projects to engineering computations and computer programming; and courses in chemistry, engineering mathematics and fundamentals, and physics. Students must earn a grade of C-minus or higher in the core requirements MATH:1550 Engineering Mathematics I: Single Variable Calculus and MATH:1560 Engineering Mathematics II: Multivariable Calculus.

Students should complete the core requirements according to the following three-semester plan. Those who do not follow this plan may encounter a delay in graduation because of scheduling problems for courses that must be taken in a specific sequence or that are offered only once a year.

**First Semester**

All of these:

- ENGR:1000 Engineering Success for First-Year Students (all majors; credit does not count toward B.S.E. degree) 1 s.h.
- ENGR:1100 Engineering Problem Solving I (all majors) 3 s.h.
- CHEM:1110 Principles of Chemistry I (all majors) 4 s.h.
- MATH:1550 Engineering Mathematics I: Single Variable Calculus (all majors) 4 s.h.
- RHET:1030 Rhetoric (all majors) 4 s.h.

**Second Semester**

One of these:

- CHEM:1120 Principles of Chemistry II (biomedical, chemical, and environmental majors) 4 s.h.
- General education component (civil, electrical, industrial, and mechanical majors) 3 s.h.

All of these:

- ENGR:1300 Engineering Problem Solving II (all majors) 3 s.h.
- MATH:1560 Engineering Mathematics II: Multivariable Calculus (all majors) 4 s.h.
- MATH:2550 Engineering Mathematics III: Matrix Algebra (all majors) 2 s.h.
- PHYS:1611 Introductory Physics I (all majors) 4 s.h.

**Third Semester**

One of these:

- PHYS:1612 Introductory Physics II (biomedical, civil, electrical, industrial, and mechanical majors) 3-4 s.h.
- General education component (optional, chemical and environmental majors) 3 s.h.

All of these:

- ENGR:2110 Engineering Fundamentals I: Statics (all majors) 2 s.h.
- ENGR:2120 Engineering Fundamentals II: Electrical Circuits (all majors) 3 s.h.
- ENGR:2130 Engineering Fundamentals III: Thermodynamics (all majors) 3 s.h.
- MATH:2560 Engineering Mathematics IV: Differential Equations (all majors) 3 s.h.

**Requirements for Each Engineering Major**

The curriculum for each B.S.E. major is described in that program's departmental Catalog section; see Biomedical Engineering (p. 851), Chemical and Biochemical Engineering (p. 861), Civil and Environmental Engineering (p. 871), Electrical and Computer Engineering (p. 884), or Mechanical and Industrial Engineering (p. 894).

Each program's curriculum is divided into four major stems, which are described below.

**CURRICULUM STEMS**

The curriculum for each B.S.E. program of study is divided into four major stems: mathematics and basic sciences, engineering topics, an elective focus area, and the general education component (humanities and social sciences). All of the courses in the curriculum stems are integrated and sequenced to help students understand the interrelationships and importance of each stem.

**Mathematics and Basic Sciences**

The mathematics and basic sciences stem provides the foundation upon which the engineering courses for each engineering major are based. It includes a minimum of five courses in mathematics and statistics and one each in chemistry and physics. The faculty of each engineering program has specified at least one additional chemistry or physics course and other additional mathematics or
science courses beyond these minimum requirements to provide a base appropriate for the program's major.

**Engineering Topics (Science and Design)**

The engineering topics stem builds upon the math and science stem, providing a bridge from fundamental principles to applications and creative practice.

The stem's engineering science courses use the underlying principles learned in the mathematics and basic sciences stem to understand and predict the behavior of idealized models of real components or systems encountered in engineering. These courses include fundamentals of statics, thermodynamics, and electrical circuits, as well as other engineering courses relevant to each major.

The stem's engineering design courses focus on the process of devising a system, component, or process to meet a stated objective. Engineering design integrates decision making and the optimal application of basic sciences, mathematics, and engineering sciences to reach a desired outcome. Elements of the design process include the establishment of objectives and criteria, synthesis, analysis, construction, testing, evaluation, and consideration of realistic constraints such as economic factors, safety, reliability, aesthetics, ethics, and social and environmental impact.

**Elective Focus Area**

The elective focus area stem provides a set amount of credit that students use to build strength in a technical focus area by completing a minor, earning a certificate, or pursuing a tailored program of study.

Students choose elective focus area courses consistent with traditional career goals or nontraditional career goals. Their choice of degree plan and courses may affect the number and type of employment opportunities available to them after graduation. Program advisors help students develop coherent, well-focused plans that fit their goals.

Students who pursue a traditional focus area may replace up to 21 s.h. of traditional technical electives with course work toward a minor or certificate. Students who choose nontraditional focus areas work closely with an advisor to build a rigorous, well-focused program. They must define and justify their career goals; provide a detailed plan of study and obtain their B.S.E. program's approval for the plan before beginning the plan's course work; and complete the plan as approved.

Each B.S.E. program is responsible for approving proposed plans of study, ensuring that the program's ABET accreditation criteria are met, and that students' choices are consistent with their career aspirations and with the college's educational mission.

Guidelines for elective focus areas vary by program. For details, see Engineering Curriculum Guides on the college's web site.

**General Education Component**

The general education component stem promotes understanding of and appreciation for community, culture, and learning through course work. All summer 2015 incoming students and those admitted later are held to the following requirements.

Students earn 15 s.h. in courses chosen from approved departments and programs as outlined below.

Completion of at least 3 s.h. from the "Be Creative: course list as follows.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARTS:1510</td>
<td>Basic Drawing</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ARTS:1520</td>
<td>Design Fundamentals</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>CERM:2010</td>
<td>Exploring Forms in Clay I</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>CINE:1834</td>
<td>Modes of Film and Video Production</td>
<td>4 s.h.</td>
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<tr>
<td>CNW:1620</td>
<td>Introduction to Creative Nonfiction</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>CNW:2680</td>
<td>The Art and Craft of Creative Nonfiction</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>CNW:2700</td>
<td>The Art and Craft of Personal Writing</td>
<td>3 s.h.</td>
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<tr>
<td>CNW:2770</td>
<td>The Art and Craft of Writing for New Media</td>
<td>3 s.h.</td>
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<tr>
<td>CNW:2790</td>
<td>The Art and Craft of Humor Writing</td>
<td>3 s.h.</td>
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<tr>
<td>CNW:2830</td>
<td>The Art and Craft of Immersion Journalism</td>
<td>3 s.h.</td>
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<tr>
<td>CNW:2850</td>
<td>The Art and Craft of Writing About Politics</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>CNW:2910</td>
<td>Writing for Applications and Awards</td>
<td>3 s.h.</td>
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<tr>
<td>CNW:3640</td>
<td>Writing for Business and Industry</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>CNW:4355</td>
<td>Approaches to Teaching Writing</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>CW:2100</td>
<td>Creative Writing</td>
<td>3 s.h.</td>
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<tr>
<td>CW:2870</td>
<td>Fiction Writing</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>CW:2875</td>
<td>Poetry Writing</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>CW:3003</td>
<td>Writing and Reading Science Fiction</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>CW:3005</td>
<td>Professional and Creative Business Communication</td>
<td>3 s.h.</td>
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<tr>
<td>CW:3107</td>
<td>Creative Writing for the Health Professions</td>
<td>3 s.h.</td>
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<tr>
<td>CW:3210</td>
<td>Creative Writing and the Natural World</td>
<td>3 s.h.</td>
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<tr>
<td>CW:3215</td>
<td>Creative Writing and Popular Culture</td>
<td>3 s.h.</td>
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<tr>
<td>CW:3218</td>
<td>Creative Writing for New Media</td>
<td>3 s.h.</td>
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<tr>
<td>CW:4745</td>
<td>The Sentence: Strategies for Writing</td>
<td>3 s.h.</td>
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<tr>
<td>CW:4751</td>
<td>Creative Writing for the Musician</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>CW:4760</td>
<td>The Art of Revision: Rewriting Prose for Clarity and Impact</td>
<td>3 s.h.</td>
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<tr>
<td>DANC:1020</td>
<td>Beginning Jazz</td>
<td>1-2 s.h.</td>
</tr>
<tr>
<td>DANC:1030</td>
<td>Beginning Ballet</td>
<td>1-2 s.h.</td>
</tr>
<tr>
<td>DANC:1040</td>
<td>Beginning Modern Dance</td>
<td>1-2 s.h.</td>
</tr>
<tr>
<td>DANC:1050</td>
<td>Beginning/Contact Improvisation</td>
<td>1-2 s.h.</td>
</tr>
<tr>
<td>DANC:1140</td>
<td>Continuing Modern Dance</td>
<td>1-2 s.h.</td>
</tr>
<tr>
<td>DANC:2020</td>
<td>Intermediate Jazz</td>
<td>1-2 s.h.</td>
</tr>
<tr>
<td>DANC:2030</td>
<td>Intermediate Ballet</td>
<td>1-2 s.h.</td>
</tr>
<tr>
<td>DANC:2040</td>
<td>Intermediate Modern</td>
<td>1-2 s.h.</td>
</tr>
<tr>
<td>MTLS:2910</td>
<td>Introduction to Jewelry and Metal Arts</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>MUS:1007</td>
<td>Garage Band: The Basics</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>MUS:1012</td>
<td>Creativity in Music</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>THTR:1140</td>
<td>Basic Acting</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>THTR:2140</td>
<td>Acting I</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>THTR:2215</td>
<td>Theatre Technology</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>THTR:2220</td>
<td>Production Lab</td>
<td>1-3 s.h.</td>
</tr>
<tr>
<td>THTR:2610</td>
<td>Acting for Success</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>THTR:3202</td>
<td>Graphic Design and Identity</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>THTR:3230</td>
<td>Scene Design I</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>THTR:3240</td>
<td>Costume Design I</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>
Completion of at least 9 s.h. as follows. The remaining GE courses can be selected from the "Be Creative" list, from courses in the seven CLAS GE lists above, or from the College of Engineering approved course subject list. See General Education Component for departments and programs that offer approved courses. Most general education component courses are offered by the College of Liberal Arts and Sciences (CLAS).

Credit may be earned by examination; see "Academic Rules and Procedures"/"Academic Standards"/"Credit by Examination" later in this section.

Students who enter the College of Engineering with a B.A. or B.S. are considered to have satisfied the general education component requirement.

Students who enroll in a joint degree program in the College of Engineering and the College of Liberal Arts and Sciences or the Tippie College of Business are considered to have satisfied the College of Engineering's general education requirement once they have completed all requirements for the liberal arts and sciences degree or the business degree.

Honors in Engineering

Outstanding undergraduate students who demonstrate exceptional accomplishment through research, directed independent study, teaching internships, or other approved nondegree enrichment activities may graduate with honors in engineering. They must maintain a University of Iowa g.p.a. of at least 3.33, complete an honors project with a faculty member, and participate in a college-wide honors seminar with faculty members and other honors students. Successful completion of the honors requirements leads to a B.S.E. with honors, which is noted on the student's transcript. See the College of Engineering Honors Education Opportunities web page for details.

In addition to honors in engineering, undergraduate students have a variety of opportunities for honors study and activities through membership in the University of Iowa Honors Program; visit Honors at Iowa to learn about the University's honors program.

Second B.S.E. Degree

Current College of Engineering students and recent graduates may earn a second Bachelor of Science in Engineering. The second degree must include all courses required by the second engineering degree program, including the senior-level design course sequence and any specific social science elective requirements. Elective focus area courses selected for the second B.S.E. must be of a variety and level that permit students to meet at least the minimal level of competence usually expected of graduates of that program.

Students must file an academic study plan, which must be approved by the faculty of the second degree program, submitted to the Student Development Center, and placed in a student's permanent file before a student may begin course work in the second B.S.E. The study plan should include a list of the courses to be taken in the second program along with a list of the courses already completed and yet to be completed for the first engineering degree program. Any changes in the plan must be approved by a student's faculty advisor in the second program and by the department chair of that program (the college petition form may be used for this purpose), submitted to the Student Development Center, and placed in a student's permanent file.

Joint and Dual Degrees

Joint B.B.A./B.S.E.

The College of Engineering and the Tippie College of Business offer a joint degree program in which students earn two University of Iowa bachelor's degrees: a Bachelor of Business Administration (B.B.A.) from the Tippie College of Business and a Bachelor of Science in Engineering (B.S.E.) from the College of Engineering.

Students in the joint program must complete all requirements for both degrees, including all General Education requirements. They must enroll in appropriate mathematics and engineering courses early in their course of study in order to complete the program in a timely way. Because courses in natural sciences, mathematics, humanities, and social sciences count toward the B.B.A. and the B.S.E., students may count a single course toward both degrees.

B.B.A./B.S.E. students usually meet the degree requirements of both colleges in about five years; time required depends on a student's choice of major study areas.

Students in the joint B.B.A./B.S.E. program should consult with their advisors about whether the second-grade option is available to them.

Students are assigned two advisors, one in the Tippie College of Business Undergraduate Program Office and the other in their College of Engineering major department.

To enter the joint degree program, students must have approval from both colleges and must be admitted to both colleges. Interested students should contact Engineering Student Services.

For information about the B.B.A., including requirements for the degree, see Bachelor of Business Administration (p. 654) (Tippie College of Business) in the Catalog.

Joint B.S.E./Liberal Arts and Sciences Degree

Students may earn two University of Iowa bachelor's degrees in a joint program in the College of Engineering and the College of Liberal Arts and Sciences. Successful candidates are awarded a B.S.E. (Bachelor of Science in Engineering) by the College of Engineering and a B.A. (Bachelor of Arts), B.S. (Bachelor of Science), B.F.A.
At the University of Iowa, students complete the B.S.E. requirements that were current at the time of their admission to the UI College of Engineering. Course work completed at the University of Iowa is transferred to the University of Northern Iowa and applied toward the requirements for that institution's B.S. in applied physics. When transferring to Iowa from UNI, students must submit applications for admission, housing, and financial aid to the University of Iowa by the University's established deadlines.

**Joint B.S.E./M.S. in Engineering**

Engineering students may be eligible to enroll in one of the College of Engineering's joint B.S.E./M.S. programs, which allow students to begin working toward a master's degree in engineering while they are completing the bachelor's degree. The joint programs, which are offered by each of the college's departments, permit students to count certain courses toward both degrees, completing both programs in less time than they would need to complete them separately. See "Joint B.S.E./M.S." in each College of Engineering department section of the Catalog.

**Joint B.S.E./M.A. or M.S. in Urban and Regional Planning**

The College of Engineering and the School of Urban and Regional Planning offer the joint Bachelor of Science in Engineering/Master of Arts or Master of Science program in urban and regional planning. The program, which is completed in five years, is designed for students who wish to pursue a public or private sector career in planning, a field that encompasses the development of alternatives to improve the quality of life in cities and regions. Graduates are technically oriented professionals who have a clear understanding of policy development and implementation, which they apply to civil and industrial engineering problems. They fill positions such as public works director, transportation engineer, and public utilities staff member.

Each student in the joint program has two advisors, one in engineering and one in urban and regional planning. Students enroll in the College of Engineering for their first four years in the program and in the Graduate College for their fifth year. They follow the standard curriculum of their B.S.E. program during the first two years and begin adding courses from the urban and regional planning program during the third year. Successful students receive a B.S.E. at the end of the fourth year and an M.A. or M.S. in urban and regional planning at the end of the fifth year.

Students in the joint program must maintain a cumulative g.p.a. of at least 3.00 in order to graduate with an M.A. or M.S. in urban and regional planning.

See Urban and Regional Planning (p. 963) (Graduate College) in the Catalog for information about the graduate degree. Contact Engineering Student Services for information about applying to the joint program.

**Minors**

Engineering students may complete minors in a number of disciplines. For instance, students interested in heading an engineering firm might choose to earn a minor in business administration. For a list of minors and links to the departments and programs that offer them, see Undergraduate Minors (p. 12) in the Catalog.
B.S.E. programs generally allow students to satisfy their elective focus area requirement by completing a minor. Students who choose this option must work closely with program advisors to ensure that the minor is compatible with their engineering career aspirations.

In order to have the minor noted on their transcript, students must designate that they have fulfilled a minor’s requirements when they apply for degree on ISIS. See “Academic Rules and Procedures”/“Application for Degree” later in this section.

Certificates
Engineering students may earn certificates offered by colleges across the University. The College of Engineering partners with the Tippie College of Business to offer the Certificate in Technological Entrepreneurship (p. 914), which is tailored specifically for engineering students who intend to start and operate their own business or who would like to understand and learn about managing innovation in business environments. The College of Engineering also teams with the College of Liberal Arts and Sciences to offer the undergraduate Certificate in Wind Energy (p. 915), which introduces students to a developing field that has a growing need for professionals with knowledge of wind energy. Other certificates of particular interest to engineering students include the Certificate in International Business (p. 408) and the Certificate in Sustainability (p. 1248).

See Undergraduate Certificates (p. 11) in the Catalog for a complete list of certificates and links to their individual Catalog sections.

Cooperative Education and Internship Program
The Cooperative Education and Internship Program offers students the opportunity to explore engineering careers and develop engineering skills through periods of professional practice while they are still students. Supervised professional engineering-related experiences in business, industry, education, or government expose students to the challenges and opportunities of the day-to-day life of an engineer. Students with co-op and/or internship experience are sought by employers and usually receive higher starting salaries upon graduation. A portion of registered co-op and/or internship experience before graduation can be credited toward the experience requirements for professional licensure in Iowa and some other states.

Qualified students may choose to alternate periods of on-campus study with full-time work experience, or they may elect to work half time while taking at least 6 s.h. of classes. The co-op experience may cover one to three semesters, a series of summer placements, or a single summer. Students may apply to the program following their first year. Academic record and class status are considered in acceptance decisions. Interested students and employers or organizations must register with the College of Engineering director of professional development. For details, see Engineering Professional Development.

Admission
Applicants for admission to the College of Engineering as first-year students must have successfully completed at least four years of English/language arts; four years of mathematics, which must include at least two years of algebra, one year of higher mathematics (trigonometry, analysis, calculus); two years of a single foreign language; three years of natural science, which must include at least one year of chemistry and at least one year of physics; and at least two years of social studies. A high school computer programming course is recommended but not required.

Applicants are guaranteed admission to the College of Engineering if they have no high school unit deficiencies, an ACT composite score of 25 or higher, an ACT math score of 25 or higher, and a Regent Admission Index score of at least 265. Students who do not meet these requirements, or who attend a high school that does not rank its students, are encouraged to send recommendations from math and science teachers and a personal statement, which will be considered in an individual review by the College of Engineering.

Students who are admitted through the individual review process may be required to make up deficiencies by taking a lower-level course in their area of deficiency before enrolling in the first required course in that area. For example, students who have high math grades and standardized test scores, but who are deficient by one unit in mathematics, may be required to complete a course such as MATH:1020 Elementary Functions before enrolling in the first engineering calculus course.

Incoming first-year and transfer students who do not meet the foreign language requirement may be admitted on conditional status for a maximum of four semesters in order to complete two semesters of an introductory college-level foreign language.

Students who are unsure whether to pursue a degree in engineering or a degree in liberal arts and sciences are strongly encouraged to begin in engineering if they meet the admission requirements.

Information about admission to the College of Engineering is available on the college’s web site.

Transfer Applicants
Transfer applicants must have completed the same high school unit requirements as entering first-year students and must submit an official high school transcript as well as a transcript of college work undertaken at other institutions. To transfer to the College of Engineering, students must have demonstrated success in math, science, and engineering courses, ideally earning all As and Bs with no grade lower than a C in these foundation subjects. Transfer students must have completed calculus I and the equivalent of either CHEM:1110 Principles of Chemistry I or PHYS:1611 Introductory Physics I (the first semester of chemistry designed for majors, or the first semester of calculus-based physics). Overall grade-point average also is considered in transfer applications.

Information about admission requirements for transfer students is available on the college's web site.

Academic Rules and Procedures

Academic Advising
Undeclared engineering students and declared first-year students are advised by the staff of Engineering Student Services. After the first year, engineering students who have declared an academic program are
advised by faculty advisors assigned to that program. Students may request a change of advisor when it is deemed appropriate. All students are required to have a conference with their advisors before registering for classes each semester.

**Application for Degree**

Students who wish to be considered for graduation must submit an Application for Degree through ISIS the session before they are eligible to graduate or before the deadline date during the session in which their degree is to be conferred.

Students who do not graduate in the session they submitted their Application for Degree must submit another application through ISIS for the next applicable session. Students do not need to be registered to apply for a degree.

See Apply for Degree on the Office of the Registrar website.

**Academic Recognition**

**GRADUATION WITH HONORS**

Graduation with honors recognizes high academic achievement based on both grades and exceptional accomplishment. To be eligible for graduation with honors, students must be approved by a selected honors committee and the director of the honors program, and they must complete honors requirements. See “Honors in Engineering” earlier in this Catalog section.

**GRADUATION WITH DISTINCTION**

Graduation with distinction recognizes high academic achievement based on grades. The college awards degrees "with highest distinction" to students in the highest 2 percent of their graduating class, "with high distinction" to students in the next-highest 3 percent, and "with distinction" to students in the next-highest 5 percent. Ranking is based on students' grade-point average for all college-level study taken up to their final registration.

To be eligible to be considered for graduation with distinction, students must complete their final 60 s.h. of study in residence at the college and must have completed at least 45 s.h. in the college before their final registration. Students in the combined engineering/liberal arts and sciences program are eligible to graduate with distinction regardless of the college in which they complete their residency requirement.

**DEAN’S LIST**

Undergraduate students in the Colleges of Liberal Arts and Sciences and Engineering and the Tippie College of Business who achieve a g.p.a. of 3.50 or higher on 12 s.h. or more of University of Iowa graded course work during a given semester or summer session and who have no semester hours of I (incomplete) or O (no grade reported) during the same semester are recognized by inclusion on the Dean’s List for that semester.

**PRESIDENT’S LIST**

University of Iowa undergraduate students who achieve a g.p.a. of 4.00 on 12 s.h. or more of University of Iowa graded course work and who have no semester hours of I (incomplete) or O (no grade reported) for two consecutive semesters (excluding summer sessions) are recognized by inclusion on the President’s List.

**Academic Standards**

**MAXIMUM SCHEDULE**

Course schedules of more than 19 s.h. for a semester, 12 s.h. for a summer session, or 3 s.h. for a winter session require approval of the advising staff in Engineering Student Services. The Permission to Register for Additional Hours form is available online.

**CLASSIFICATION OF STUDENTS**

Students in the College of Engineering are classified by the number of semester hours of credit they have earned toward the Bachelor of Science in Engineering.

First-year: 0-29 s.h. earned toward the B.S.E.
Sophomore: 30-59 s.h. earned toward the B.S.E.
Junior: 60-89 s.h. earned toward the B.S.E.
Senior: 90 s.h. or more earned toward the B.S.E.

**GRADING SYSTEM**

The college uses a letter grading system. A denotes superior performance, B denotes above average, C denotes average, D denotes below average, and F denotes failure of the course. Plus and minus designate gradations of performance between letter grades. Letter grades and their numerical equivalents are as follows.

- A-plus: 4.33
- A (superior): 4.00
- A-minus: 3.67
- B-plus: 3.33
- B (above average): 3.00
- B-minus: 2.67
- C-plus: 2.33
- C (average): 2.00
- C-minus: 1.67
- D-plus: 1.33
- D (below average): 1.00
- D-minus: 0.67
- F (failing): 0

This grading system is used for all students in both undergraduate and graduate engineering courses. Grades of D-minus are passing grades; that is, courses completed with grades of D-minus or higher count toward collegiate requirements, with the exception of MATH:1550 Engineering Mathematics I: Single Variable Calculus and MATH:1560 Engineering Mathematics II: Multivariable Calculus, which have a minimum grade requirement of C-minus or higher.

**ACADEMIC PROBATION AND DISMISSAL**

Students who do not achieve or surpass University of Iowa cumulative and semester minimum grade-point averages of 2.00 are placed on academic probation.

Students on academic probation are restored to good standing when they successfully complete an additional 9 s.h. toward an engineering degree, either in one semester or cumulatively, and their University of Iowa cumulative and semester grade-point averages equal or exceed 2.00.
The college reviews academic records for all students at the end of the fall and spring semesters. There is no review at the end of the summer session. Students are placed on probation, dismissed for unsatisfactory progress (with or without previous probationary status), or restored to good standing only at the end of the fall and spring semesters. Students on academic probation are not permitted to continue their enrollment without written expectations for their future performance.

Students who do not make satisfactory progress may be dismissed from the college without an intervening probationary period. Students who are dismissed from the college for unsatisfactory academic progress due to circumstances beyond their control, such as a death in their immediate family or extended personal illness, may appeal for a revocation of the dismissal. A student dismissed in January must submit a written appeal by the second day of spring semester classes. A student dismissed in May must submit the written appeal by June 15.

Students dismissed from the college for poor scholarship may appeal to re-enroll after an interval of at least one calendar year. A written appeal for reinstatement must be submitted to the Appeals Committee at the Student Development Center. Appeals must be submitted before June 15 for reinstatement in a fall semester or before December 1 for reinstatement in a spring semester.

For details, see Academic Policies and Appeal Procedures under Current Students on the college's web site.

**DROPPING AND ADDING COURSES**

Courses may be added with permission of the advisor and the instructor during the first two weeks of the semester or first one-and-one-half weeks of the summer session.

Courses may be dropped with permission of the advisor and the instructor at any time during the first 10 weeks of the semester. Only under compelling circumstances may courses be dropped after the 10th week, in which case special approval must be granted by the advisor, the course instructor, and the dean's office. Under no circumstance are students permitted to drop after the beginning of the scheduled final examination period.

**LIMITS ON WITHDRAWING FROM COURSES**

Undergraduates receive the mark of W for any course dropped after the second week of the semester or the first one-and-one-half weeks of the summer session. Students may not drop the same course with a mark of W more than twice. Special courses that may be repeated are exempt from this rule.

Students who have a legitimate reason for dropping a course (e.g., disabling illness, death of an immediate family member) and can document that reason are permitted to exclude that drop from the maximum, but the W is not removed from the record. Requests for such exclusions are made at Engineering Student Services.

**WITHDRAWAL OF REGISTRATION**

Students who withdraw their entire registration must consult the staff at Engineering Student Services. A student on scholastic probation who withdraws registration at any time without good cause may not be permitted to enroll for the following semester without specific approval from Engineering Student Services staff. Withdrawal forms for students enrolled in the college are signed by the associate dean for academic programs.

**PASS/NONPASS OPTION**

A maximum of two courses taken pass/nonpass (P/N) may be applied toward satisfaction of the general education (humanities and social sciences) requirement. P/N registration must be approved by the student's advisor and the instructor of the course and must be completed during the first 10 days of a semester or the first two weeks of a summer session. P/N registration may not be changed after the deadline for adding courses. The pass/nonpass option may not be used for courses taken to satisfy the rhetoric requirement. Guided Independent Study courses taken for humanities or social science credit may not be taken P/N.

Students enrolled in courses taught in the College of Engineering may choose to be graded pass/nonpass under the following conditions:

- the signatures of the advisor and instructor must be obtained on the proper form, and the completed form must be submitted to the registrar's service center by the student within the time period established by University policy;
- the mark of P (pass) is awarded where the final course grade earned was C-minus or higher; the mark of N (nonpass) is given for grades of D-plus or below; marks of P and N are not used in computing the grade-point average, and the mark of N does not count as earned credit.

No course work taken in the College of Engineering on the pass/nonpass option may be used to satisfy requirements for an engineering degree.

**SECOND-GRADE-ONLY OPTION**

A student may elect to repeat a course with only the new grade being counted in his or her grade-point average. The option may be applied to no more than three courses, and it may be applied only once to a particular course. Transfer students may apply the option on a prorated basis.

A course may not be repeated under the second-grade-only option once it has been used as a prerequisite for a more advanced course that the student has completed successfully.

To exercise the second-grade-only option, students register as usual for the course that is to be repeated, then they complete a Second Grade Option form at Engineering Student Services. The Second Grade Option form is available online. Students must complete the form during the session in which they repeat the course, within the first 12 weeks of the fall or spring semester or the first six weeks of the summer session. Students must follow this procedure or both grades will be counted in their University of Iowa grade-point average.

Under the second-grade-only option, the registrar marks the permanent record to show that a particular course has been repeated. Both grades remain on the permanent record, but only the second is used in calculating the grade-point average and semester hours earned. The course must be taken the second time under the same circumstances and with the same grade option as it was taken the first time.

The second-grade-only option cannot be used to remove a grade of incomplete, which must be removed in the usual
manner. A student who holds a degree from the University of Iowa may not apply the second-grade-only option to a course taken before the degree was conferred.

**SATISFACTORY/FAIL COURSES**

The noncredit professional seminar courses required in each of the professional programs are offered only satisfactory/fail (S/F). No other engineering courses are offered on this basis. An F (fail) grade earned for such a class does not satisfy any portion of the professional seminar requirement.

**INCOMPLETE AND NO REPORT GRADES**

A mark of I (incomplete) that is not replaced by a final grade will automatically be converted to an F at the end of the next fall or spring semester (summer and winter sessions excluded), even if a student does not enroll after the session the incomplete was posted.

A mark of O (no grade reported) will remain on a student’s permanent record until a valid grade is submitted.

**CREDIT BY EXAMINATION**

Students who have acquired knowledge in subject areas from sources other than formal course registrations may be granted credit toward graduation by examination, under the following conditions and limitations.

No more than 32 s.h. of credit by examination may be applied toward B.S.E. degree requirements.

College-Level Examination Program (CLEP) credit may be counted toward the lower-level general education (humanities and social science) requirements. CLEP credit earned in natural science areas does not count toward the engineering degree. Credit also may be earned through Advanced Placement (AP) Exams. For details about CLEP and AP credit, see Credit by Exam Options on the Office of Admissions web site.

Engineering students may earn credit for equivalent experience or former course work in any of the required common core courses through successful completion of examinations prepared and graded by the core course committees. Students who fail a core course are not permitted to earn credit by examination for the failed course. Students who wish to earn credit for core courses by examination must obtain approval from the associate dean for academic programs.

With approval of the departmental faculty, credit in three or fewer courses (totaling no more than 6 s.h.) may be awarded upon successful completion of final examinations in program elective courses.

**LANGUAGE INCENTIVE PROGRAM**

The University’s Furthering Language Incentive Program (FLIP) gives entering engineering students two options for earning college credit for study of a world language.

**Option 1**: Entering students who place into a fifth-semester language course and complete the course with a grade of B-minus or higher receive 4 s.h. of exam credit for the fourth-semester course. The credit is ungraded but may be counted toward the hours required for graduation. Incentive credit is not granted for college course work for which credit has been received.

Students are eligible for incentive credit only during their first and second registrations at the University of Iowa.

**Option 2**: Students may receive 2 s.h. of exam credit for earning a grade of B-minus or higher in a first-semester-level course in a language different from the language used to satisfy their world languages requirement. They may earn another 2 s.h. for completing the second-semester-level course in that language for a grade of B-minus or higher.

Visit the college’s web site for more information about FLIP credit. For more information on eligibility and restrictions, consult Engineering Student Services.

**CREDIT FROM OTHER COLLEGES**

Course requirements in engineering may be satisfied with credit earned in courses taken in other University of Iowa colleges or at other accredited colleges or universities. When students apply for admission to the College of Engineering, they must submit official transcripts from each college attended along with their application for admission. After the credit has been certified by the Office of Admissions as college-level work from an accredited institution and after admission has been granted, the credit is evaluated by the Student Development Center either before or during the student's first semester of enrollment in the college.

Satisfaction of engineering course requirements by transfer course work may be approved by the Student Development Center if, course-by-course, there is a match in the content and level of the transfer courses, and if the grades earned for such courses are C-minus or higher. Students who want to satisfy the engineering General Education Component (social sciences and humanities) requirements or the University of Iowa rhetoric requirement by transfer work must follow the College of Engineering transfer credit guidelines.

Students planning to attend a two- or four-year institution before transferring to the College of Engineering should discuss the planned transfer with officials at both schools before embarking on a transfer program. The College of Engineering has recommended transfer course lists for most Iowa community colleges and some four-year colleges. Once students are enrolled in the College of Engineering, they must have prior approval for course work taken at other institutions.

Contact Engineering Student Services for more information.

By policy of the Board of Regents, State of Iowa, a student may apply a maximum of 64 s.h. of transfer credit earned at a two-year college toward the minimum 128 s.h. required for the B.S.E. However, transfer credit from a two-year school in excess of 64 s.h. is used in computing grade-point average and may be used to satisfy course requirements, even though the semester hours cannot be counted toward the total required for graduation. A grade of C-minus or higher is required in order for transfer credit to be applied toward a degree requirement.

**COURSE SUBSTITUTIONS**

For students in the College of Engineering, the substitution of an alternate course for a required course requires the approval of a petition. The Petition for Course Substitution form is available on the college’s web site or at Engineering Student Services. The form must be completed by a student and must be approved by a student's advisor and by the chair of the engineering program in which a student is majoring.
If the petition involves a required engineering core course or a General Education Component (social sciences or humanities) course, then it also must be approved by Engineering Student Services. Substitutions for required engineering core courses should be made infrequently and only under compelling circumstances. Substitutions of courses that are required by a student's program are governed by the faculty of that program; approval of these course substitutions is needed only from the faculty advisor and the department chair. All petitions must be forwarded to Engineering Student Services for inclusion in a student's permanent file.

AUDITING COURSES

Students in the College of Engineering may register for a course for zero credit (audit) with the permission of the course instructor and the advisor. The mark of AUS (audit successful) is assigned to students registered for zero credit if attendance and performance in the course are satisfactory; if unsatisfactory, the mark of AUU (audit unsuccessful) is assigned. Courses completed with a mark of AUS do not meet any requirements nor do they carry any credit toward graduation. Auditing may not be used as a second-grade-only option.

To register for a course on an audit basis, students must obtain the instructor's authorizing signature and their advisor's signature and must register for 0 s.h. To change registration from audit to credit or from credit to audit, a drop-add form is used. These changes must be made during the first three weeks of a semester or the first one-and-one-half weeks of a summer session.

Misconduct, Complaints

STUDENT ACADEMIC MISCONDUCT

Policies regarding cases of cheating or plagiarism are outlined on the College of Engineering web site; see Academic Misconduct. In cases of cheating on an exam or a quiz, the policy recommends that the instructor reduce a student's grade, including the assignment of F for the course. When a course grade has been reduced to an F, a student may not drop the course or use the second-grade-only option to eliminate the failing grade.

At the beginning of each semester, course instructors individually announce and explain their policies on acceptable levels of collaboration between students on graded work, which includes homework assignments and lab or design projects. When a policy is violated, a zero is assigned for the total portion of the course grade allocated to the requirement in which the violation occurs. The instructor sends a written report of any disciplinary action to the office of the dean and the report is placed in a student's file. Students are notified by the office of the dean of reported disciplinary action and are informed of appeal procedures.

STUDENT COMPLAINTS CONCERNING FACULTY ACTIONS

In cases where complaints do not involve alleged student academic misconduct, students with complaints against engineering faculty members should attempt to resolve the issue with the faculty member first; see Faculty Complaints on the college's web site. Lacking a satisfactory outcome, a student should discuss the matter with the chair of the faculty member's department.

Students who are uncomfortable dealing directly with a faculty member or a department chair may seek assistance from the engineering faculty ombudsperson when attempting to resolve a complaint related to an engineering course. Students taking non-engineering courses should seek assistance from the University ombudsperson. However, grievances generally can be satisfactorily resolved most expeditiously at the faculty or chair level. If students are not satisfied with the outcome of this procedure, they should discuss their complaints with the dean of engineering.

Student Organizations

The College of Engineering student body is represented by the Engineering Student Council. The council plans and carries out activities involving the entire college, including the electronic newsletter E-Week. Several engineering professional societies have student chapters at the University, as do a number of engineering honor societies. In addition, students may join a wide variety of engineering student organizations. See "Student Organizations" in the College of Engineering (p. 831) section of the Catalog or visit Student Organizations on the college's web site.
Biomedical Engineering

Chair

- Joseph M. Reinhardt

Undergraduate major: biomedical engineering (B.S.E.)
Graduate degrees: M.S. in biomedical engineering; Ph.D. in biomedical engineering
Faculty: http://www.engineering.uiowa.edu/bme/people/faculty-bme
Web site: http://www.engineering.uiowa.edu/bme

The past half century has seen tremendous growth of technological activity in biology and medicine. As engineers increasingly have become involved with projects in the life and health sciences, biomedical engineering has emerged to bridge the gap between these sciences and engineering.

The Department of Biomedical Engineering fosters interdisciplinary activities across departments and colleges and maintains strong ties with the Carver College of Medicine and the Colleges of Dentistry, Nursing, and Public Health. The department strives to provide a well-rounded and superior education that attracts outstanding students at both the undergraduate and graduate levels; to conduct high-quality research that enables faculty members and students to keep pace with and initiate new developments; and to serve government, industry, and institutions worldwide by making the department's facilities and faculty expertise accessible.

Several faculty members have joint appointments in biomedical engineering and in the Carver College of Medicine, the College of Dentistry, or the College of Public Health. Biomedical engineering undergraduates and graduate students collaborate with faculty members and their colleagues on research problems in the life and health sciences.

Undergraduate Program of Study

- Major in biomedical engineering (Bachelor of Science in Engineering)

The department provides undergraduate students with a contemporary education in a multidisciplinary field of engineering. Its objective is to produce graduates who:

- contribute to the biomedical field through the responsible design of devices, systems, processes, and policies that improve human health;
- pursue a wide range of career options, including those in industry, academia, and medicine; and
- advance to leadership positions in their chosen field.

Students who complete the program may pursue career opportunities in biomedical industries, such as design and development of biomedical instrumentation, diagnostic aids, life-support systems, prosthetic and orthotic devices, and man-machine systems; or they may pursue traditional career opportunities in industry, such as those rooted in mechanical or electrical engineering disciplines. Other career options are available in government (Food and Drug Administration, Environmental Protection Agency, National Institutes of Health, Veterans Affairs). Some biomedical engineering graduates elect to continue formal education in engineering, medicine, or law.

Bachelor of Science in Engineering

The Bachelor of Science in Engineering requires a minimum of 128 s.h. The major in biomedical engineering builds on the foundation provided by the B.S.E. core requirements, preparing students for the challenges and opportunities associated with careers in the profession.

The program has been designed carefully to enable students to satisfy the entrance requirements of the Graduate (p. 916) College. Students whose choice of electives includes a three-course sequence in organic chemistry, an additional biology course, and a biochemistry course may satisfy entrance requirements of the Carver College of Medicine (p. 1005), the College of Dentistry (p. 704), or the allied health sciences.

All engineering students complete the B.S.E. core requirements, which include RHET:1030 Rhetoric; ENGR:1100 Engineering Problem Solving I and ENGR:1300 Engineering Problem Solving II; and courses in chemistry, and engineering mathematics and fundamentals, and physics. They must earn a grade of C-minus or higher in the core requirements MATH:1550 Engineering Mathematics I: Single Variable Calculus and MATH:1560 Engineering Mathematics II: Multivariable Calculus.

They also complete the curriculum designed for their major program, which covers four stems: mathematics and basic sciences, engineering topics, an elective focus area, and the general education component (15 s.h. of humanities and social science courses). For information about the curriculum stems, see Bachelor of Science in Engineering (p. 841) in the Catalog.

Biomedical engineering students must choose a track, which constitutes the elective focus area for the biomedical engineering major. They may choose one of seven preapproved tracks—bioinformatics and computational biology, bioimaging, biomaterials, cardiovascular biomechanics, cellular engineering, musculoskeletal biomechanics, or pre-medicine—or they may propose a track that they have tailored to their own individual biomedical engineering interests. Each approved track has a group of four required courses and a list of suggested electives. For details about tracks and their requirements, visit Tracks on the department's web site.

The following study plan includes the B.S.E. core requirements and the curriculum for the biomedical engineering major. Some courses in this plan are prerequisites for others. Students must complete a course's prerequisites before they may register for the course. Those who take courses in the order below satisfy the prerequisite requirements automatically.

**FIRST YEAR**

**First Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>S.H.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM:1110 Principles of Chemistry I</td>
<td>4</td>
</tr>
<tr>
<td>ENGR:1000 Engineering Success for First-Year</td>
<td>1</td>
</tr>
<tr>
<td>Students (credit does not count toward B.S.E.</td>
<td></td>
</tr>
<tr>
<td>degree)</td>
<td></td>
</tr>
<tr>
<td>ENGR:1100 Engineering Problem Solving I</td>
<td>3</td>
</tr>
<tr>
<td>MATH:1550 Engineering Mathematics I: Single</td>
<td>4</td>
</tr>
<tr>
<td>Variable Calculus</td>
<td></td>
</tr>
<tr>
<td>RHET:1030 Rhetoric</td>
<td>4</td>
</tr>
</tbody>
</table>
Second Semester
BME:1010 First-Year Forum 1 s.h.
CHEM:1120 Principles of Chemistry II 4 s.h.
ENGR:1300 Engineering Problem Solving II 3 s.h.
MATH:1560 Engineering Mathematics II: Multivariable Calculus 4 s.h.
MATH:2550 Engineering Mathematics III: Matrix Algebra 2 s.h.
PHYS:1611 Introductory Physics I 4 s.h.

SECOND YEAR
First Semester
BME:2010 Professional Seminar: Biomedical Engineering 1 s.h.
BIOL:1411 Foundations of Biology 4 s.h.
ENGR:2110 Engineering Fundamentals I: Statics 2 s.h.
ENGR:2120 Engineering Fundamentals II: Electrical Circuits 3 s.h.
ENGR:2130 Engineering Fundamentals III: Thermodynamics 3 s.h.
MATH:2560 Engineering Mathematics IV: Differential Equations 3 s.h.

Second Semester
BME:2010 Professional Seminar: Biomedical Engineering 1 s.h.
BME:2200 Systems, Instrumentation, and Data Acquisition 4 s.h.
BME:2210 Bioimaging and Bioinformatics 4 s.h.
BME:2500 Biomaterials and Biomechanics 4 s.h.
One of these:
BIOS:4120 Introduction to Biostatistics 3 s.h.
STAT:3510 Biostatistics 3 s.h.

THIRD YEAR
First Semester
BME:2110 Cell Biology for Engineers 3 s.h.
BME:3010 Leadership and Resourcefulness 1 s.h.
PHYS:1612 Introductory Physics II (with laboratory) 3-4 s.h.
General education component courses 6 s.h.
Required track course 3 s.h.

Second Semester
BME:4010 Biomedical Engineering Design Seminar 1 s.h.
General education courses 6 s.h.
Required track course 3 s.h.
Track electives 6 s.h.

FOURTH YEAR
First Semester
BME:4910 Biomedical Engineering Senior Design I 4 s.h.
Required track courses 6 s.h.
Track electives 6 s.h.

Second Semester
BME:4920 Biomedical Engineering Senior Design II 4 s.h.
General education component course 3 s.h.
Track electives 9 s.h.

Joint B.S.E./M.S.
The College of Engineering offers a joint (fast-track) Bachelor of Science in Engineering/Master of Science for biomedical engineering undergraduate students who intend to earn an M.S. in biomedical engineering. This program allows students to count 12 s.h. toward the undergraduate and graduate degree and begin work on a master's thesis or research project while they are still undergraduates. Once students complete the requirements for the bachelor's degree, they are granted the B.S.E., and they normally complete the M.S. in their fifth year of study.

To be admitted to the joint degree program, students must have completed at least 80 s.h., must have a cumulative g.p.a. of at least 3.50, and must submit a letter of application to the chair of the Department of Biomedical Engineering stating the intended area of specialization and a letter of support from the proposed M.S. advisor.

Joint B.S.E./M.S. in Occupational and Environmental Health
B.S.E. students majoring in biomedical engineering (musculoskeletal biomechanics track) who are interested in earning a Master of Science in occupational and environmental health (industrial hygiene subprogram) may apply to the joint B.S.E./M.S. program offered by the College of Engineering and the College of Public Health. The joint program permits students to count a limited amount of credit toward the requirements of both degrees, enabling them to begin the study of public health before they complete the bachelor's degree. For information about the M.S. program, see Occupational and Environmental Health (p. 1180) (College of Public Health) in the Catalog.

Graduate Programs of Study
- Master of Science in biomedical engineering
- Doctor of Philosophy in biomedical engineering

Graduate study in biomedical engineering prepares students to use contemporary methods at an advanced level during a professional career in engineering design, development, and research.

Each student's course of study is based on individual background and career objectives, and sound academic practice. Department faculty members have teaching and research expertise in areas related to cardiovascular and fluid biomechanics, musculoskeletal biomechanics, biomaterials and tissue engineering, bioinstrumentation, biosystems, biomedical imaging, biological signal analysis, bioinformatics and computational biology, and other allied fields.

An individual program for each student may be developed from courses offered by the biomedical engineering department and other departments, especially mechanical engineering, electrical engineering, physiology, mathematics, and biological sciences. M.S. students who
want a more general program may combine emphases, while those who want some specialization in a particular field can achieve their goals through the combination of departmental courses and appropriate electives from other departments of the College of Engineering and the University.

Ph.D. programs may center on any one of the previously described areas through the choice of appropriate course work and research topic.

**Master of Science**

The Master of Science program in biomedical engineering requires a minimum of 30 s.h. of graduate credit, with or without thesis. Students who choose the nonthesis program must earn at least 6 s.h. of credit in courses numbered 5000 or above. Those who choose the thesis program may count no more than 6 s.h. of thesis research and writing credit toward the degree. The M.S. may be a terminal degree or a step toward the Ph.D.

A tentative plan of study for each student is determined through consultation with an advisor. An M.S. committee of at least three graduate faculty members, including at least two on the biomedical engineering faculty, is appointed by the dean of the Graduate College. A student's plan of study is reviewed by the committee before the student has completed 18 s.h. of course work. The plan of study then is submitted for review to the department chair.

M.S. students must fulfill the grade-point-average requirements of the Graduate College on a minimum of 30 s.h. of graduate work and must successfully complete the final examination administered by their committee.

M.S. students (thesis or nonthesis) must complete the following courses or their equivalents.

- **BIOS:5110 Introduction to Biostatistics** 3 s.h.
- **ENGR:7270 Engineering Ethics** 1 s.h.
- **HHP:3500 Human Physiology** 3 s.h.
- **ME:5113 Mathematical Methods in Engineering** (or equivalent math course numbered 3000 or above) 3 s.h.

Individual study plans should include as much advanced work as individual aptitude and previous preparation permit.

**Doctor of Philosophy**

The Doctor of Philosophy program in biomedical engineering requires a minimum of 72 s.h. of graduate work, including acceptable transfer credit. At least 42 s.h. must be earned in formal course work taken after the B.S. is awarded, and at least 12 s.h. must be earned for research and the thesis. Students who enter with an M.S. may count a maximum of 33 s.h. of approved transfer credit toward the Ph.D., but they must earn 39 s.h. of graduate credit at the University of Iowa, including at least 12 s.h. for research and the thesis. Based on a student's research progress, examination results, or other measures, the graduate committee may require additional formal course work to strengthen perceived areas of weakness.

Ph.D. students must complete the following courses or their equivalents.

- **BIOS:5110 Introduction to Biostatistics** 3 s.h.
- **ENGR:7270 Engineering Ethics** 1 s.h.
- **HHP:3500 Human Physiology** 3 s.h.
- **ME:5113 Mathematical Methods in Engineering** (or equivalent math course numbered 3000 or above) 3 s.h.

Admission to the Ph.D. program is conditional until students successfully complete a qualifying examination. The biomedical engineering faculty administers the exam and decides whether a student's performance on it is adequate for admission to the Ph.D. program.

Admission to Ph.D. candidacy requires a g.p.a. of at least 3.00 on all graduate work at the University of Iowa. Upon completion of the course work specified in the plan of study and with the required grade-point average and the advisor's recommendation, students are admitted to the comprehensive examination by their committee.

Having satisfactorily completed these examinations, students usually have only to complete and defend their dissertation at the final examination. Requirements for the Ph.D. generally can be completed in about three years beyond the master's degree.

**Admission**

Applicants must meet the admission requirements of the Graduate College; see the Manual of Rules and Regulations of the Graduate College.

Applicants who have earned a baccalaureate or postbaccalaureate degree in engineering or in the mathematical or physical sciences, with a g.p.a. of at least 3.00, and who have a combined verbal and quantitative score of 310 on the Graduate Record Examination (GRE) General Test are eligible to be considered for admission to the Master of Science program in biomedical engineering. Students with a lower grade-point average or GRE General Test scores may be considered for conditional admission; they must achieve regular standing within 8 s.h. of their initial registration by attaining the minimum grade-point average required by the Graduate College and regular acceptance by the department faculty. Students who do not meet these requirements are subject to dismissal.

Reference letters, research interests, previous graduate grade-point average, and other factors may be considered in making admission decisions.

Admission to the Doctor of Philosophy in biomedical engineering is conditional until students successfully complete a qualifying examination.

**Financial Support**

Students are encouraged to apply for fellowships and assistantships. Contact the chair of the Department of Biomedical Engineering.

**Facilities and Laboratories**

**Undergraduate Teaching Laboratories**

Five dedicated undergraduate teaching laboratories are associated with the required and elective courses in biomedical engineering: Biomaterials Laboratory, Biomeasurements and Biosystems Laboratory, Biomechanics Laboratory, Cell Biology for Engineers Laboratory, and Senior Design Laboratory.

**BIOMATERIALS**

The Biomaterials Laboratory is equipped to test varied properties of biomaterials, including hard and soft tissues...
and prostheses. The laboratory is used for biomaterials courses, senior design projects, and BME:5421 Cell Material Interactions.

**BIOMEASUREMENTS AND BIOSYSTEMS**

The Biomeasurements and Biosystems Laboratory is equipped to measure biomedical variables of clinical and physiological interest, design and build electronic instrumentation, and conduct modeling experiments in physiology. It is used for BME:2200 Systems, Instrumentation, and Data Acquisition, BME:2210 Bioimaging and Bioinformatics, elective courses in biomeasurements and biological systems analysis, senior design projects, and demonstrations in BME:2110 Cell Biology for Engineers.

**BIOMECHANICS**

The Biomechanics Laboratory is equipped to perform experiments relating to the cardiovascular and human musculoskeletal systems. The laboratory houses a cone and plate viscometer; compact stress-strain devices; blood pressure and flow measurement devices; digital still, video, and motion caption cameras for kinematic analysis; goniometers; a ski binding tester; a drop tower for impact testing; a dual mode amplifier system; two 3-D printers; and a table-top material testing machine. The laboratory is used for BME:2500 Biomaterials and Biomechanics, elective courses in cardiovascular and skeletal biomechanics, other elective courses, and senior design projects.

**CELL BIOLOGY FOR ENGINEERS**

The Cell Biology for Engineers Laboratory trains students in cell culture and biochemical analysis techniques as a foundation for future studies in quantitative cell-based studies. Students learn basic cell culture techniques, protein and nucleic acid analysis, adenovirus-mediated gene transfer techniques, microarray and analysis, and polymerase chain reaction (PCR) analysis of nucleic acids. They also are introduced to bioinformatics techniques used in cell biology. Major equipment in the lab includes laminar flow hoods, cell culture incubators, centrifuges, an ultracold freezer, protein and nucleic acid electrophoresis equipment, thermal cyclers, microscopes, an automated microplate reader, and varied support apparatuses used in cell-based studies. The lab is used for BME:2110 Cell Biology for Engineers, BME:4120 Advanced Cell Biology for Engineers, and BME:5421 Cell Material Interactions.

**SENIOR DESIGN**

The Senior Design Laboratory provides a collaborative atmosphere for student groups as they create working prototypes. It has computer workstations, project workspace, and storage space for the development of senior design projects. In addition, a variety of tools and equipment are available in the lab, including electronics measurement devices, soldering tools, Dremel tools, miscellaneous sample medical equipment, and other resources for students. It is used by students taking BME:4910 Biomedical Engineering Senior Design I and BME:4920 Biomedical Engineering Senior Design II.

**Research Facilities and Laboratories**

**BIOINFORMATICS AND COMPUTATIONAL BIOLOGY LABORATORY**

The Bioinformatics and Computational Biology Laboratory is wired for high-speed networking (10- and 100-megabit and gigabit ethernet, hardwired and wireless, and ATM). It includes five dedicated Linux clusters, 126 computing systems, 178 CPUs, more than 100 gigabytes of RAM, and 2.5 terabytes of disk space.

Computer resources include a dedicated computer server cluster of 18 Linux systems (36 CPUs) connected with a dedicated, switched, copper Gigabit Ethernet—intranet—18 Dual AMD MP-2400 (2.2 GHz, 2 GB memory, 40 GB disk each); second dedicated computer server cluster of 16 Linux systems (32 CPUs) connected with a dedicated, switched, fiber-optic Gigabit Ethernet—intranet—12 Dual Pentium III (500 MHz, 1 GB memory, 9 GB disk each), and four Dual Pentium III (500 MHz, 2 GB memory, 9 GB disk each); and third dedicated computer cluster of nine Linux systems (18 CPUs) connected with a dedicated 2.4 GB multistage intranet—eight Dual Pentium III (866 MHz, .5 GB memory, 45 GB disk each), and one Dual Pentium III (866 MHz, 1 GB memory, 45 GB disk each).

There are two additional clusters: an 8-node cluster of Pentium II class machines and a 12-system heterogeneous cluster of various SUNs, HPs, and SGIs; four dedicated, dual fiber channel, redundant disk storage systems (RAID) with 412 GB usable each. An additional 78 computers are used as compute servers, web servers, database servers, file servers, workstations, laptops, and for other developmental and experimental needs.

**CARDIOVASCULAR BIOMECHANICS LABORATORY**

The Cardiovascular Biomechanics Laboratory houses an EMS Whitest uniaxial tension/compression testing system, a pulse-duplicating apparatus with flow loop, a spectrophotometer, silicone prototype fabrication utilities, high-speed/high-resolution cameras, a Sun Solaris workstation, and personal computers. The lab is equipped for soft tissue tensile/compression testing and viscoelastic creep/relaxation testing; simulation of flow through fabricated, anatomically realistic, patient-specific models of vasculature and heart valves; quantification of protein content in soft tissues; fabrication of realistic, compliant prototypes of human organs; and computational modeling of hemodynamics and tissue mechanics of normal and pathological cardiovascular organs.

**IOWA SPINE RESEARCH CENTER BIOMECHANICS LABORATORY**

The Iowa Spine Research Center Biomechanics Laboratory is fully equipped to perform studies of tissue and/or specimen response to mechanical loads. An MTS Bionix servohydraulic testing machine (with extended columns) permits application of uniaxial tension or compression in concert with axial torsion under displacement (rotation) or load control. A spine stimulator consisting of an upper and lower gimbal permits kinematic studies of the spinal column (flexion-extension, lateral bending, and axial rotation). The laboratory also has a two-sensor (six-camera) 3-D motion capture system. These devices are used to test mechanical properties of biomechanical joints and tissues and for biomechanical evaluation of surgical treatment modalities. The center is located at the University of Iowa Research Park.

**JOLT/VIBRATION/SEATING LABORATORY**

The Jolt/Vibration/Seating Laboratory is equipped for investigation of the biomechanics of the spine, particularly problems related to low back pain due to the interaction between people and equipment in jolt (impact) and
vibration environments. Three shakers are available to simulate impact and vibration environments.

Human responses are measured using equipment including load cells, electromyography, accelerometry, position sensors, and pressure pads. Portable sensors and data recorders are used to evaluate impact and vibration environments in the field and compare them to domestic and international guidelines and standards.

**MULTISCALE MODELING, MECHANOBIOLOGY, AND TISSUE ENGINEERING LABORATORY**

The Multiscale Modeling, Mechanobiology, and Tissue Engineering Laboratory is equipped for computational and experimental investigations centered on the role of physical forces in directing cell-material interactions that govern biological phenomena across multiple scales. A 650-square-foot core web lab has equipment for isolating, culturing, maintaining, and analyzing cells, including a Nu-Aire two-chamber incubator, lab refrigerator and freezer, and a Thermo Scientific 1300 Series class II, type A2 biological safety cabinet. A 120-square-foot microscopy room houses an ADMET BioTense top-mounted perfusion bioreactor that integrates with a Nikon Ti-E inverted microscope, a system equipped to simultaneously record force values and acquire images of cell-to-extracellular matrix interactions in 3-D environments (e.g., a collagen gel) at high magnification over long periods of time and under a suite of mechanical testing protocols. The MTESTQuattro material testing system and accompanying software controls the bioreactor temperature, drives the actuator, and records force. The system can be operated in load or displacement control, supplying monotonic, cyclic, or segmented control profiles. Both the microscope and bioreactor are interfaced with an HP Z210 convertible minitower base model workstation.

**ORTHOPAEDIC BIOMECHANICS LABORATORY**

The Orthopaedic Biomechanics Laboratory occupies 20 rooms on the ground floor of Westlawn. It is configured primarily for macroscopic-level physical testing of musculoskeletal constructs (e.g., bones, articular joints, orthopaedic implants) and for corresponding computational modeling. The physical testing area includes a multipurpose wet lab, a multipurpose dry lab, a surgical preparation room, a mechanical testing room, a machine shop, and a specimen storage area. The computational modeling area is arranged around eight separate workstation seats in two adjoining partially partitioned areas. Adjacent to these core operational areas are offices for faculty, research staff, students, and fellows; a secretarial/reception area; a conference room; and a library.

**REGENERATIVE ENGINEERING LABORATORY**

The Regenerative Engineering Laboratory inhabits over 1000 square feet of the new Pappajohn Biomedical Discovery Building. The laboratory is fully equipped to support research at the interface of materials, engineering, and cell biology. The BSL2 cell culture room in the lab has two Panasonic cell culture incubators, two thermo biological safety cabinets, a fluorescent microscope, 37°C bead bath, and centrifuges. A separate 4-color fluorescence microscope also is available. The fully automated Leica DMi6000 captures 4-color fluorescence images at up to 63X magnification. A built-in z-motor and post-acquisition analysis software allows for the capture and analysis of three dimensional z-stacks.

The chemistry part of the lab is equipped for biodegradable particle synthesis and analysis. In addition to a fume hood, sink, and laboratory counters, the lab has an analytical grade Mettler Toledo XS64 balance, water bath sonicator, homogenizer, syringe pumps, and a LabConco -86°C Cascade Lyophilizer. To support long term storage of the reagents required for the molecular biology and chemistry portions of the lab, a variety of cold storage options are available including 4°C, -20°C, -80°C, and -130°C.

**SPINE BIOMECHANICS AND ERGONOMICS LABORATORY**

Located at University of Iowa Hospitals and Clinics, the Spine Biomechanics and Ergonomics Laboratory is equipped for investigation of the biomechanics of the spine, particularly problems related to production and treatment of low back pain. For example, electromyography equipment, accelerometry, a motion capture system, and a force plate are used to study response to sudden loads. A stadiometer is used to evaluate how varied activities affect shrinkage (creep) in the spine. A pressure pad is used to study interface pressures between people and chairs or beds.

**SPINE RESEARCH LABORATORY**

The Spine Research Laboratory is equipped for interdisciplinary research. The laboratory’s MTS Bionix servohydraulic testing equipment (with extended columns) permits application of uniaxial tension or compression together with axial torsion under displacement or load control. The laboratory also has a fully automated 3-D motion measuring system. These devices are used to test mechanical properties of biomechanical joints and tissues, and for biomechanical evaluation of the performance of surgical treatment modalities. Other equipment includes digital cameras, surgical tools, and sensors (i.e., LVDTs, six-degrees-of-freedom load cell, pressure transducers, digital inclinometers).

A biaxial biomechanical culture system is available for application of controlled compression and/or shear forces onto the intervertebral disc during culture, in order to investigate the disc’s biological responses to mechanical loads. This culture system is used in conjunction with an incubator in which cells and tissues can be cultured. Basic equipment for histology and immunohistochemical analyses includes a microtome, ovens, a microscope, and glassware for chemical processes.

**TISSUE ENGINEERING LABORATORY**

The Tissue Engineering Laboratory is outfitted with a fume hood, sink, laboratory counters, tables, and major tissue culture equipment, including a Baker SG3 laminar flow hood, a NuAir water jacked incubator, an autoclave, a vacuum pump, a Zeiss Axiosvert S-100 phase contrast and bright field microscope with a computer interface, computer-controlled peristaltic pumps, a computer-controlled water bath, and a refrigerator and freezer.

The inverted microscope has an image capture system interfaced to a computer workstation with image processing software. A variety of sensors for performing temperature, pressure, and flow measurements also are available. The laboratory’s computers are equipped with software for graphical, numerical, image analysis, word processing, and symbolic computation. Liquid nitrogen dewars, and CO2 and N2 tanks have been installed. An
Ussing chamber with electrodes and a high impedance Keithley electrometer also are available.

**Courses**

**Special Topics**

**BME:0000 Cooperative Education Training Assignment: Biomedical Engineering**

Biomedical engineering students participating in the Cooperative Education Program register for this course during work assignment periods; registration provides a record of participation in the program on the student’s permanent record. Requirements: admission to Cooperative Education Program.

**BME:0002 Half-time Cooperative Education Training Assignment: Biomedical Engineering**

Registration for work assignment periods; for students participating in the Cooperative Education Program.

**BME:1010 First-Year Forum**

1 s.h.

Presentations by faculty, graduate students, collaborators from the Carver College of Medicine, and Colleges of Dentistry and Law; may include visits to laboratories and industries.

**BME:2010 Professional Seminar: Biomedical Engineering**

1 s.h.

Professional aspects of biomedical engineering presented through lectures and discussions by guest speakers, field trips, films, panel discussions. Requirements: sophomore or higher standing.

**BME:2110 Cell Biology for Engineers**

3 s.h.

Introduction to fundamental concepts in quantitative cell biology from an engineering perspective. Prerequisites: BIOL:1411.

**BME:2200 Systems, Instrumentation, and Data Acquisition**

4 s.h.

Introduction to linear system theory and application, including convolution, Laplace Transform, transient analysis, sinusoidal steady-state analysis, and Fourier analysis; patient safety; acquisition and analysis of data collected from living systems, including concepts of analog circuit design with emphasis on operational amplifiers, active filters, clinical circuits, Nyquist concepts and digital conversion, and interface to computers; physics, acquisition, and analysis of medical images, especially those collected from X-ray, CT, MR, and ultrasound systems. Prerequisites: ENGR:2120. Corequisites: HHP:3500.

**BME:2210 Bioimaging and Bioinformatics**

4 s.h.

Introduction to bioinformatics and biomedical imaging; computer algorithms, machine learning, databases and SQL, the web and web servers, ethics, computer security, genome technology, public warehouses of biological data; medical imaging hardware and software for acquisition and analysis of medical images, especially those collected from X-ray, CT, MR, and ultrasound systems; medical imaging system physics, including interaction of energy with tissue, concepts of image spatial and temporal resolution; applications of filtering, enhancement, and image processing for analysis of medical images. Prerequisites: BIOL:1411 and ENGR:1300.

**BME:2500 Biomaterials and Biomechanics**

4 s.h.

Introduction to mechanics and materials in biological systems; principles of mechanics (stress, strain, motion, fluid flow) presented and used to characterize behavior of biological entities (tendon/ligament, bone and cartilage, blood, blood vessels, heart); principles of material science; role of biomaterials (metals, polymers, ceramics) in medical devices. Prerequisites: ENGR:2110. Corequisites: HHP:3500.

**BME:2710 Engineering Drawing, Design, and Solid Modeling**

3 s.h.

Introduction to methods and principles used by engineers to define and describe geometry and topology of engineered components; use of Parametric Technology's Creo Pro (formerly ProEngineer) 3-D CAD software; emphasis on elements of design; basic commands used in parametric design to develop spatial visualization skills and the ability to create and understand 3-D solid parametric design for assembly and 3-D drawing documentation; creation of 3-D assemblies and detailed drawings from art of design to part, utilization of solid modeling techniques.

**BME:3010 Leadership and Resourcefulness**

1 s.h.

Development of leadership skills and resourcefulness for real-world professional work and life. Requirements: completion of BME:1010 and two semesters of BME:2010.

**BME:3998 Individual Investigations: Biomedical Engineering**

Individual projects for biomedical engineering undergraduate students, such as laboratory study, engineering design projects, analysis and simulation of an engineering system, computer software development, research.

**BME:4010 Biomedical Engineering Design Seminar**

1 s.h.

Information and presentations about possible projects; mentors available for senior design projects. Requirements: junior standing.

**BME:4110 Principles of Regenerative Bioengineering**

arr.
Embryonic, fetal, and adult sources, human and nonhuman "stemness" of cells; references to biomaterials (i.e., those designed to direct organization, growth, and differentiation of cells in process of forming functional tissue by providing physical and chemical cues); biomarkers and nano-medicine; promises of bioinformatics in support tissue engineering, gene and protein sequencing, gene expression analysis, protein expression, and interaction analysis. Prerequisites: BIOL:1411. Corequisites: HHP:3500. Recommendations: BME:2110.

**BME:4111 Fundamentals of NanoScale Technologies in Regenerative Bioengineering**

Nanotechnology as an emerging field in the quest to better and more affordable health care; experimentation and development of new materials that benefit regenerative medicine; targeted drug delivery and enhanced tissue engineering as a priority in pursuit of new approaches in tissue and organ transplantation; state-of-the-art new technologies applied to role of stem cells and biomedical engineering in future health care; seminar with reading and comments of significant journal articles in the field. Prerequisites: BME:4110.

**BME:4112 Methods in Regenerative Bioengineering and NanoScale Technology**

Nanotechnology as an emerging field in the quest to better and more affordable health care; experimentation and development of new materials that benefit regenerative medicine; targeted drug delivery and enhanced tissue engineering as a priority in pursuit of new approaches in tissue and organ transplantation; state-of-the-art new technologies applied to role of stem cells and biomedical engineering in future health care. Prerequisites: BME:4110. 3 s.h.

**BME:4120 Advanced Cell Biology for Engineers**

Introduction to techniques and quantitative analysis used in cell biology and taught from cell engineering perspective; focus on isolation, intracellular localization, and determination of mRNA levels of specific cellular proteins; analysis of resulting data and interpret reliability of results; laboratory course. Prerequisites: BME:2110. 3 s.h.

**BME:4310 Computational Biochemistry**

Introduction to biomolecular modeling and computer simulation techniques; biomolecular structure and molecular driving forces; principles of structural optimization and conformational sampling; applications to biomolecular phenotypes; scripting and molecular visualization in PyMol, setting up and running molecular dynamics simulations using VMD and NAMD, performing refinement of X-ray diffraction data sets using Phenix, and executing Poisson-Boltzmann electrostatic calculations using APBS. Prerequisites: CHEM:1120 and (MATH:1560 or MATH:1860). Recommendations: BIOC:3110 or BIOC:3120. 3 s.h.

**BME:4910 Biomedical Engineering Senior Design I**

Individual or group work on a creative design project involving current problems in biomedical engineering; interdisciplinary projects involving biomedical engineering and health sciences faculty members; first semester of a year-long senior capstone design project. Requirements: senior standing. 4 s.h.

**BME:4920 Biomedical Engineering Senior Design II**

Second semester of a year-long senior capstone design project begun in BME:4910. Prerequisites: BME:4910. 4 s.h.

**BME:5020 Seminar in Bioinformatics**

Forum for research presentations by scientists with national and international prominence; broad range of research topics in bioinformatics, genomics, and high-throughput biology; sponsored by the NIH T32 Bioinformatics Predoctoral Training Program at the University of Iowa. 1 s.h.

**BME:5320 Bioinformatics Techniques**

Informatics tools and techniques applied to modern problems in biomedicine and basic life sciences; common tools, experience applying tools in contemporary problem settings; genomics and genetics, how to sequence a genome, transcription and expression, SNPs, Perl, BioPerl, Perl modules, Ensembl API, BLAST/BLAT, NCBI, UCSC, Ensembl Genome browsers, linkage, association, disease gene identification. Prerequisites: BIOL:1411 and ENGR:1300. Same as ECE:5210. 3 s.h.

**BME:5325 Introduction to Systems Biology**

How higher-level properties of complex biological systems arise from the interactions among their parts; fundamentals of biological network analysis with focus on protein-protein interaction, regulatory, and genetic interaction networks; principles of systems biology and biological networks; experimental methods and analytical approaches for specific networks; current emerging research areas in the field of systems biology; didactic lectures and case-study projects. Prerequisites: BME:4213 or BME:5320 or GENE:6170 and BME:5330. Recommendations: senior standing, or graduate standing with background in biology, computer science, applied mathematics, statistics, physics, or engineering. 3 s.h.

**BME:5330 Computational Genomics**

Introduction to computational methods used in genome analysis and functional genomics; biological sequence analysis, sequence database search, microarray data analysis, biological network analysis; in-depth coverage of principal genome science challenges and recent solutions. Prerequisites: BME:5320 and CS:3110 and (BIOS:4120 or STAT:3510). Same as BIOL:5320, GENE:5173, ECE:5220. 3 s.h.

**BME:5340 Contemporary Topics in Biomedical Engineering**

New and emerging areas of biomedical engineering and related fields; specific content varies. 3 s.h.
BME:5430 Biotransport 3 s.h.
Energy, mass, and momentum transport in living systems; processes essential for understanding how physiological systems function from molecular level through scale of tissues and organs; fluid mechanics and physiological flows, mass transport, biochemical kinetics and reactions, bioheat transfer; conservation laws; various biological applications.

BME:5710 Digital Human Modeling and Simulation 3 s.h.
Fundamentals of using computational methods in modeling, simulating, and animating articulated kinematic chains such as robots and humans; underlying mathematics, introductory concepts in kinematics and dynamics, serial chain kinematics and multibody dynamics; methods from kinematics and dynamics, coupled with biomechanical concepts, provide an integrated approach to predicting and analyzing serial link motion (e.g., human and robotic manipulator motion). Prerequisites: ENGR:2710. Same as ME:5130.

BME:5910 Fast-Track Biomedical Engineering Design 1-A 3 s.h.
Part A of first semester of year-long senior capstone design project; individual or group design project involving biomedical engineering problems. Corequisites: BME:5911. Requirements: senior standing.

BME:5911 Fast-Track Biomedical Engineering Design 1-B 1 s.h.
Part B of first semester of year-long senior capstone design project; individual or group project involving biomedical engineering problems. Corequisites: BME:5910. Requirements: senior standing.

BME:5920 Fast-Track Biomedical Engineering Design 2-A 3 s.h.

BME:5921 Fast-Track Biomedical Engineering Design 2-B 1 s.h.

BME:6120 Advanced Topics in Regenerative Bioengineering and NanoScale Biotechnology 3 s.h.
Continuation of BME:4110 with in-depth examples and approaches; development of organs through stem cells maturation and differentiation complemented by biomedical applications; fundamental concepts of stem cell biology applied to modern technology; reference to biomaterials (those designed to direct organization, growth, and differentiation of cells); concept of biomarkers and nanomedicine based on the notion that new materials can be engineered to not interfere with normal biological conditions and unique enough to be detected non-invasively with modern diagnostic instruments (CT, MRI, Echo). Prerequisites: BME:2110 or BME:4110.

BME:6310 Contemporary Topics in Bioinformatics 3 s.h.
Next-generation sequencing technology and design, next-generation sequencing analysis and algorithms, contemporary topics in bioinformatics, genetics of disease (visual system as a model) and genetic engineering; grant writing. Recommendations: BME:5330 or advanced programming skills and understanding of DNA.

Biomaterials

BME:5401 Biomaterials and Implant Design 3 s.h.
Introduction to material and mechanical considerations underlying a broad range of medical implants; emphasis on understanding factors involved in orthopaedic device design; major classes of biomaterials; considerations that underlie implant design, use, failure; contemporary areas of biomaterials and implant development. Prerequisites: BME:2500 and ENGR:2750.

BME:5415 Polymer Fundamentals 1 s.h.
Basic knowledge of polymers required as a foundation for other UI courses on polymers: basic polymer terminology, polymer groups, polymerization mechanisms, molecular weight determination. Five weeks. Same as CBE:5309.

BME:5421 Cell Material Interactions 3 s.h.
Current thought and techniques in the engineering and assessment of biomaterials. Prerequisites: BME:2110.

BME:6110 Mechanics of Cells and Cellular Systems 3 s.h.
Mechanics of cells; focus on cellular mechanical properties, responses to mechanical stimuli, cellular forces and measurement, and computational tools; cellular environment considered with implication to disease pathologies and medical device design considerations.

Biomechanics/Biofluids

BME:5510 Cardiac and Vascular Mechanics 3 s.h.
Bio-solid mechanics of the cardiovascular system; mechanical properties of ventricles, valves, and blood vessels, their normal function, how they are affected by disease states; design of artificial organs, prostheses. Prerequisites: BME:2500 and ENGR:2750.

BME:5520 Cardiovascular Fluid Mechanics 3 s.h.

BME:5530 Design of Circulatory Implants and Artificial Organs 3 s.h.
Exploration of current innovations and new technologies; examination of various devices currently on the market from a standpoint of design variables and objectives (i.e., stents, heart valves, dialyzers, VADs, artificial organs); biomedical engineers’ vital role in design and improvement of these implants. Prerequisites: BME:2500.
BME:5610 Musculoskeletal Biomechanics  
Principles of solid mechanics applied to analytical, experimental investigation of biological systems; emphasis on applications in kinesiology of human musculoskeletal system. Prerequisites: BME:2500 and ENGR:2750.

BME:5620 Introduction to Applied Biomedical Finite Element Modeling  
Introduction to finite element modeling as applied to biomechanics-related applications. Prerequisites: BME:2500 and ENGR:2750.

BME:5630 Kinetics of Musculoskeletal Systems  
Principles of kinematics; kinetics applied to analytical and experimental investigation of musculoskeletal systems; mathematical foundations for kinematic and kinetic analyses; examples of mathematical modeling of human movements. Prerequisites: ENGR:2710.

BME:5640 Ergonomics of Occupational Injuries  
Epidemiology, surveillance systems, ergonomics, biomechanics, physiology, psychology, legal aspects, and cost control. Prerequisites: BME:2500 and ENGR:2750.

BME:5660 Intermediate Mechanics of Deformable Bodies  
Application of equilibrium analyses, strain-displacement relations, and constitutive relationships to practical structural systems and elementary plane elasticity problems. Prerequisites: ENGR:2750. Same as CEE:5540, ME:5150.

BME:6415 Advanced Biomechanics and Modeling of Soft Tissues  
Application of continuum mechanics and modeling to study of biological tissues and biomaterials.

BME:6515 Advanced Biological Soft Tissue Mechanics  
Topics in vascular solid mechanics; study of vascular tissue from theoretical (constitutive modeling), experimental, and computational perspectives.

BME:6520 Advanced Biofluid Mechanics  
Hemodynamic theories of atherogenesis, Womersley models, steady and unsteady flows in curavature, bifurcation and branching arterial segments, flow dynamics past prosthetic implants, experimental and computational models, particulate and mass transport simulations in human circulation. Prerequisites: BME:5520.

BME:6610 Spine Mechanics  
Biomechanics applied to mechanics of the human spine; clinical aspects; state-of-the-art in spine research; basic engineering principles for biomechanical analysis. Prerequisites: BME:5610.

BME:6630 Human Response to Vibration  
Exploration of the human body, a complex mechanism exposed to mechanical shock and vibration from many sources, under many conditions; interactions and applicable exposure standards, effects of whole-body and hand-arm vibration. Requirements: graduate standing in College of Engineering or College of Public Health.

Bioelectrical Engineering

BME:5200 Biomedical Signal Processing  
Application of signal processing methods (e.g., Fourier, Laplace, z-transforms) to biomedical problems, such as analysis of cardiac signals, circadian rhythm, the breathing cycle; computer simulation lab.

BME:5210 Medical Imaging Physics  
Physics and data acquisition techniques of major medical imaging modalities (X-ray, CT, MR, ultrasound, PET, SPECT); physical interactions of energy with living tissue; principles and methods for acquiring imaging data and subsequent image construction; how individual modalities influence image quality; MATLAB programming required. Second in a medical imaging sequence. Prerequisites: BME:2200 and BME:2210.

BME:5220 Digital Image Processing  
Mathematical foundations and practical techniques for digital manipulation of images; image sampling, compression, enhancement, linear and nonlinear filtering and restoration; Fourier domain analysis; image pre-processing, edge detection, filtering; image segmentation. Prerequisites: BME:2200 or ECE:2400. Same as ECE:5480.

BME:5230 Multidimensional Medical Imaging Process  
Algorithms developed to process and analyze large volumetric data sets; physics of CT, MRI, ultrasound, 3-D convolution and filtering, geometric transformations, shape features, surface segmentation, regional segmentation, surface tiling, surface reconstruction, volumetric registration. Third in a medical imaging sequence. Prerequisites: ENGR:1300.

BME:5250 Multidimensional Medical Imaging Process  
Algorithms developed to process and analyze large volumetric data sets; physics of CT, MRI, ultrasound, 3-D convolution and filtering, geometric transformations, shape features, surface segmentation, regional segmentation, surface tiling, surface reconstruction, volumetric registration. Third in a medical imaging sequence. Prerequisites: ENGR:1300.

BME:5251 Advanced Biosystems  
Biological systems unique to systems analysis; operation under nonequilibrium conditions; tools for systems analysis developed from models of systems at equilibrium (i.e., mechanical systems); fundamental difference between biological and mechanical systems that impact systems analysis; expand knowledge of linear systems and begin work with nonlinear systems; various modeling and analysis approaches useful in biomedical and biomedical engineering research. Prerequisites: BME:2200.

BME:5252 Health Informatics II  
Selected health informatics initiatives, including computer-based patient records, physiologic monitoring, networking, imaging, virtual reality; participation in an interdisciplinary project team focused on an informatics innovation; application and research seminars. Same as RSNM:5301, IE:5870, IGPI:5210.
Graduate Seminars, Advanced Topics, Research

BME:5010 Seminar in Biomedical Engineering
0 s.h.
Presentation of recent advances in biomedical engineering. Requirements: graduate standing.

BME:5998 Individual Investigations: Biomedical Engineering
arr.
Individual projects for biomedical engineering graduate students, such as laboratory study, engineering design project, analysis and simulation of an engineering system, computer software development, research. Requirements: graduate standing.

BME:5999 Research: Biomedical Engineering M.S. Thesis
arr.
Experimental and/or analytical investigation of an approved topic for partial fulfillment of the requirements for the M.S. with thesis in biomedical engineering. Requirements: graduate standing.

BME:7998 Advanced Individual Investigations in Biomedical Engineering
arr.
Advanced individual projects such as laboratory study, engineering design projects, analysis and simulation of an engineering system, computer software development, research.

BME:7999 Research: Biomedical Engineering Ph.D. Dissertation
arr.
Experimental and/or analytical investigation of an approved topic for partial fulfillment of requirements for Ph.D. with thesis in biomedical engineering.
Chemical and Biochemical Engineering

Chair
• C. Allan Guymon

Undergraduate major: chemical engineering (B.S.E.)
Graduate degrees: M.S. in chemical and biochemical engineering; Ph.D. in chemical and biochemical engineering
Faculty: http://www.engineering.uiowa.edu/cbe/people/faculty-cbe
Web site: http://www.engineering.uiowa.edu/cbe/

Chemical and biochemical engineers combine engineering principles with knowledge of mathematics and specific sciences—chemistry, the biological sciences, and physics—to develop and operate processes that convert raw materials into products that benefit society. For example, biochemical engineers might develop and operate processes to convert switchgrass into biofuels or to mass produce an antibiotic.

Chemical and biochemical engineers engage in a wide variety of activities that benefit the global community. Fuel cells, solar energy, and biorenewable fuels (e.g., biodiesel or ethanol) fall within the realm of chemical engineering. Chemical engineering distinguishes itself from other engineering professions with its reliance on chemical reactions and physicochemical transformations to produce a wide variety of important materials and products. Biochemical engineers are involved in a wide variety of industrial biocatalytic, fermentation, and cell culture processes that generate products ranging from the high fructose corn syrup in soft drinks to recombinant human insulin.

As part of their training, chemical and biochemical engineers learn ethical design and a respect for the larger issues in any design, such as community health, employee safety, and the global implications of the design. The University of Iowa’s curriculum emphasizes chemical process safety and environmentally conscious chemical engineering design.

Chemical and biochemical engineers work in a wide range of industries, including petroleum and specialty chemical production, polymer and plastic production, food processing, energy, microelectronics production, pharmaceutical production, biochemical processing, and environmental compliance. Potential jobs include production, process development, plant design and construction, and fundamental research. Many experienced chemical and biochemical engineers move through management ranks to high-level administrative positions.

Undergraduate Program of Study
• Major in chemical engineering (Bachelor of Science in Engineering)

The undergraduate program in chemical engineering produces graduates who have a strong foundation of scientific and technical knowledge and are equipped with problem solving, teamwork, and communication skills that will serve them throughout their careers, consistent with the following educational objectives.

Within a few years of graduation, the program’s graduates will:
• attain careers as practicing chemical engineers in fields such as pharmaceuticals, microelectronics, chemicals, polymers/advanced materials, food processing, energy, biotechnology, and environmental engineering;
• attain advanced studies in disciplines such as chemical engineering, environmental engineering, medicine, law, and business; and
• assume professional leadership roles.

The undergraduate program in chemical engineering uses the following methods and strategies to achieve its educational objectives:
• foster a personalized, supportive environment for all students by taking advantage of the unique combination of a small college atmosphere in a major research university;
• enrich the undergraduate experience through cultural diversity and international opportunities or experiential learning;
• provide a solid foundation and understanding of the fundamental principles of mathematics, science, and engineering;
• provide students with experience in learning and applying tools (e.g., computer skills) to solve theoretical and open-ended chemical engineering problems;
• provide students with opportunities to participate in multidisciplinary teams and to develop and practice written and oral communication skills, both within the team and to a broader audience;
• provide students with opportunities to design and conduct chemical engineering experiments and to design systems, components, and chemical processes to meet specific needs and constraints; and
• provide a contemporary grounding in professional responsibility, including ethics, the global and societal impact of engineering decisions, and the need for lifelong learning.

Bachelor of Science in Engineering

The Bachelor of Science in Engineering requires a minimum of 128 s.h. The major in chemical engineering provides a broad education at the leading edge of technology. It emphasizes fundamental concepts, problem solving, laboratory techniques, and communication skills. The biological sciences join physics, chemistry, and mathematics as foundation disciplines for chemical engineering.

All engineering students complete the B.S.E. core requirements, which include RHET:1030 Rhetoric; ENGR:1100 Engineering Problem Solving I and ENGR:1300 Engineering Problem Solving II; and courses in chemistry, engineering mathematics and fundamentals, and physics. They must earn a grade of C-minus or higher in the core requirements MATH:1550 Engineering Mathematics I: Single Variable Calculus and MATH:1560 Engineering Mathematics II: Multivariable Calculus.

They also complete the curriculum designed for their major program, which covers four major stems: mathematics and basic sciences, engineering topics, an elective focus area, and the general education component.
(15 s.h. of humanities and social science courses). For information about the curriculum stems, see Bachelor of Science in Engineering (p. 841) in the Catalog.

Seminars do not count toward the 128 s.h. required for the degree.

For chemical engineering students, the sophomore, junior, and senior years emphasize chemical engineering courses such as process calculations, engineering flow and heat exchange, chemical engineering thermodynamics, mass transfer and separations, chemical reaction engineering, chemical process safety, chemical engineering laboratories, biochemical engineering, process dynamics and control, and process design. Experience in instrumentation, analysis, and design is obtained through an integrated laboratory program. Routine use is made of computer-based data analysis, simulation, and design.

Students are required to participate in at least one enriching activity, which may include a research experience, a cooperative education or internship experience, study abroad, completion of the Certificate in Technological Entrepreneurship (p. 914), or other approved experiences.

Chemical engineering students may gain depth of knowledge related to a career path through their selection of science, engineering, humanities, and social science electives. Several preapproved elective focus areas may help students define potential careers.

Students must select elective focus area courses according to guidelines established by the Department of Chemical and Biochemical Engineering. See "Elective Focus Area" after the following curriculum list.

The following study plan includes the B.S.E. core requirements and the curriculum for the chemical engineering major. Some courses in this plan are prerequisites for others. Students must complete a course's prerequisites before they may register for the course. Those who take courses in the order below satisfy the prerequisite requirements automatically.

### FIRST YEAR

#### First Semester
- ENGR:1000 Engineering Success for First-Year Students (credit does not count toward B.S.E. degree) 1 s.h.
- ENGR:1100 Engineering Problem Solving I 3 s.h.
- CHEM:1110 Principles of Chemistry I 4 s.h.
- MATH:1550 Engineering Mathematics I: Single Variable Calculus 4 s.h.
- RHET:1030 Rhetoric 4 s.h.

#### Second Semester
- CBE:1000 CBE Departmental Seminar 1 s.h.
- ENGR:1300 Engineering Problem Solving II 3 s.h.
- CHEM:1120 Principles of Chemistry II 4 s.h.
- MATH:1560 Engineering Mathematics II: Multivariable Calculus 4 s.h.
- MATH:2550 Engineering Mathematics III: Matrix Algebra 2 s.h.
- PHYS:1611 Introductory Physics I 4 s.h.

### SECOND YEAR

#### First Semester
- CBE:2105 Process Calculations 3 s.h.
- ENGR:2110 Engineering Fundamentals I: Statics 2 s.h.
- ENGR:2120 Engineering Fundamentals II: Electrical Circuits 3 s.h.
- ENGR:2130 Engineering Fundamentals III: Thermodynamics 3 s.h.
- MATH:2560 Engineering Mathematics IV: Differential Equations 3 s.h.

#### Second Semester
- CBE:3000 Professional Seminar: Chemical Engineering 1 s.h.
- CBE:3105 Chemical Engineering Thermodynamics 3 s.h.
- CBE:3110 Engineering Flow and Heat Exchange 3 s.h.
- CHEM:2210 Organic Chemistry I 3 s.h.
- General education component course 3 s.h.
- Statistics elective 3 s.h.

### THIRD YEAR

#### First Semester
- CBE:3000 Professional Seminar: Chemical Engineering 1 s.h.
- CBE:3115 Mass Transfer and Separations 3 s.h.
- CBE:3150 Thermodynamics/Transport Laboratory 3 s.h.
- ENGR:2720 Materials Science 3 s.h.
- CHEM:2220 Organic Chemistry II 3 s.h.
- CHEM:2410 Organic Chemistry Laboratory 3 s.h.

#### Second Semester
- CBE:3000 Professional Seminar: Chemical Engineering 1 s.h.
- CBE:3120 Chemical Reaction Engineering 3 s.h.
- CBE:3125 Chemical Process Safety 3 s.h.
- CBE:3155 Chemical Reaction Engineering/ Separations Laboratory 2 s.h.
- General education component courses 6 s.h.
- Elective focus area course 3 s.h.

### FOURTH YEAR

#### First Semester
- CBE:3000 Professional Seminar: Chemical Engineering 1 s.h.
- CBE:4105 Process Dynamics and Control in Design 3 s.h.
- CBE:4109 Chemical Engineering Process Design I 2 s.h.
- CBE:5205 Introduction to Biochemical Engineering 3 s.h.
- Advanced chemical science elective 3 s.h.
- Elective focus area courses 6 s.h.
Current research strengths of the Department of Chemical and Biochemical Engineering are in the areas of global and regional atmospheric modeling, biomaterials and medical engineering, cellular engineering, photopolymerization, biocatalysis, and biofuels.

**BIOCHEMICAL ENGINEERING**

Biochemical engineering involves the industrial application of enzymes, microorganisms, cells, and tissues for production of chemicals, pharmaceuticals, and other materials of commercial value.

The department is working to solve problems with the use of insect cell culture for recombinant protein and viral insecticide production. Research is being conducted to improve the quality and quantity of recombinant proteins produced in large-scale bioreactors. In addition, a continuous viral insecticide production system is being developed for the large-scale production of these environmentally safe alternatives to chemical insecticides. The insect cell/baculovirus system is being used as a model system to investigate the role of oxidative stress in viral cytotoxicity.

Carbon dioxide accumulation, which commonly occurs in large-scale bioreactor systems, affects insect cell growth. The department's researchers are investigating the corresponding effect on insect cell growth and the baculovirus infection process.

The department works to design technologies for the characterization and use of extremophiles, organisms that possess unusual abilities to survive in harsh chemical environments. In these studies, novel bioreactor systems that can withstand extremes of temperature, pressure, pH, and salinity are being developed. Extremophile strategies for survival also are being studied, with the aim of discovering unique enzymes for industrial application as well as evaluating molecular interactions that govern protein stability under extreme conditions.

In addition to the study of natural extremophiles, efforts to engineer stability in biocatalysts for industrial processing are under way. Novel solvent-tolerant enzymes and organisms for environmentally beneficial chemical reactions are being generated using molecular biology tools. Combinations of chemical and biological processing are being used to produce valued chemicals from renewable feedstocks. This work contributes to the interdisciplinary training of engineers and scientists to address the challenges of minimizing and cleaning up environmental pollution, while maximizing the economic benefits of chemical processing.

The department also conducts research in structural enzymology, molecular mechanisms of host-pathogen interactions, and biocatalysis. The laboratory uses biophysical, structural, and molecular biology techniques to understand the details of enzyme action. This information is used to design and engineer biocatalysts for the production of chiral compounds. Work also is under way on cellular recognition and signaling processing during infection and inflammation. Knowledge gained from these studies aids the design of drugs and biological sensors for bacterial presence.

The integration of biotechnology with traditional chemical engineering has led to an interdisciplinary area involving other engineering departments and the Departments of Chemistry and Biology (College of Liberal Arts and Sciences); the Departments of Biochemistry and Microbiology and the Free Radical and Radiation Biology Program (Carver College of Medicine); and the College...
Chemical and Biochemical Engineering

1,500-liter fermentor. This focus includes involvement in the University’s Center for Biocatalysis and Bioprocessing, whose fermentation capabilities are highlighted by its 1,500-liter fermentor.

BIOMEDICAL RESEARCH
The department’s research involves a multidisciplinary approach to solving problems in the medical field, particularly in drug delivery and biomaterials.

Researchers are working to develop safe delivery systems that target drugs precisely in the human body and avoid premature metabolism or elimination. To treat respiratory infections, micron-sized particles are being engineered with properties that enhance aerodynamic performance, particle stability, and targeting within the respiratory tract. Polymeric vehicles are being designed to provide sustained protection and prevention against cancers by kick-starting the immune system. Finally, work is under way to overcome barriers to efficient delivery of DNA, with the potential to provide cures for genetic disorders such as cystic fibrosis and X-Linked Severe Combined Immunodeficiency (X-SCID). This work brings together collaborators from the Carver College of Medicine, the Colleges of Dentistry and Pharmacy, and the Departments of Chemical and Biomedical Engineering.

In the biomaterials realm, new materials are being developed that can interact with the human body to perform certain functions while maintaining compatibility. A project with the Department of Ophthalmology and Visual Sciences involves development of biodegradable stent materials to alleviate a serious eye disease induced by a blood clot in the central retinal vein. Research with the Department of Otolaryngology—Head and Neck Surgery is exploring the development of photo-patterned surfaces for directed growth of cells to improve cochlear implants. Current research in the tissue engineering field applies microfabrication techniques to develop scaffolds that are biodegradable and biocompatible with cell-interactive properties, and that directly incorporate controlled-release functionality within the scaffold.

The department also conducts research that is focused on self-assembling systems, rational design of novel drug and gene delivery systems, and development of sophisticated scaffolds for tissue-specific regeneration. In tissue engineering, microfabrication techniques are applied to novel biomaterials to provide spatial control over tissue formation and to integrate minimally invasive scaffold delivery strategies. In drug and gene delivery, researchers are exploring the synergistic application of degradable particle technology, CpG oligonucleotides, and heat-shock protein therapy for generating sustained, stronger immune responses against carcinomas.

Students involved in animal research have access to the University’s Office of Animal Resources, which is adjacent to the University of Iowa Hospitals and Clinics.

ENERGY AND ENVIRONMENT
Chemical engineers are well-suited to make major contributions toward meeting challenges for the environment, energy, and sustainable development. The Department of Chemical and Biochemical Engineering has an active research program in the environmental areas of air pollution, biofuels, atmospheric chemistry, atmospheric CO2 fluxes, environmental change, bioremediation, and the design of new environmentally compatible technologies. Particular emphasis is placed on the chemistry and physics of local, regional, and global air-pollution problems. Research in support of this activity includes high-speed computing and detailed sensitivity analysis.

This work involves three centers and institutes on campus. The Center for Global and Regional Environmental Research brings together University scientists and scholars from more than 20 disciplines, including chemistry, civil and environmental engineering, geography, geology, law, and medicine. The center’s chief area of concern is environmental change. Chemical and biochemical engineering researchers interact with scientists at IIHR—Hydroscience & Engineering, a research institute focusing on applied fluid mechanics; their collaborations involve environmental fluid mechanics and air pollution field studies. The Nanoscience and Nanotechnology Institute provides an interdisciplinary home for chemical and biochemical researchers working on the development, application, and environmental and health effects of nanomaterials.

PHOTOPOLYMERIZATION
Photopolymerizations are chain reactions in which a liquid monomer is converted to a solid, durable polymer in a process triggered by light of the appropriate wavelength. The use of light, rather than heat, to drive a polymerization reaction offers advantages in developing new processes or products.

Photopolymerizations provide both spatial control and temporal control of reactions, since light can be directed to locations of interest in the system and is easily shuttered on or off. Photopolymerizations also provide solvent-free formulations, which reduce the emissions of volatile organic pollutants, and they exhibit extremely rapid reaction rates. These advantages have led to tremendous growth in the application of photopolymerizations in the private sector, but much of this growth has occurred without a fundamental understanding of the underlying chemical processes.

The department’s research in this area focuses on comprehensive characterization of the kinetics, mechanisms, structure, and properties of photopolymerizations. Work includes the following types of studies: characterization of the photochemical processes by which polymerizations may be initiated; kinetic characterization of cationic photopolymerization; development of methods for photopolymerization of thick polymers and composites; development of photopolymerization systems based upon agricultural feedstocks; new methods for monitoring high-speed photopolymerization reactions; nanostructured materials through photopolymerization; biomedical devices formed by photopolymerization; and influence of order on photopolymerization reactions.

Chemical and biochemical engineering researchers are members of the Photopolymerization Center, an industry/university cooperative center on fundamentals and applications of photopolymerization. The center brings together experts from the University of Iowa, the University of Colorado, and member companies such as 3M, DSM, and Boeing. In addition, interdisciplinary collaborations are fostered on campus through the Optical Science and Technology Center, which oversees a seminar series, an annual symposium, training at the
Microfabrication Facility, and equipment use in shared facilities.

**Master of Science**

The Master of Science program in chemical and biochemical engineering requires a minimum of 30 s.h. of graduate credit, with or without thesis. All M.S. students must earn at least 24 s.h. in approved graduate-level course work; courses numbered below 3000 do not count toward this requirement. Thesis students earn 6 s.h. in CBE:5999 M.S. Thesis Research: Chemical and Biochemical Engineering. Nonthesis students earn 6 s.h. in additional approved course work and are required to complete four core courses with a g.p.a. above 3.25 for those courses.

M.S. students must maintain a graduate g.p.a. of at least 3.00. Each thesis student must pass a final M.S. examination.

There is no world languages requirement.

Graduate students who receive assistantships, fellowships, or other financial support awarded with the understanding that they will pursue an advanced degree with thesis may not elect the nonthesis option.

Graduate students in the nonthesis program may petition for entry into the thesis program or the Ph.D. program by requesting a change of status through the Graduate College. The request is reviewed by the graduate admissions committee. If approved by the committee, it is forwarded to the chemical and biochemical engineering faculty for final approval. Students then are assigned to research advisors as though they were newly admitted graduate students. For a detailed description of program requirements, see CBE Graduate Program on the Department of Chemical and Biochemical Engineering web site.

**Doctor of Philosophy**

The Doctor of Philosophy program in chemical and biochemical engineering requires a minimum of 72 s.h. of graduate credit. However, the degree is granted primarily on the basis of achievement rather than on the accumulation of semester hours. Candidates usually are expected to have completed three academic years in residence, or two years if they already hold a recognized master's degree.

All candidates must complete a core course requirement, which consists of a course in transport phenomena, a course in reaction engineering, a course on proposal writing, and a thermodynamics course, as well as six additional courses (total of 30 s.h.). There is no world languages requirement.

Ph.D. candidates must maintain a graduate g.p.a. of at least 3.25.

All doctoral students are required to satisfy a qualifying requirement and pass a comprehensive examination before they can become candidates for the degree. The Ph.D. comprehensive examination is the presentation and defense of the candidate's Ph.D. research proposal. These examinations are arranged by members of the examining committee and may be repeated at the committee's discretion. Comprehensive examination policies are published in the Manual of Rules and Regulations of the Graduate College. A final examination, which is a defense of the thesis, completes the doctoral program. For a detailed description of program requirements, see CBE Graduate Program on the Department of Chemical and Biochemical Engineering web site.

**Admission**

Applicants must meet the admission requirements of the Graduate College; see the Manual of Rules and Regulations of the Graduate College.

Applicants should have a B.S. in chemical engineering or related discipline, with satisfactory grades, from a recognized college or university in the United States, and a g.p.a. of at least 2.80. Students who do not meet these requirements may be granted conditional admission, with the department chair's approval. Graduates of non-U.S. universities may be accepted, depending on evaluation of their records.

Applicants must submit their verbal and quantitative scores on the Graduate Record Examination (GRE) General Test with their applications.

Graduate courses in chemical and biochemical engineering are designed for students who have an undergraduate background in chemical engineering. Exceptional students from other areas also may apply for admission to the M.S. or the Ph.D. program in chemical and biochemical engineering. If admitted, they may be required to take specific undergraduate courses to prepare them for graduate course work.

**Financial Support**

A number of fellowships, assistantships, and scholarships are awarded on a competitive basis to graduate students who qualify.

Graduate students have the opportunity to receive interdisciplinary research training in several fellowship programs administered through the Center for Biocatalysis and Bioprocessing (CBB). The program provides research training in areas that combine basic and applied research. Each year the center offers fellowships to doctoral students in biotechnology. These are funded by grants from the National Institute of General Medical Sciences, National Institutes of Health (NIH), National Science Foundation (NSF), and the CBB with funding from the State of Iowa. Through these programs, chemical and biochemical engineering students interact with students and faculty members from biochemistry, biology, chemistry, civil and environmental engineering, medicinal and natural products chemistry, and microbiology.

**Facilities and Laboratories**

**Undergraduate Core**

**MATERIALS SCIENCE LABORATORY**

The Materials Science Laboratory is equipped with optical microscopes and facilities for metallographic preparation. Mechanical tensile testing instruments, heat treatment and sintering furnaces, and hardness testing machines also are available. Teaching aids include metallography specimen kits and crystallography packages.

**Required Undergraduate Laboratories**

**CHEMICAL ENGINEERING LABORATORY**

The Chemical Engineering Laboratory provides instruction for undergraduate students in CBE:3150 Thermodynamics/
Transport Laboratory and CBE:3155 Chemical Reaction Engineering/Separations Laboratory. It is equipped for experimentation in thermodynamics, fluid flow, heat transfer, mass transfer, chemical reaction engineering, and separations. The laboratory includes pilot plant equipment, such as a distillation column, wiped film evaporator, shell-and-tube heat exchanger, jacketed kettle, and agitated extractor. Other equipment includes a concentric tube heat exchanger, reciprocating plate extractor, membrane gas separator, fluid friction apparatus, and heat conduction apparatus. Analytical equipment includes gas chromatographs, UV/visible spectrophotometers, polarimeters, and refractometers.

The laboratory is continuously updated to reflect advances at the forefront of chemical engineering technology. Additionally, a wide array of small equipment is available to support laboratory projects and demonstrations in chemical engineering courses and for use by students performing independent investigations.

**CHEMICAL PROCESS SAFETY LABORATORY**

The Chemical Process Safety Laboratory is an integral part of CBE:3125 Chemical Process Safety. It is equipped with two Miniflash automatic flash point tester (closed cap), an advanced reactive system screening tool (ARSSST), a minimum ignition energy (MIE) apparatus, a flammability chamber, a modified Hartmann tube, a Hartmann bomb, a liquid conductivity apparatus, a powder changeability apparatus, a powder volume resistivity apparatus, a Van de Graaff generator, two high impedance electrometers, a field meter, a Faraday cage, and relief sizing software. This equipment is used in a series of experiments to demonstrate the principles of flammability, reactivity, explosions, relief valve sizing, and electrostatics relevant to industry.

**BIOCHEMICAL ENGINEERING LABORATORY**

The Biochemical Engineering Laboratory is an integral part of CBE:5205 Introduction to Biochemical Engineering. It is equipped with two controlled New Brunswick BioFlo/CelliGen 115 bioreactors, three New Brunswick C76 Water Bath Shakers, a UV/visible spectrometer, a Thermo Scientific Nanodrop 3300 fluorospectrometer, and a YSI 2700 Select Biochemistry Analyzer. This equipment is used to study the growth and metabolism of microorganisms and recombinant protein production.

**PROCESS CONTROL LABORATORY**

The Process Control Laboratory is a modern, computer-based instructional laboratory that is integral to CBE:4105 Process Dynamics and Control in Design. The laboratory consists of computer control of a shell-and-tube heat exchanger, and a level-and-flow control process rig with state-of-the art industrial control interfaces.

The Computer Control Laboratory offers an ensemble of learning experiences with the same equipment.

Additional laboratories provide instruction in the use of process simulators that provide analogies and better insight into the control process. Topics include determination of the gain and time constants for single-capacitance systems; determination of gain, time constant, and damping factor of second-order processes; determination of open-loop and closed-loop response to step-and-ramp changes in input for single-capacitance and mult-capacitance processes; approximations of mult-capacitance systems as first-order and second-order processes with dead time; analysis of instrumentation characteristics and transfer functions; tuning and optimization of feedback control parameters (P, PI, PID); system identification through frequency response methods; and determination of system stability.

Experimental arrangements in the laboratory are simple enough in design to be easily understood, yet complicated enough to help students appreciate system characteristics inherent in industrial processes (e.g., large time lags, error in parameter estimation).

**Graduate Facilities and Laboratories**

The department offers a wide variety of facilities to support and develop research activities.

**AIR POLLUTION COMPUTATIONAL, FIELD, AND LABORATORY STUDIES**

The department maintains extensive facilities for computational, field, and laboratory studies of air pollution, carbon cycle gases, aerosols, and nanoparticles at the Center for Global and Regional Environmental Research (CGRER). The center occupies 5,000 square feet of laboratory and office space on the fourth floor of the Iowa Advanced Technology Laboratories.

CGRER houses one R2 ImmersaDesk Portable Large Scale Visualization System and is linked on campus to two more R2 ImmersaDesk units.

The center’s computer laboratory for environmental and spatial data analysis provides numerous Windows and UNIX workstations, sophisticated software packages, and workstations and a file server necessary to run intensive visualization programs. The network backbone is University supported with high-speed wireless throughout. A variety of digital environmental databases and an extensive library of documentation and related references are available. There are 4 Beowulf Linux clusters on site and Linux clusters of 4, 16, 18, and 20 nodes for large computations and data assimilation. CGRER retains 15 TB of redundant storage and 50 TB of total storage; local storage space is scalable and expandable. A variety of software packages and programming languages are available for data analysis and display, including Arc/Info, Arcview, NCAR Graphics, Matlab, S-Plus, and Vis5d, as well as geographical information software. The ESRI software suite is part of a University-wide site license.

Laboratory and field equipment includes aerosol samplers, including scanning mobility particle sizers for aerosols from 3 nm to 1 micron with time resolution to 30 seconds; aerosol particle sizers for aerodynamic measurements of in situ particles with time resolution to 1 second; and varied condensation particle counters for measuring total particle counts. Several hygroscopic tandem differential mobility analyzers are used, as well as varied aerosol generation devices and unique aerosol inlets for RH and temperature modification and control. Cloud droplet number can be measured in the lab or in the field using a Droplet Measurement Technologies cloud condensation nuclei detector. Advanced computer control of instruments is available through Labview.

Selected instruments are field deployable in a custom air-conditioned trailer. Through collaboration with the IIHR—Hydroscience & Engineering, access to micrometeorology sensors, 1-D and 2-D elastic and Raman LIDAR, and gas sensors is available, including multichannel ammonia monitors.
BIOCHEMICAL ENGINEERING
Biochemical engineering laboratories provide facilities for preparation of biological media and cultivation of organisms as well as for separation and analysis of biomolecules. This equipment includes biological incubators and floor incubator shakers, agitated and airlift bioreactors, light microscopes, autoclaves, Vi-Cell cell counter, thermocycler for PCR amplification of DNA, high- and low-speed centrifuges, UV-Vis spectrophotometers, a lyophilizer, biological safety cabinets, and an anaerobic glove box. Phase-contrast and epifluorescence microscopes, gel electrophoresis systems, gas chromatography units with flame ionization and electron capture detectors, and several high-performance liquid chromatography systems with refractive index and photodiode array detectors are available for characterization of microorganisms and constituent biomolecules. In addition, the lab has multiple extremophile cultivation systems including a high-pressure (0.1-100 MPa) cell cultivation system, several continuous cultivation systems, and high-temperature oil bath shakers for physiological studies of extremophilic microbes.

Through collaborative research agreements, graduate students also have access to specialized facilities for electron microscopy, large-scale fermentation, protein structure, recombinant DNA research, and tissue culture/hybridoma; the Flow Cytometry Facility; and the High Resolution Mass Spectrometry Facility.

BIOMEDICAL ENGINEERING
The biomedical engineering laboratories house particle technology equipment including microemulsion equipment for drug encapsulation, sonicators, benchtop scale spray dryers, laser diffraction particle sizer, zetapotentiometer; DNA preparation equipment, gel electrophoresis apparatus; interfacial stress rheometer, surface tensiometer, UV-Vis/fluorescent plate reader; high-performance liquid chromatograph, luminometer, lyophilizer, custom-built simulated cough machine, microscopes, incubators, wet chemistry equipment, rotary shakers, incubated plate shakers, autoclave, centrifuges, and laboratory computers. Cell culture and bacterial culture facilities are housed adjacent to the laboratories.

Graduate students also have access to core research facilities including the Central Microscopy Research Facility, Flow Cytometry Facility, Iowa Institute of Human Genetics, Electron Spin Resonance Facility, Nuclear Magnetic Resonance Facility, High Resolution Mass Spectrometry Facility, and the Center for Gene Therapy.

COMPUTER FACILITIES
The departmental computer facilities contain a variety of graphics workstations, printers, and microcomputers. The department is supported by the College of Engineering Computer Services, which maintains a large network of high-performance UNIX and Windows XP workstations along with extensive commercial and public domain software. The department also has access to the University's central research facility in high-speed vector computation. This facility has SGI Power Challenge minisupercomputers and provides nodes for external links for access to supercomputers.

FUNDAMENTALS AND APPLICATIONS OF PHOTOPOLYMERIZATION
The Photopolymerization Center was established to advance fundamental understanding of the kinetics and mechanisms of photopolymerizations. To this end, the center provides unique opportunities for collaborations by industrial and academic investigators to explore photopolymerization processes and develop novel applications based on photopolymerizations. The center provides equipment and instrumentation for the characterization of photopolymerization systems on the molecular, microscopic, and macroscopic levels. Center researchers pursue understanding of fundamental photophysical and photochemical processes involved in the photoinitiation reaction; characterization of high-speed propagation and termination kinetics that lead to the polymer structure; and evaluation of material properties through the course of the photopolymerization reaction. Both radical and cationic photopolymerizations are studied with state-of-the-art experimental techniques to elucidate the complex chemical and physical mechanisms that control the initiation, propagation, and termination of the active centers.

Courses
General Topics

CBE:0000 Cooperative Education Training Assignment: Chemical Engineering
Chemical engineering students participating in the Cooperative Education Program register for this course during work assignment periods; registration provides a record of participation in the program on the student's permanent record. Requirements: admission to Cooperative Education Program.

CBE:0002 Half-time Cooperative Education Training Assignment: Chemical Engineering
Registration for work assignment periods; for students participating in the Cooperative Education Program.

CBE:1000 CBE Departmental Seminar
Introduction to the profession and the department; presentations by guest speakers, visits to laboratories and industries.

CBE:1180 First-Year Seminar
Small discussion class taught by a faculty member; topics chosen by instructor; may include outside activities (e.g., films, lectures, performances, readings, visits to research facilities, field trips). Requirements: first- or second-semester standing.

CBE:2030 Energy and Society
History of energy development and use throughout the world; how energy has affected the development of human societies; societal impact of engineering advances; current state of energy consumption worldwide, including distribution of energy sources, global variations in consumption, advantages and disadvantages of current energy sources; role of fossil fuel consumption in global climate change, potential scenarios for the future of energy.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CBE:2105</td>
<td>Process Calculations</td>
<td>3 s.h.</td>
<td>Fundamental principles of chemical process analysis, including material and energy balances for single-unit and multiple-unit processes, analysis of reactive and nonreactive systems, introduction to equations of state, thermodynamics of multiphase systems. Prerequisites: MATH:1550.</td>
</tr>
<tr>
<td>CBE:3000</td>
<td>Professional Seminar: Chemical Engineering</td>
<td>1 s.h.</td>
<td>Professional aspects of chemical engineering presented through lectures and discussions by guest speakers, field trips, films, panel discussions. Prerequisites: CBE:2105. Requirements: sophomore standing.</td>
</tr>
<tr>
<td>CBE:3105</td>
<td>Chemical Engineering Thermodynamics</td>
<td>3 s.h.</td>
<td>Applications of thermodynamic principles to chemical and physical processes; prediction of material properties; phase and chemical equilibria applied to mixtures and reacting systems. Prerequisites: ENGR:2130. Corequisites: CBE:2105.</td>
</tr>
<tr>
<td>CBE:3120</td>
<td>Chemical Reaction Engineering</td>
<td>3 s.h.</td>
<td>Application of chemical reaction kinetics to design of chemical reactors: batch reactors, mixed flow reactors, plug flow reactors; reversible and irreversible single reactions; parallel, series, and mixed reactions; temperature and pressure effects on reactor design; heterogeneous catalysis; transport in porous catalysts. Prerequisites: CBE:3115.</td>
</tr>
<tr>
<td>CBE:3155</td>
<td>Chemical Reaction Engineering/ Separations Laboratory</td>
<td>2 s.h.</td>
<td>Experimental design, data collection techniques, report writing, oral presentations; laboratory investigations of chemical reaction engineering and separations; experiments with plug flow and batch reactors, distillation, evaporation, membrane separation. Prerequisites: CBE:3115 and CBE:3150. Corequisites: CBE:3120.</td>
</tr>
<tr>
<td>CBE:3998</td>
<td>Individual Investigations: Chemical Engineering</td>
<td>arr.</td>
<td>Individual projects for chemical engineering undergraduate students, such as laboratory study, engineering design project, analysis and simulation of an engineering system, computer software development, research.</td>
</tr>
<tr>
<td>CBE:4195</td>
<td>Senior Enriching Activities Seminar</td>
<td>0 s.h.</td>
<td>Aspects of chemical engineering education, including multidisciplinary team skills, understanding the impact of engineering practice locally and globally. Corequisites: CBE:4110.</td>
</tr>
<tr>
<td>CBE:4410</td>
<td>Sustainable Systems</td>
<td>3 s.h.</td>
<td>New and emerging concepts in sustainable systems design and assessment. Same as CEE:4107.</td>
</tr>
<tr>
<td>CBE:5104</td>
<td>Introduction to Literature Review and Technical Writing</td>
<td>3 s.h.</td>
<td>Review of technical literature, how to contribute to it; produce and present orally a peer-reviewed-journal-quality review article; brainstorming, group writing, research ethics, plagiarism. Recommendations: nonthesis track graduate standing.</td>
</tr>
<tr>
<td>CBE:5105</td>
<td>Introduction to Literature Review and Proposal Writing</td>
<td>3 s.h.</td>
<td>Tools for reviewing literature, skills for critical reading of publications, training in successful proposal writing; experience drafting a proposal that can be used as a starting point for the Ph.D. comprehensive.</td>
</tr>
<tr>
<td>CBE:5110</td>
<td>Intermediate Thermodynamics</td>
<td>3 s.h.</td>
<td>Fundamental principles of thermodynamics as applied to phase equilibria; properties of fluids, first and second law, variable composition systems, behavior of real fluids, mathematical techniques for solution thermodynamics. Requirements: CBE:3105 or ME:3040 or graduate standing. Same as ME:5210.</td>
</tr>
<tr>
<td>CBE:5199</td>
<td>Contemporary Topics: Chemical and Biochemical Engineering</td>
<td>arr.</td>
<td>Research techniques for graduate students in chemical and biochemical engineering. Requirements: graduate standing.</td>
</tr>
<tr>
<td>CBE:5240</td>
<td>CEBC Colloquium</td>
<td>1 s.h.</td>
<td>Sustainable development issues addressed by guest speakers from chemical industries; process economics, environmental impact assessment.</td>
</tr>
<tr>
<td>CBE:5390</td>
<td>Photopolymerization Topics</td>
<td>1 s.h.</td>
<td>Seminars presented by faculty members, research assistants, students.</td>
</tr>
<tr>
<td>CBE:5205</td>
<td>Introduction to Biochemical Engineering</td>
<td>3 s.h.</td>
<td>Biochemistry, cellular biology, recombinant DNA and hybridoma technologies; emphasis on engineering aspects of biotechnology, including enzyme kinetics, cell growth kinetics, transport phenomena in bioreactors, bioreactor design, bioseparations, formulation and sterilization of growth media, commercial applications of biotechnology. Prerequisites: CBE:3120.</td>
</tr>
</tbody>
</table>
CBE:5210 Bioseparations 3 s.h.
Unit operations used to isolate and purify biologically-derived chemicals, including flocculation, filtration, centrifugation, extraction, adsorption, chromatography, precipitation, crystallization, electrophoresis and cell disruption for intracellular product recovery.

CBE:5215 Advanced Biochemical Engineering 3 s.h.
Advanced concepts regarding behavior of biological systems used in modern technologies (e.g., food processing, pharmaceutical production, environmental remediation, chemical synthesis); principles of biochemical engineering applied to design, development, and analysis of processes that use biocatalysts; second in series addressing engineering aspects of biotechnology. Recommendations: CBE:5205.

CBE:5250 Introduction to Biocatalysis 3 s.h.
Applications of biological catalysis in varied industries; potential of biological catalysis to address future challenges in science and engineering.

CBE:5875 Perspectives in Biocatalysis 1-3 s.h.
Applied enzymology, protein design, structure-activity relationships, biosensor technology, microbial transformations, biodegradation of environmental pollutants. Requirements: graduate standing in a participating department supported by the Predoctoral Training Program in Biotechnology. Same as CHEM:5875, PHAR:5875, CEE:5875, MICR:5875, BIOC:5875.

CBE:6210 Biotechnology of Extremophiles 3 s.h.
Evolution and engineering of biocatalysis under extreme conditions; physiological, kinetic, and molecular behavior of systems that perform under extremes of temperature, pH, salinity, pressure, solvent concentrations.

Environmental Engineering
CBE:3160 Engineering Analysis of Alternative Energy Systems 3 s.h.
Engineering and sustainability analyses of conventional and emerging energy technologies; alternative energy sources, including biomass, wind, solar, geothermal; alternative energy carriers (transportation fuels), including varied biofuels, hydrogen, natural gas, ammonia. Prerequisites: ENGR:2130.

CBE:4459 Air Pollution Control Technology 3 s.h.
Sources, environmental and health impacts, regulations, modeling of air pollution; processes and alternative strategies for control; global climate considerations. Prerequisites: CEE:2150. Same as CEE:4159.

CBE:5152 Environmental Chemistry I 3 s.h.
Principles of general, physical, organic chemistry applied in water and air systems; emphasis on qualitative and quantitative understanding of chemical kinetics and equilibrium; acid-base reactions, complex formation, precipitation, dissolution, and oxidation-reduction reactions; organic nomenclature. Prerequisites: CHEM:1120. Same as CEE:5152.

CBE:5405 Green Chemical and Energy Technologies 3 s.h.
Strategies for pollution prevention for chemical processes studied at the macroscale (industrial sector), the mesoscale (unit operations), and the microscale (molecular level); case studies. Prerequisites: CBE:2105.

CBE:5425 Atmospheric Chemistry and Physics 3 s.h.
Principal chemical and physical processes affecting atmospheric trace gas and pollutant cycles; emphasis on atmospheric photochemistry, aerosol science, major sources and removal processes. Corequisites: CBE:3120. Same as CEE:5115.

Transport Phenomena
CBE:3110 Engineering Flow and Heat Exchange 3 s.h.
Fundamentals of fluid flow and heat transfer; fluid rheology, boundary layer theory, potential flow, dimensional analysis, laminar and turbulent flow in pipes, flow through packed beds, fluidized beds, pumps, flow measurement, filtration, heat exchanger design, and conductive, convective, and radiative heat transfer. Corequisites: CBE:2105.

CBE:3115 Mass Transfer and Separations 3 s.h.
Mechanisms of diffusional mass transfer; solution of industrial problems, including the design of distillation, extraction, absorption, adsorption, drying, membrane processes; mechanical separations. Prerequisites: CBE:3105 and CBE:3110.

CBE:5115 Transport Phenomena I 3 s.h.
Unified treatment of momentum, mass, energy transport in chemical engineering problems; use of vector and tensor notations in expressing equations of continuity, motion, energy.

CBE:6145 Diffusive Transport 3 s.h.
Diffusive transport of heat, mass, and momentum; phenomenological laws and analogies; analytical and numerical solution techniques; inverse heat conduction; multiphase and multicomponent systems. Prerequisites: ME:5145. Same as ME:6245.

Materials Science
Microscopy methods for research; all aspects of research, from sample preparation to imaging to data analysis; when to use a particular microscopy procedure; theory, operation, and application of scanning electron microscopy, scanning probe microscopy, laser scanning microscopy, X-ray microanalysis. Requirements: a physical science course. Same as ACB:4156, EES:4156.

CBE:5309 Polymer Fundamentals 1 s.h.
Basic knowledge of polymers required as a foundation for other UI courses on polymers: basic polymer terminology, polymer groups, polymerization mechanisms, molecular weight determination. Five weeks. Same as BME:5415.
CBE:5310 Polymer Science and Technology 3 s.h.
Uses, properties of industrially important polymeric materials; polymer chemistry, polymer structure, characterization, polymer processing. Prerequisites: CHEM:2220. Corequisites: CBE:3120.

CBE:5315 Polymer Chemistry 3 s.h.
Monomer reactivity and polymerization reactions; step, radical, ionic, and ring-opening polymerizations. Prerequisites: CHEM:2220.

Process Dynamics, Design, Analysis
CBE:3125 Chemical Process Safety 3 s.h.
Application of transport phenomena, thermodynamics, chemical kinetics to study of safety, health, loss prevention; government regulations, toxicology/industrial hygiene, relief sizing, runaway reactions, toxic release and dispersion models, source models, fires and explosions, risk assessment, hazard identification, case studies and accident investigation, incorporation of safety into design; laboratory experiments. Prerequisites: CBE:3115. Corequisites: CBE:3120.

CBE:4105 Process Dynamics and Control in Design 3 s.h.
Theory and application of process dynamics to the design of chemical process control systems; mathematical models of unit operations, transfer functions, feedback and feed-forward control, stability, instrumentation, digital control systems; computer methods, including simulation and commercial software use; laboratory focus on process analysis and design. Prerequisites: CBE:3120.

CBE:4109 Chemical Engineering Process Design I 2 s.h.
Engineering economics of process evaluation, including time value of money and bases for cost estimation; preliminary design of chemical process plants using computer-aided engineering. Prerequisites: CBE:3115 and CBE:3120 and CBE:3125.

CBE:4110 Chemical Engineering Process Design II 3 s.h.
Capstone chemical engineering course; design and optimization of chemical process plants; application of process calculations, thermodynamics, kinetics, process synthesis, energy efficiency in separations, heat-exchanger network synthesis, physical property estimation, safety, computer-aided design, unit operations theory, process control, and economics. Prerequisites: CBE:4109.

Graduate Seminars, Advanced Topics, Research
CBE:5000 Seminar in Chemical and Biochemical Engineering 1 s.h.
Presentation and discussion of recent advances and research in chemical and biochemical engineering by guest lecturers, faculty, students. Requirements: graduate standing.

CBE:5100 Graduate Professional Development Seminar 1 s.h.
Seminar participants work with a faculty member to select and attend eight hours of approved seminars and professional development trainings at the University of Iowa; final meeting of participants is held to share notable seminars; typical seminar series include College of Engineering lectures, departmental and research center graduate seminars, the CBE professional seminar series, offerings of the Center for Teaching and Learning. Requirements: CBE masters standing.

CBE:5998 Individual Investigations: Chemical and Biochemical Engineering arr.
Individual projects for chemical and biochemical engineering graduate students; may include laboratory study, engineering design project, analysis and simulation of an engineering system, computer software development, research. Requirements: graduate standing.

CBE:5999 M.S. Thesis Research: Chemical and Biochemical Engineering arr.
Experimental and/or analytical investigation of an approved topic for partial fulfillment of requirements for M.S. with thesis in chemical and biochemical engineering. Requirements: graduate standing.

CBE:7999 Research: Chemical and Biochemical Engineering Ph.D. Dissertation arr.
Experimental and/or analytical investigation of an approved topic for Ph.D. in chemical and biochemical engineering.
Civil and Environmental Engineering

Chair

- Michelle Scherer

**Undergraduate major:** civil engineering (B.S.E.)

**Graduate degrees:** M.S. in civil and environmental engineering; Ph.D. in civil and environmental engineering

**Faculty:** [http://www.engineering.uiowa.edu/cee/people/faculty-cee](http://www.engineering.uiowa.edu/cee/people/faculty-cee)

**Web site:** [http://www.engineering.uiowa.edu/cee/](http://www.engineering.uiowa.edu/cee/)

Civil engineering is one of the three largest fields of engineering. It traditionally has been concerned with infrastructure facilities that are both large in scale and essential to modern life. Civil and environmental engineering projects include transportation systems and their components, such as bridges, highways, public transit systems, railways, harbors, airports, and seaports; large-scale structures and office buildings that provide enclosed working and living space; environmental and hydraulic systems that provide clean water and air, including filtration plants and distribution systems for municipal and industrial water supplies, wastewater treatment plants, dams, levees, and irrigation systems.

Growth areas of civil and environmental engineering include water sustainability, infrastructure development, construction management, computer-aided design, hazardous waste management, and engineered environmental systems. In the future, civil and environmental engineers will be called upon to design structures for earth, prevent erosion and sedimentation of our rivers, predict effects of global climate change on the environment, provide modern and efficient transportation systems, and ensure the quality of our air and our surface waters and groundwaters.

In planning and design, civil and environmental engineers work with other engineers, architects, landscape architects, planners, economists, financiers, sociologists, lawyers, and other specialists as members of the design team. Some civil engineers work in engineering offices; others may be called upon to construct or supervise outdoor projects they have designed. These field assignments, many of which are in remote and fascinating parts of the world, are particularly appealing to many civil and environmental engineers. There also is significant potential for entrepreneurial work by civil and environmental engineers as they start their own companies.

**Undergraduate Program of Study**

- Major in civil engineering (Bachelor of Science in Engineering)

Within a few years of graduation, graduates of the program are expected to:

- be productive and contributing members of the civil and environmental engineering profession as practitioners, entrepreneurs, researchers or teachers, and be engaged in learning, understanding, and applying new ideas as the field develops;
- pursue advanced studies if qualified and interested; and
- promote the safety, health, and welfare of the public and environmental through professional practice and civic leadership.

**Bachelor of Science in Engineering**

The Bachelor of Science in Engineering requires a minimum of 131 s.h. Students majoring in civil engineering choose one of two subtracks: civil, which provides breadth in the discipline; or environmental, which provides for a concentration.

All engineering students complete the B.S.E. core requirements, which include RHET:1030 Rhetoric; ENGR:1100 Engineering Problem Solving I and ENGR:1300 Engineering Problem Solving II; and courses in chemistry, engineering mathematics and fundamentals, and physics. They must earn a grade of C-minus or higher in the core requirements MATH:1550 Engineering Mathematics I: Single Variable Calculus and MATH:1560 Engineering Mathematics II: Multivariable Calculus.

They also complete the curriculum designed for their major program, which covers four major stems: mathematics and basic sciences, engineering topics, an elective focus area, and the general education component (15 s.h. of humanities and social science courses). For information about the curriculum stems, see Bachelor of Science in Engineering (p. 841) in the Catalog.

Civil subtrack and environmental subtrack requirements are the same for the first semester of the first year but are different after that.

Students must select elective focus area courses according to guidelines established by the Department of Civil and Environmental Engineering. See “Elective Focus Area” after the following curriculum list.

The following study plan includes the B.S.E. core requirements and the curriculum for the civil engineering major. Some courses in the curriculum are prerequisites for others. Students must complete a course’s prerequisites before they may register for the course. Those who take courses in the order below satisfy the prerequisite requirements automatically.

**Civil Subtrack**

**FIRST YEAR**

**First Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGR:1000 Engineering Success for First-Year Students</td>
<td>1 s.h.</td>
</tr>
<tr>
<td>ENGR:1100 Engineering Problem Solving I</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>ENGR:1300 Engineering Problem Solving II</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>CHEM:1110 Principles of Chemistry I</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>MATH:1550 Engineering Mathematics I: Single Variable Calculus</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>RHET:1030 Rhetoric</td>
<td>4-5 s.h.</td>
</tr>
</tbody>
</table>

**Second Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGR:1300 Engineering Problem Solving II</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>MATH:1560 Engineering Mathematics II: Multivariable Calculus</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>MATH:2550 Engineering Mathematics III: Matrix Algebra</td>
<td>2 s.h.</td>
</tr>
</tbody>
</table>
**SECOND YEAR**

**First Semester**
- CEE:2015 Civil and Environmental Engineering Practice 2 s.h.
- ENGR:2110 Engineering Fundamentals I: Statics 2 s.h.
- ENGR:2120 Engineering Fundamentals II: Electrical Circuits 3 s.h.
- ENGR:2130 Engineering Fundamentals III: Thermodynamics 3 s.h.
- MATH:2560 Engineering Mathematics IV: Differential Equations 3 s.h.
- PHYS:1612 Introductory Physics II 3-4 s.h.

**Second Semester**
- CEE:1030 Introduction to Earth Science 3-4 s.h.
- CEE:2000 CEE Sophomore Seminar 0 s.h.
- CEE:2150 Natural Environmental Systems 3 s.h.
- ENGR:2710 Dynamics 3 s.h.
- ENGR:2750 Mechanics of Deformable Bodies 3 s.h.
- STAT:2020 Probability and Statistics for the Engineering and Physical Sciences 3 s.h.
- General education component course 3 s.h.

**THIRD YEAR**

**First Semester**
- CEE:3001 Leadership Seminar 1 s.h.
- CEE:3530 Soil Mechanics 3 s.h.
- CEE:3533 Principles of Structural Engineering 3 s.h.
- CEE:3763 Principles of Transportation Engineering 3 s.h.
- ENGR:2510 Fluid Mechanics 4 s.h.
- Elective focus area course 3 s.h.

**Second Semester**
- CEE:3002 Professional Skills Seminar 1 s.h.
- CEE:3155 Principles of Environmental Engineering 4 s.h.
- CEE:3371 Principles of Hydraulics and Hydrology 3 s.h.
- CEE:3586 Civil Engineering Materials 3 s.h.
- General education component course 3 s.h.
- Elective focus area course 3 s.h.

**FOURTH YEAR**

**First Semester**
- CEE:3003 Senior Design Seminar 1 s.h.
- General education component course 3 s.h.
- Two elective focus area courses 6 s.h.

Two of these, each from a different technical area:
- CEE:3136 Design of Concrete Structures 3 s.h.
- CEE:4157 Environmental Engineering Design 3 s.h.
- CEE:4374 Water Resource Design 3 s.h.
- CEE:4535 Design of Steel Structures 3 s.h.
- CEE:4762 Design of Transportation Systems 3 s.h.

**Second Semester**
- CEE:3084 Project Design and Management in Civil Engineering 3 s.h.
- General education component course 3 s.h.
- Three elective focus area courses 9 s.h.

**Environmental Subtrack**

**FIRST YEAR**

**First Semester**
- ENGR:1000 Engineering Success for First-Year Students (credit does not count toward B.S.E. degree) 1 s.h.
- ENGR:1100 Engineering Problem Solving I 3 s.h.
- CHEM:1110 Principles of Chemistry I 4 s.h.
- MATH:1550 Engineering Mathematics I: Single Variable Calculus 4 s.h.
- RHET:1030 Rhetoric 4-5 s.h.

**Second Semester**
- ENGR:1300 Engineering Problem Solving II 3 s.h.
- CHEM:1120 Principles of Chemistry II 4 s.h.
- MATH:1560 Engineering Mathematics II: Multivariable Calculus 4 s.h.
- MATH:2550 Engineering Mathematics III: Matrix Algebra 2 s.h.
- PHYS:1611 Introductory Physics I 4 s.h.

**SECOND YEAR**

**First Semester**
- CEE:2015 Civil and Environmental Engineering Practice 2 s.h.
- ENGR:2110 Engineering Fundamentals I: Statics 2 s.h.
- ENGR:2120 Engineering Fundamentals II: Electrical Circuits 3 s.h.
- ENGR:2130 Engineering Fundamentals III: Thermodynamics 3 s.h.
- MATH:2560 Engineering Mathematics IV: Differential Equations 3 s.h.
- General education component course 3 s.h.

**Second Semester**
- CEE:1030 Introduction to Earth Science 3-4 s.h.
- CEE:2000 CEE Sophomore Seminar 0 s.h.
- CEE:2150 Natural Environmental Systems 3 s.h.
- ENGR:2710 Dynamics 3 s.h.
- ENGR:2750 Mechanics of Deformable Bodies 3 s.h.
- STAT:2020 Probability and Statistics for the Engineering and Physical Sciences 3 s.h.
- General education component course 3 s.h.

**THIRD YEAR**

**First Semester**
- CEE:3001 Leadership Seminar 1 s.h.
- CEE:3530 Soil Mechanics 3 s.h.
- CEE:3533 Principles of Structural Engineering 3 s.h.
- CEE:3763 Principles of Transportation Engineering 3 s.h.
- ENGR:2510 Fluid Mechanics 4 s.h.
- Elective focus area course 3 s.h.

**Second Semester**
- CEE:3002 Professional Skills Seminar 1 s.h.
- CEE:3155 Principles of Environmental Engineering 4 s.h.
- CEE:3371 Principles of Hydraulics and Hydrology 3 s.h.
- CEE:3586 Civil Engineering Materials 3 s.h.
- General education component course 3 s.h.
- Elective focus area course 3 s.h.

**FOURTH YEAR**

**First Semester**
- CEE:3003 Senior Design Seminar 1 s.h.
- General education component course 3 s.h.
- Two elective focus area courses 6 s.h.

Two of these, each from a different technical area:
- CEE:3136 Design of Concrete Structures 3 s.h.
- CEE:4157 Environmental Engineering Design 3 s.h.
- CEE:4374 Water Resource Design 3 s.h.
- CEE:4535 Design of Steel Structures 3 s.h.
- CEE:4762 Design of Transportation Systems 3 s.h.

**Second Semester**
- CEE:3084 Project Design and Management in Civil Engineering 3 s.h.
- General education component course 3 s.h.
- Three elective focus area courses 9 s.h.
The College of Engineering offers a joint (fast-track) Bachelor of Science in Engineering/Master of Science education component course related to their elective focus area.

Civil engineering students must take one general education component course.

Civil engineering students may choose from several standard elective focus areas developed by the department, a focus area offered jointly with another engineering department, or an individual focus area tailored to the student's interests.

Standard elective focus areas are offered in environmental engineering; hydraulics and water resources; structures, mechanics, and materials; transportation engineering; urban and regional planning; and in the broad field of civil engineering. Elective focus areas offered jointly with other engineering departments cut across programs (e.g., computer-aided engineering, design and optimization, environmental processes).

Civil engineering students must take one general education component course related to their elective focus area.

For more detailed information about elective focus areas, see Bachelor of Science in Engineering (p. 841) in the Catalog. For a list of standard elective focus area options and guidelines for tailored elective focus areas in civil engineering, see CEE Elective Focus Areas on the Department of Civil and Environmental Engineering website.

Joint B.S.E./M.S.

The College of Engineering offers a joint (fast-track) Bachelor of Science in Engineering/Master of Science for civil engineering undergraduate students who intend to earn an M.S. in civil and environmental engineering. B.S.E./M.S. students may attend the departmental graduate seminar and work on a master's thesis or research project while they are still undergraduates. They may count a limited amount of course work toward both degrees. Once students complete the requirements for the bachelor's degree, they are granted the B.S.E., and they normally complete the M.S. one year later.

To be admitted to the joint degree program, students must have completed at least 80 s.h. and must have a cumulative g.p.a. of at least 3.25. They must submit an application form to the Department of Civil and Environmental Engineering, along with a letter stating their proposed area of specialization and the name of a department faculty member willing to be their primary M.S. advisor. They also must identify a faculty sponsor who can guide them from at least the second semester of their senior year until they complete the M.S.

Applications are due by March 1.

Graduate Programs of Study

- Master of Science in civil and environmental engineering
- Doctor of Philosophy in civil and environmental engineering

Graduate study in civil and environmental engineering prepares students for professional careers and further study. The principal concentration areas are environmental engineering and environmental science; hydraulics, hydrology, and water resources; structures, mechanics, and materials; and transportation.

The department also participates in two Graduate College programs: Applied Mathematical and Computational Sciences (p. 925), an interdisciplinary doctoral program; and Transportation Studies (p. 961), a graduate certificate program (see "Related Certificate: Transportation Studies" below).

Research and Study Areas

ENVIRONMENTAL ENGINEERING AND SCIENCE

The environmental engineering and science curriculum provides a comprehensive base of course work and research in the areas of air- and water-quality management, environmental chemistry and microbiology, natural systems modeling, and processes for water supply, pollution control, and solid and hazardous waste management. Interdisciplinary specialization and study are conducted with programs including IIHR—Hydroscience & Engineering, the Center for Global and Regional Environmental Research, the Center for Health Effects of Environmental Contamination, the Hazardous Substances Research Center, the Center for Biocatalysis and Bioprocessing; the Departments of Chemical and Biochemical Engineering, Earth and Environmental Sciences, Geographical and Sustainability Sciences, Microbiology, Occupational and Environmental Health; and the School of Urban and Regional Planning. New areas of interdisciplinary focus include groundwater contamination, biotechnology, global climate change, and hazardous substances.
HYDRAULICS, HYDROLOGY, AND WATER RESOURCES

The hydraulics, hydrology, and water resources curriculum is associated with IIHR—Hydroscience & Engineering, a world-renowned research institute. Senior staff members of the institute are professors in the program; they devote about half of their time to teaching.

IIHR offers unique opportunities for students to participate actively in the research, analysis, and design aspects of real-world problems. Considerable attention is given to the use of computers in mathematical modeling and in data acquisition and processing. IIHR high-speed computer facilities and advanced graphics and communication software complement the hydrology, hydraulics, and water resources curriculum.

STRUCTURES, MECHANICS, AND MATERIALS

The structures, mechanics, and materials curriculum is designed for students who wish to gain knowledge and skill in the mechanics of solids and structures that they can apply to civil infrastructure systems and other fields. The program concentrates on developing appropriate methodologies for tackling broad, complex issues related to civil infrastructure systems, and on educating engineers in the implementation and application of methodologies to actual engineering projects. Faculty members have expertise in structural engineering, design optimization, solid mechanics, and computational methods.

TRANSPORTATION ENGINEERING

The transportation engineering curriculum aims at graduating students interested in developing specialized knowledge and skills applicable to the diverse set of issues associated with transportation. Faculty members have expertise in traffic engineering, infrastructure management systems, pavement engineering, advanced construction materials, dynamic load and pavement simulation, optimal design, winter highway maintenance, real-time simulation, human factors, intelligent sensors, nondestructive testing, transportation planning, and travel demand modeling.

Master of Science

The Master of Science program in civil and environmental engineering requires a minimum of 30 s.h. of graduate credit, with or without thesis. The program enables students to concentrate in one or more areas of their choice. Graduates are placed in advanced technical positions in industry, consulting firms, or government, or they may continue their graduate study. Current and projected demand for M.S. graduates is excellent. Students who choose the thesis program may earn up to 6 s.h. for the thesis.

With the approval of their advisor, students develop a study plan that satisfies the requirements of their chosen curriculum. All M.S. students must maintain a g.p.a. of at least 2.75, pass an oral examination, and in some program options, a written examination.

Consult the department’s Graduate Student Manual for more detailed information about the M.S. program in civil and environmental engineering.

Doctor of Philosophy

The Doctor of Philosophy program in civil and environmental engineering requires a minimum of 72 s.h. of graduate credit. The doctoral degree is granted primarily on the basis of achievement rather than on a prescribed course of study.

Students usually need at least three years of full-time graduate study to complete the degree. All students must pass a qualifying examination. Students also must pass a written and oral comprehensive examination before they may be formally admitted to Ph.D. candidacy; the comprehensive examination usually is taken after all required course work has been completed. Students devote one year to the preparation of a dissertation that contributes to knowledge in the field; they must defend their dissertation successfully in a final examination. Ph.D. students must maintain a g.p.a. of at least 3.00 throughout the program.

Consult the department’s Graduate Student Manual for more detailed information about the Ph.D. program in civil and environmental engineering.

Related Certificate: Transportation Studies

The Transportation Studies Program offers the Certificate in Transportation Studies, which requires 18 s.h. of graduate credit. The program focuses on the varied and complex problems of transportation and on interdisciplinary approaches to addressing them. The Departments of Civil and Environmental Engineering, Mechanical and Industrial Engineering, and Geographical and Sustainability Sciences and the School of Urban and Regional Planning participate in the program, which is administered by the Graduate College and the University’s Public Policy Center. See Transportation Studies (p. 961) (Graduate College) in the Catalog for more information about the certificate.

Admission

Applicants must meet the admission requirements of the Graduate College; see the Manual of Rules and Regulations of the Graduate College.

Each of the program's curricula is flexible; students may be admitted from all disciplines of engineering as well as from the mathematical and basic sciences.

Applicants to the M.S. program should have a cumulative undergraduate g.p.a. of at least 3.00. Ph.D. applicants should have a graduate g.p.a. of at least 3.00. Applicants whose grade-point average is slightly lower should contact the department.

Applicants should have a combined verbal and quantitative score of at least 301 on the Graduate Record Examination (GRE) General Test. Lower scores are considered with other evidence of academic promise (recommendation letters, grade-point average). GRE General Test scores also are used in financial aid decisions.

Financial Support

A significant number of research assistantships are available on a variety of research projects, as are a limited number of teaching assistantships. Selection of recipients usually is based on scholastic achievement and research interest.
Facilities and Laboratories

Undergraduate Core

The first-year engineering course ENGR:1100 Engineering Problem Solving I includes an introduction to the college's Engineering Computer Services. Students in the course use computer-aided design tools on engineering work stations. All civil engineering courses require knowledge of personal computers and contain significant computer content.

For information about laboratories affiliated with core courses coordinated by other engineering departments, see the Catalog section for each of the departments.

Required and Elective Undergraduate Laboratories

CEE:2015 Civil and Environmental Engineering Practice (2 s.h.), CEE:3763 Principles of Transportation Engineering (3 s.h.), and CEE:3084 Project Design and Management in Civil Engineering (3 s.h.): use of a state-of-the-art laboratory for computer-aided design and drawing.

CEE:3530 Soil Mechanics (3 s.h.): equipped for determining the classification, seepage characteristics, stress-strain properties, and strength of soils.

CEE:3155 Principles of Environmental Engineering (4 s.h.): conducted at the University Water Treatment Plant and Iowa City Wastewater Plant for demonstrations of unit operations and processes of water and wastewater treatment, and applications in environmental chemistry and microbiology.

CEE:3371 Principles of Hydraulics and Hydrology (3 s.h.): hydraulics of pressure conduits and open channels, dimensional analysis, flow measurements, hydraulic machinery, with laboratory.

CEE:3586 Civil Engineering Materials (3 s.h.): structure, strength and failure, durability, deformation, practice, and processing for primary construction materials systems, including steel, aluminum, concrete, asphalt, fiber-reinforced composites, masonry, timber.

CEE:4153 Environmental Chemistry Laboratory (3 s.h.): experiments to demonstrate fundamental principles of aquatic chemistry and chemical analyses for characterization of water and wastewater quality, conducted in the Environmental Engineering Laboratories.

CEE:5154 Environmental Microbiology (3 s.h.): typical microorganisms isolated and their physiology and metabolic characteristics studied in the Environmental Engineering Laboratories.

CEE:5156 Physical-Chemical Process Fundamentals (3 s.h. and CEE:4151 Biological Treatment Processes (3 s.h.): unit operations, processes studied in bench scale experiments; use of typical process analytical parameters; experiments conducted in the Environmental Engineering Laboratories, University Water Plant, and Iowa City Wastewater Treatment Plant.

Graduate Laboratories

ENVIRONMENTAL ENGINEERING AND SCIENCE

The Environmental Engineering and Science Laboratories provide state-of-the-art facilities, equipment, and expertise to support both undergraduate and graduate-level instruction and research. The laboratories support research in contaminant fate and transport in various media (air, water, soil, plants, and microbes), drinking water disinfection and distribution, wastewater treatment, geochemical-contaminant interactions, bioremediation, and phytoremediation. They also provide resources for analytical chemistry, electrochemistry, molecular biology, microscopy, computer modeling, and simulated environments on the bench- and pilot-scale levels.

The Environmental Engineering and Science Laboratories are affiliated with the University's Center for Health Effects of Environmental Contamination and its Center for Global and Regional Environmental Research, and with the UI Environmental Health Sciences Research Center, an affiliate of the National Institute of Environmental Health Sciences (NIEHS).

HYDRAULICS, HYDROLOGY, AND WATER RESOURCES

The teaching and research functions of the department are closely connected to the research activities of IIHR—Hydroscience & Engineering. The institute houses some of the most modern research facilities in the world, including a 100-meter towing tank, a wave basin facility for ship hydrodynamics research, several flumes, an array of field instrumentation for hydrologic experiments, extensive laboratory space for hydraulic modeling, state-of-the-art instrumentation for flow measurements and visualization, and comprehensive computational facilities.

Research related to ecohydraulics and the environment takes place at the Lucille A. Carver Mississippi Riverside Environmental Research Station. IIHR—Hydroscience & Engineering operates the 250-square-foot facility, which is located on the Mississippi River near Muscatine, Iowa. The station provides engineers and biological scientists with an ideal facility in which to examine the multifaceted ecohydraulic processes of the upper Mississippi. It is equipped with water quality laboratories, research boats, and a seminar room.

STRUCTURES, MECHANICS, AND MATERIALS

Facilities for computations, materials testing, geotechnical experiments, and small-scale structural testing are available for research and teaching. Faculty, staff, and students in structures, mechanics, and materials (SMM) have access to the computing resources of Engineering Computer Services and the Center for Computer-Aided Design (CCAD). Both centers continuously update their computing facilities to maintain pace with the rapidly changing field.

A wide range of experimental facilities is available for testing structural materials such as Portland cement concrete, asphalt, metals, timber, and composites. These facilities include several loading frames (purely uniaxial, purely torsional, and axial-torsional) that are available with computer-based control and data collection systems. Facilities for creep testing, triaxial soil testing, and high-cycle fatigue testing also are available. The laboratories have a variety of ovens and other facilities for preparation and treatment of test specimens.

Four well-equipped physical testing laboratories are dedicated to SMM teaching and research: the Civil Materials Laboratory, Soil Mechanics Laboratory, Plasticity Laboratory, and the Asphalt Laboratory. The Civil Materials Laboratory currently has a small-scale single-degree-of-freedom shaker table. Faculty, staff, and students have access through CCAD to a six-degree-of-freedom man-
rated shaker table with 4000-pound payload and a 12-camera Vicon motion-capture system.

**TRANSPORTATION ENGINEERING**

The department's Asphalt Laboratory is equipped with a set of SuperPave testing equipment and asphalt mixture performance testing equipment, which can measure dynamic modulus and flow number of asphalt mixtures. The laboratory has a Hamburg Wheel Tracking Device for measuring the moisture sensitivity of asphalt mixtures; asphalt foaming equipment for mix design of cold in-place recycled asphalt using foamed asphalt; and equipment for Marshall mix design, indirect tensile strength test, and volumetric analysis of asphalt mixtures. The Asphalt Laboratory is one of the department's group of laboratories for testing the strength behavior of other materials.

**Courses**

**Special Topics**

**CEE:0000 Cooperative Education Training Assignment: Civil Engineering**

Civil engineering students participating in the Cooperative Education Program register in this course during work assignment periods; registration provides a record of participation in the program on the student's permanent record card. Requirements: admission to the Cooperative Education Program.

**CEE:0002 Half-time Cooperative Education Training Assignment: Civil and Environmental Engineering**

Registration for work assignment periods; for students participating in the Cooperative Education Program.

**CEE:2000 CEE Sophomore Seminar**

Introduction to civil and environmental engineering curriculum and profession; presentations by senior undergraduate students, faculty, and professionals; lifelong learning skills and requirements for professional licensure in civil engineering. Requirements: sophomore standing.

**CEE:2015 Civil and Environmental Engineering Practice**

Concepts of the built environment and the natural environment; infrastructure life cycle; engineering communication (plans, engineering drawings and information systems, computer-aided drafting); field trip to major city.

**CEE:2240 Digital Drafting with AutoCAD**

Basic principles of 2-D and 3-D computer-aided drafting; use of AutoCAD software to draw plans, elevations, and sections for objects and interior spaces. Prerequisites: (ARTS:1510 and ARTS:1520) and (TDSN:2210 or CERM:2010 or MTLS:2910 or SCLP:2810). Same as TDSN:2240.

**CEE:3001 Leadership Seminar**

Survey of leadership ideas and principles as applied to situations commonly encountered in civil engineering practice, especially as they relate to challenges that beginning engineers face; speakers in selected engineering professions provide context and examples; exercises on leadership principles. Requirements: junior standing in civil and environmental engineering.

**CEE:3002 Professional Skills Seminar**

Development of communication skills through writing and oral presentations; impact of engineering solutions in a global, economic, environmental, and societal context; writings and presentations on current or historical engineering solutions; exposure to professionals with significant experiences to share in these areas. Requirements: junior standing.

**CEE:3003 Senior Design Seminar**

Review and extension of civil and environmental engineering project management skills in preparation for capstone senior design course; project scheduling, cost estimating, contract types, construction phasing; review for Fundamentals of Engineering Exam (FE) and practice tests in four subdisciplinary areas. Requirements: senior standing.

**CEE:3084 Project Design and Management in Civil Engineering**

Design of civil engineering systems, individual and team design projects oriented toward the solution of local problems, project management, construction management, contracts, budgeting, bidding. Prerequisites: CEE:3003 and CEE:3533 and CEE:3763 and CEE:3371. Requirements: senior standing.

**CEE:3783 Surveying and Remote Sensing**

Engineering surveying measurements, methods, computations. Prerequisites: ENGR:1100.

**CEE:3998 Individual Investigations: Civil Engineering**

Individual projects for civil engineering undergraduate students: laboratory study, engineering design project, analysis and simulation of an engineering system, computer software development, research.

**CEE:4107 Sustainable Systems**

New and emerging concepts in sustainable systems design and assessment. Same as CBE:4410.

**CEE:4116 Computer-Aided Design for Civil and Environmental Engineering**

Introduction to engineering design process and graphical communications tools used by civil engineers; fundamentals of engineering drawing, descriptive geometry, multiview projection, graphical analysis, coordinate systems, database manipulation, building information modeling (BIM); AutoCAD. Prerequisites: CEE:2015. Requirements: civil and environmental engineering major.
CEE:4511 Numerical Calculations  3 s.h.
Development of algorithms for functional approximations, numerical differentiation and integration; solution of algebraic and differential equations, with emphasis on digital computations; initial and boundary value problems. Prerequisites: MATH:2560. Same as ME:4111.

CEE:4512 Engineering Design Optimization  3 s.h.
Engineering design projects involving modeling, formulation, and analysis using optimization concepts and principles: linear and nonlinear models, optimality conditions, numerical methods. Prerequisites: ENGR:2110 and MATH:2550. Requirements: junior standing. Same as ME:4112.

CEE:4515 Computer-Aided Engineering  3 s.h.
Computational engineering modeling and simulation, geometric modeling, grid generation, finite-element and finite-volume methods, uncertainty analysis, optimization, engineering applications. Prerequisites: ENGR:2750 and ME:3052. Same as ME:4110.

CEE:4187 Statistics for Experimenters  3 s.h.
Application of statistical techniques to evaluate data derived from experimental samples designs; use of spreadsheets, statistical software; design and analysis of experiments; regression analysis; model building; practical applications. Same as OEH:4540.

CEE:4568 Civil Infrastructure  3 s.h.
Analytical methods for developing Infrastructure Management Systems (IMS); evaluation of infrastructure condition, performance modeling, rehabilitation optimization, development of the IMS; basic concepts of information technology applied in solving civil infrastructure management problems. Prerequisites: CEE:2015.

CEE:4788 International Perspectives: Xicotepec  2-3 s.h.
Introduction to providing service to a community in a less developed country; student projects intended to improve community life in Xicotepec. Requirements: P3 standing. Same as PHAR:8788, GHS:4126.

CEE:5129 Information Systems for Resource Management  3 s.h.
Understanding and managing natural and engineered resources requiring data-reach foundation; management of data; complex data-driven technologies integrated into data and information systems (DIS); hands-on opportunity to develop or use capabilities of DIS for study or research area of interest (science, engineering, industrial operation); wind power generation, an emerging field in Iowa, used as a case study for illustrating key DIS components, links, and functionalities. Same as IE:5129, ME:5129, ECE:5129, GEOG:5129.

CEE:5210 Developing Professional Service Business  2-3 s.h.
Use of professional skills and functional knowledge in creating a specialized service business. Same as ENTR:9000.

CEE:5513 Mathematical Methods in Engineering  3 s.h.

CEE:6310 Analytical Methods in Mechanical Systems  3 s.h.
Vector and function spaces; functionals and operators in Hilbert spaces; calculus of variations and functional analysis with application to mechanics; Ritz and Galerkin methods. Prerequisites: ME:5113. Same as ME:6214.

CEE:7197 Teaching Undergraduate Science and Engineering arr.
Basic skills to be a successful undergraduate instructor; teaching of technical subjects and solving problems; emphasis on practical applications of lesson material and class demonstrations; techniques for teaching effective classes; opportunity for students to teach; intended for graduating Ph.D. students with a career interest in a university environment.

Structures, Mechanics, and Transportation

CEE:3135 Structural Modeling and Health Monitoring  3 s.h.
Measurements, structural modeling, structural analysis, stiffness method, trusses and frames, structural testing, modal analysis. Prerequisites: CEE:3533 and ENGR:2750.

CEE:3136 Design of Concrete Structures  3 s.h.
Fundamental analysis and design of reinforced concrete members and structures, flexure, shear, bond, continuity, beams, one-way slab system; columns. Corequisites: CEE:3533.

CEE:3142 Quality Control  3 s.h.
Basic techniques of statistical quality control; application of control charts for process control variables; design of inspection plans and industrial experimentation; modern management aspects of quality assurance systems. Offered fall semesters. Prerequisites: STAT:2020. Same as IE:3600, STAT:3620.

CEE:3179 Continuum Mechanics arr.
Mechanics of continuous media; kinematics of deformation, concepts of stress and strain; conservation laws of mass, momentum and energy; constitutive theories; boundary and initial value problems. Prerequisites: ENGR:2510 or ENGR:2750. Same as ME:3179.

CEE:3530 Soil Mechanics  3 s.h.
Identification and classification of earth materials; hydraulic and mechanical properties of soils; soil improvement; laboratory testing. Prerequisites: ENGR:2750.

CEE:3533 Principles of Structural Engineering  3 s.h.
Fundamental principles of structural analysis applied to statically determinate and indeterminate structures, continuous beams, trusses, and frames; external and internal equilibrium, compatibility of deformation, influence lines, virtual work; parallel use of classical and matrix formulation; slope deflection, flexibility and stiffness methods; use of computers. Prerequisites: ENGR:2750.

**CEE:3586 Civil Engineering Materials** 3 s.h.
Structure, strength and failure, durability, deformation, practice, and processing for primary construction materials systems, including steel, aluminum, concrete, asphalt, fiber-reinforced composites, masonry, timber. Prerequisites: ENGR:2750.

**CEE:3763 Principles of Transportation Engineering** 3 s.h.
History of transportation modes, new transport technologies, traffic operations and control, economic evaluation of transport alternatives, transportation planning, roadway design and construction, route location, preventive maintenance strategies. Corequisites: CEE:2015.

**CEE:4131 Impacts of Technological Singularity** 3 s.h.
Technological singularity—what it is, its current standing, impacts, implications; bio-, nano-, and information technologies; how new technologies affect sustainability; ethical issues raised by technologies.

**CEE:4160 Introduction to Bridge Engineering** 3 s.h.
Bridge engineering and design; history of the bridge; factors that affect bridge design; bridges according to use (e.g., road, rail, pedestrian and bicycle) and type (e.g., suspension, cable stay, truss); how sustainability concepts may impact bridge design; substantial design exercise. Prerequisites: CEE:3533.

**CEE:4167 Public Transit Operations and Planning** 3 s.h.
Bus, light and heavy rail, and paratransit modes; transit operations, planning, modeling and optimization, transit agency economics, transit finance, and evolving transportation policy; skills essential to planners and engineers who intend to work for a either planning agency, transportation provider, or a transportation or planning consulting firm; individual and group projects involving transit operations. Requirements: undergraduate or graduate standing in engineering, or graduate standing in urban and regional planning. Same as URP:4195.

**CEE:4176 Transportation Demand Analysis** 3 s.h.
City planning procedures and traffic engineering techniques applied to transportation problems; trip generation, distribution, assignment, mode choice models; travel surveys, data collection techniques; arterial flow, intersection performance, parking; transit system analysis. Same as URP:4262.

**CEE:4532 Fundamentals of Vibrations** 3 s.h.
Vibration of linear discrete and continuous mechanical and structural systems; harmonic, periodic, and arbitrary excitation; modal analysis; applications. Prerequisites: ENGR:2750. Same as ME:4153.

**CEE:4533 Finite Element I** 3 s.h.
One- and two-dimensional boundary value problems; heat flow, fluid flow, torsion of bars; trusses and frames; isoparametric mapping; higher order elements; elasticity problems; use of commercial software. Prerequisites: ENGR:2750. Same as ME:4115.

**CEE:4535 Design of Steel Structures** 3 s.h.
Concepts and procedures in steel design; LRFD (load and resistance factor design) methodology for beams/columns; analysis and design of indeterminate structures. Prerequisites: CEE:3533.

**CEE:4539 Foundations of Structures** 3 s.h.
Application of soil mechanics to analysis of structural foundations; slope stability analysis; bearing capacity and settlement of shallow and deep foundations; retaining structures, braced cuts, reinforced earth structures; usage of computational models; subsurface exploration methods. Prerequisites: CEE:3530.

**CEE:4543 Computational Inelasticity** 3 s.h.
Computational techniques and implementations for elastic, hyperelastic, elasto-plastic, visco-elastic, and visco-plastic material models; development of sound numerical integration algorithms from rate constitutive equations. Recommendations: CEE:3179.

**CEE:4560 Pavement Engineering** 3 s.h.
Fundamental design principles; characterization and testing of asphalt and concrete paving materials; stresses and stain development within pavement structure; basic principles of mechanistic-empirical pavement design procedures. Prerequisites: CEE:3763.

**CEE:4762 Design of Transportation Systems** 3 s.h.
Overview of different modes within transportation systems; concepts of sustainability and livability in transportation system design; derivation of standards for geometric design of highways; roundabout design; cross-sectional and longitudinal geometric design of highways. Prerequisites: CEE:3763.

**CEE:4763 Traffic Engineering** 3 s.h.
Design of traffic control devices; evaluation and analysis of intersections and transportation networks using appropriate computer software. Prerequisites: CEE:3763 and STAT:2020.

**CEE:4764 Winter Highway Maintenance** 3 s.h.
Aspects of winter highway maintenance; current and innovative practices and the theory that underpins them.

**CEE:5094 Graduate Seminar: Transportation** 0 s.h.
Recent advances and research in transportation engineering. Requirements: senior or graduate standing.
CEE:5137 Composite Materials 3 s.h.
Mechanical behavior of composite materials and their engineering applications; composite constituents (fibers, particles, matrices) and their properties and behavior; macromechanical behavior of composite laminae; micromechanical predictions of composite overall properties; classical lamination theory; composite beams and plates. Prerequisites: ENGR:2750. Same as ME:5167.

CEE:5236 Optimization of Structural Systems 3 s.h.
Advanced topics; optimization of structural topology, shape, and material; finite dimensional dynamic response optimization, sensitivity analysis, distributed parameter systems; projects.

CEE:5540 Intermediate Mechanics of Deformable Bodies 3 s.h.
Application of equilibrium analyses, strain-displacement relations, and constitutive relationships to practical structural systems and elementary plane elasticity problems. Prerequisites: ENGR:2750. Same as ME:5150, BME:5660.

CEE:5549 Fracture Mechanics 3 s.h.
3-D stress states, definition and criteria for failure, nominal and local yield phenomena, linear elastic and elastic plastic fracture mechanics, plane stress and plane strain fracture toughness, J-Integral, crack opening displacement, environmental assisted cracking, fatigue crack growth, fail safe, and damage tolerant design. Prerequisites: BME:4910 or ME:4055 or ME:5150. Same as ME:5159.

CEE:6532 Finite Element II 3 s.h.
Computer implementation; plate and shell elements; mixed and hybrid formulations; nonlinear analysis; recent development; introduction to boundary element method. Prerequisites: CEE:4533. Same as ME:6215.

CEE:6534 Applied Optimal Design 3 s.h.
Optimal design problem formulation; optimality conditions; linear, quadratic, convex, and nonlinear programming; Lagrangian duality; numerical algorithms for unconstrained and constrained design problems, design sensitivity analysis, engineering applications. Prerequisites: CEE:5513. Same as ME:6334.

CEE:6763 Application Simulation to Transportation 3 s.h.
Transportation system management and traffic engineering; application of real-time simulation and visualization. Prerequisites: CEE:3763 or CEE:4763. Same as URP:6063.

CEE:7250 Advanced Fracture Mechanics 3 s.h.
Fracture of modern engineering materials; linear-elastic fracture; computational methods; functionally graded materials; elastic-plastic fracture; multiscale fracture and fatigue crack initiation. Prerequisites: ME:5113 and (ME:4115 or ME:5159). Same as ME:7250.

CEE:7549 Multiscale Modeling 3 s.h.
Computational modeling of engineering materials ranging from molecular to continuum scales, molecular dynamics and Monte Carlo methods, nanoscale continuum modeling, scale-coupling methods. Prerequisites: ME:4115 or ME:5143. Same as ME:6255.

Environmental Engineering and Science

CEE:1030 Introduction to Earth Science 3-4 s.h.
Relationships between plate tectonics, geologic time, and the rock cycle with volcanoes and igneous, sedimentary, metamorphic rocks; fossils; radioactive isotopes; landscape evolution; mountain building; natural resources; their impacts on civilization. GE: Natural Sciences without Lab; Natural Sciences with Lab. Same as EES:1030.

CEE:2150 Natural Environmental Systems 3-4 s.h.
Environmental chemistry and biology of air, water, and soil quality, air and water pollution, limnology, global atmospheric change, fate and transport of pollutants; hazardous substances, risk analysis, standard setting. Prerequisites: CHEM:1110. Same as GHS:2150.

CEE:3141 Design With the Developing World 3 s.h.
Experience working on interdisciplinary teams to solve problems of the developing world; technologies for improving water and sanitation, energy, housing, and health; community building strategies, participatory methods, other techniques essential to good design; service-learning component. Recommendations: junior or higher standing. Same as GHS:3141.

CEE:3155 Principles of Environmental Engineering 4 s.h.
Water supply and treatment processes; wastewater treatment processes; processes for air pollution control, groundwater remediation; solid and hazardous waste management. Corequisites: CEE:2150.

CEE:4102 Groundwater 3 s.h.
Groundwater quality and quantity; Darcy's Law, 2-D flow equation, unsaturated zone, contaminant transport, redox reactions, drinking water quality, bioremediation; laboratories in permeameter testing, porous media grain size analysis, pump testing, monitoring well installation.

CEE:4104 Groundwater Modeling 3 s.h.
Groundwater flow and contaminant transport modeling; numerical methods, applications of groundwater modeling to water supply, groundwater resources evaluation, remediation design using software; GMS (MODFLOW, MODPATH, and MT3D). Prerequisites: (EES:4630 or CEE:4103) and MATH:1860. Same as EES:4660.

CEE:4147 Decentralized Wastewater Treatment 3 s.h.
Established and innovative technologies used in decentralized wastewater treatment; lagoons, constructed wetlands, sand filters, and other ecological technologies appropriate for small wastewater flows; need for more sustainable treatment of small wastewater flows; Iowa’s approximately 739 unsewered communities throughout the state, high-growth areas surrounding Des Moines and Cedar Rapids-Iowa City corridor with small developments in need of wastewater treatment, developing countries. Prerequisites: CEE:2150 and CEE:3155.

CEE:4151 Biological Treatment Processes 3 s.h.

CEE:4153 Environmental Chemistry 3 s.h.
Laboratory experiments to demonstrate important concepts in environmental chemistry and to familiarize students with procedures used to characterize water and wastewater and evaluate certain treatment processes. Prerequisites: CHEM:1120. Corequisites: CEE:5152.

CEE:4157 Environmental Engineering Design 3 s.h.
Application of physical, chemical, and biological operations and processes to the design of water and wastewater treatment systems; applications in solid and hazardous waste treatment. Prerequisites: CEE:3155.

CEE:4158 Solid and Hazardous Wastes 3 s.h.

CEE:4159 Air Pollution Control Technology 3 s.h.
Sources, environmental and health impacts, regulations, modeling of air pollution; processes and alternative strategies for control; global climate considerations. Prerequisites: CEE:2150. Same as CBE:4459.

CEE:4180 Fundamentals of Atmospheric Science 3 s.h.
Review of fundamental principles in atmospheric sciences needed for study of interdisciplinary topics involving the Earth's atmosphere; understanding weather and climate processes to address problems in engineering; hydrometeorology of rainfall and its measurement by remote sensing; impact of climate anomalies and climate change on water resources; exchange of water, energy, and chemicals at the land-atmosphere boundary; forecasting of atmospheric chemistry and air quality. Prerequisites: ENGR:2510.

CEE:4220 U.S. and Global Environmental Health Policy 3 s.h.
Major concerns in environment and human health, legislation enacted to deal with these concerns; emphasis on contemporary issues. Offered fall semesters of odd years. Requirements: for OEH:4220 — OEH:4240; for CEE:4220 — CEE:2150. Same as GHS:4220, OEH:4220.

CEE:5115 Atmospheric Chemistry and Physics 3 s.h.
Principal chemical and physical processes affecting atmospheric trace gas and pollutant cycles; emphasis on atmospheric photochemistry, aerosol science, major sources and removal processes. Corequisites: CBE:3120. Same as CBE:5425.

CEE:5152 Environmental Chemistry I 3 s.h.
Principles of general, physical, organic chemistry applied in water and air systems; emphasis on qualitative and quantitative understanding of chemical kinetics and equilibrium; acid-base reactions, complex formation, precipitation, dissolution, and oxidation-reduction reactions; organic nomenclature. Prerequisites: CHEM:1120. Same as CEE:5152.

CEE:5154 Environmental Microbiology 3 s.h.
Fundamentals of microbiology and microbial ecology with application in water quality and biodegradation of priority pollutants; lectures and laboratory. Corequisites: CEE:5152.

CEE:5156 Physical-Chemical Process Fundamentals 3 s.h.
Theory of physical and chemical operations and processes in water and wastewater treatment, including fundamental aspects of process dynamics; lectures, laboratory. Prerequisites: CEE:2150 and CEE:5152. Corequisites: CEE:3155.

CEE:5875 Perspectives in Biocatalysis 1-3 s.h.
Applied enzymology, protein design, structure-activity relationships, biosensor technology, microbial transformations, biodegradation of environmental pollutants. Requirements: graduate standing in a participating department supported by the Predoctoral Training Program in Biotechnology. Same as CHEM:5875, PHAR:5875, CBE:5875, MICR:5875, BIOC:5875.

CEE:6151 Environmental Systems Modeling 3 s.h.
Mathematical modeling of environmental systems, including rivers, lakes, estuaries, treatment systems for conventional and toxic pollutants. Prerequisites: CEE:2150 and CEE:3155 and CEE:5152.

CEE:6223 Environmental Boundary Layers 4 s.h.
Fundamentals of environmental boundary layer dynamics and thermodynamics of natural and engineered systems; atmospheric boundary layers and aquatic surface layer dynamics; land-atmosphere interaction, air-water exchange, and turbulent transport in aquatic ecosystems; turbulence, surface energy balance, spectral analysis, similarity theory, flow over homogeneous and heterogeneous surfaces, thermal stratification effects, measurement, simulation of turbulent and surface fluxes; applications to environmental modeling, urban meteorology, ecosystem dynamics, renewable energy; recent and current research topics. Prerequisites: ENGR:2510.
Hydraulics, Hydrology, and Water Resources

CEE:6253 Environmental Chemistry II 3 s.h.
Solid-liquid interface problems, heterogeneous equilibria, environmental organic chemistry, modeling chemical equilibrium and kinetics, redox chemistry, atmospheric chemistry. Prerequisites: CEE:5152.

CEE:6255 Environmental Biotechnology and Bioremediation 3 s.h.
Concepts in molecular microbial ecology and bioremediation; microbial diversity and genetics, evolution of biodegradation pathways, application of quantitative PCR, high-throughput amplicon and metagenomic and transcriptomic sequencing, proteomics, stable isotopes; bioremediation research and practice. Prerequisites: CEE:5154.

Hydraulics, Hydrology, and Water Resources

CEE:3328 Fluvial Geomorphology 3 s.h.
Hydrologic principles, stream channel processes, and fluvial geomorphology within drainage basin systems; spatial and temporal variations in water distribution, analysis of hydrological data, flow mechanisms, sediment transport, forecasting procedures, hydrograph construction, modeling. Requirements: EES:3020 or another 3000-level geology or hydraulics course. Same as EES:3380.

CEE:3371 Principles of Hydraulics and Hydrology 3 s.h.
Hydraulics of pressure conduits and open channels, dimensional analysis, flow measurements, hydraulic machinery, laboratory. Prerequisites: ENGR:2510.

CEE:4103 Water Quality 3 s.h.
Sources, availability, uses, characteristics, criteria, best management practices for surface waters; protection of waters impaired by eutrophication, soil erosion and sedimentation; pathogenic organisms, habitat destruction, wastewater discharges, contaminated sediments, atmospheric deposition, watershed development, invasive species, irrigation return flows, stormwater discharges, nonpoint sources, agricultural runoff; laboratory component, measurement of water quality characteristics in the field. Requirements: junior or higher standing.

CEE:4118 Probabilistic Methods in Hydroscience 3 s.h.
Common probabilistic models used in hydrology, hydraulics, and water resources; derived distributions; multivariate models and estimation of model parameters; analysis of data and model building; uncertainty analysis. Prerequisites: MATH:2560 and STAT:2020.

CEE:4119 Hydrology 3 s.h.
Overview of fundamental processes in water cycle, including precipitation, evaporation, infiltration, and runoff; quantitative approaches for predicting streamflow and design discharges; applications to flood hazard assessment and stormwater management. Prerequisites: ENGR:2510.

CEE:4120 Water Resources Sustainability 3 s.h.
Effect of human impact on hydrologic ecosystems (aquifers, watersheds, coastal zones, lakes, and wetlands); quantitative measures of impact and mitigation/attenuation efforts; key questions addressed (What does water resources sustainability mean? How can it be measured? How can it be implemented?); worldwide case studies that illustrate the detrimental effects of unsustainable resource utilization and the benefits of implementing sustainable resource management strategies.

CEE:4123 Hydroclimatology 3 s.h.
Introduction to fundamental processes governing climate system and hydrological cycle, links between them; measurements of atmospheric and terrestrial components; atmosphere-ocean interactions (e.g., El Nino, Pacific Decadal Oscillation); teleconnections; climatology of atmospheric storms and impacts (e.g., atmospheric rivers, tropical cyclones, floods, droughts); climate change and variability; tools for analysis of climate data. Recommendations: CEE:4118 and CEE:4119 and CEE:4180 and CEE:4378.

CEE:4146 Multiscale Hydrology: Introduction to Multiscale Hydrologic Phenomena 3 s.h.
Hydrologic principles over the last century developed from experimentation at laboratory and small plot scales; major scientific and engineering challenges, including links between statistical fluctuations that data exhibits; physical, chemical, and biological principles through appropriate mathematical theories, numerical models, and field observations; coupled hydrologic processes at larger scales using newly built on abstraction; observations used in hydrologic engineering at larger scales for several decades and missing a coherent theory that ties them together. Prerequisites: ENGR:2510 and MATH:6600. Requirements: three semesters of calculus and college physics, an introductory hydrology course, and a probability and statistics course.

CEE:4317 Remote Sensing 3 s.h.
Fundamentals of electromagnetic waves, atmospheric radiative transfer, passive remote sensing, weather radar, hydrologic application of remote sensing.

CEE:4370 Flow in Open Channels 3 s.h.
In-depth analysis of governing flow equations; steady uniform flow in channels of different resistance and cross section; flow control sections; specific energy considerations; analysis and computation of gradually varied profiles and spatially varied flow effected by lateral outflow and inflow; unsteady flow; flood routing. Prerequisites: CEE:3371.

CEE:4371 Water Resources Engineering 3 s.h.
Planning and economics of varied water resources projects; stochastic basis for design; flood damage mitigation, reservoirs, river morphology, economic analysis of water projects, urban water requirements, water supply, hydroelectric power systems, river navigation; contemporary civil-engineering problems and issues associated with water infrastructure development. Corequisites: CEE:3371.
CEE:4373 River Mechanics 3 s.h.
Laws governing fall velocity, applications to particle-size analysis; incipient motion, bed forms, bed load, suspended load, natural river processes; theory and practice of movable-bed model experiments. Prerequisites: CEE:4370.

CEE:4374 Water Resource Design 3 s.h.
Prerequisites to storm water management systems design, including design flows and rates; analysis and design of storm sewers, detention basins, street and highway drainage facilities, culverts, dams, spillways, measures for energy dissipation; review of wastewater transfer systems and design. Prerequisites: CEE:3371.

CEE:4378 Hydrometeorology 3 s.h.
Atmospheric thermodynamics; precipitation processes; evaporation; infiltration; surface runoff; hydrographs, runoff relations; runoff hydrography; storage problems; frequency, intensity, duration studies of storms, floods, droughts; hydrometeorological observations and network design; watershed modeling; urban hydrology climate.

CEE:4385 International Perspectives in Water Sciences and Management 3 s.h.
Internationalization and water, with focus on a country or a world region; intensive, in-depth exposure to complex issues that affect planning and execution of water projects in large-scale watersheds.

CEE:5083 Introduction to Comp Flow in Pipes and Channels 3 s.h.
General review of numerical methods in hydraulics (finite-difference, finite-element, and method of characteristics); stability and accuracy of numerical schemes; steady free surface flows; flow transients in pipelines and channels. Prerequisites: CEE:5369.

CEE:5184 The Fate and Transport of Contaminated Sediments 3 s.h.
Rich and complex field of sediment and contaminant transportation; involves physical, chemical, biological processes as well as mathematical modeling of these processes; recently investigated topics not covered elsewhere; physical processes affecting stability/mobility, transport, and fate of contaminants in sediments; lack of general understanding of development of fine-scale sedimentary structure in different systems, particularly contamination and contamination release; issue of suspension effects on turbulent flows; flow dynamics. Prerequisites: CEE:3530 and CEE:4370 and CEE:4373.

CEE:5188 Computational Methods in Water Resources 3 s.h.
Computational methods for solution of problems; emphasis on problems in water resources; standard methods for problem solutions using computers; problems of interest in hydraulics/hydrology. Recommendations: some programming ability.

CEE:5216 Coherent Structures in Environmental Hydraulics 3 s.h.
Introduction to coherent structures and their role in explaining the physics of several important categories of environmental flows; focus on examples related to hydraulics, river engineering, stratified flows, and geosciences; turbulence modeling using eddy resolving techniques that can capture the dynamics of coherent structures; no prior experience in coding or numerical methods is expected. Prerequisites: CEE:5369.
Requirements: M.S. or Ph.D. standing.

CEE:5369 Intermediate Mechanics of Fluids 3 s.h.
Basic concepts and definitions; pressure distribution in a fluid; governing equations and boundary conditions; integral and differential analysis; dimensional analysis and similarity; experimental analysis; laminar and turbulent internal and external flows; potential flows; engineering applications. Prerequisites: ENGR:2510. Same as ME:5160.

CEE:5372 Experimental Methods in Fluid Mechanics and Heat Transfer 3 s.h.
Hands-on experience in methodology of conducting experiments in fluid mechanics and heat transfer from design to data acquisition and processing; essential theoretical elements, experimental methodologies, data acquisition systems, uncertainty analysis; wide variety of instruments for fundamental and applied experimentation; work in small groups; design, implement, test, and report an experiment in area of interest. Same as ME:5162.

CEE:6372 Environmental Dispersion Processes 3 s.h.
Review of classical diffusion theories; longitudinal dispersion, transverse and vertical mixing in free-surface turbulent shear flow; application to natural channels; selected topics including stream-tube models, mixing and dispersion of heated effluents. Corequisites: CEE:5369.

CEE:6376 Viscous Flow 3 s.h.
Equations of viscous flow; classical analytical and numerical solutions; flow regimes and approximations; laminar boundary layers—equations, solution methods, applications; stability theory and transition; incompressible turbulent flow—mean-flow and Reynolds-stress equations, modeling, turbulent boundary layers and free shear flows. Requirements: for ME:6260 — ME:5160; for CEE:6376 — CEE:5369. Same as ME:6260.

CEE:6520 Watershed Sedimentation 3 s.h.
Exploration of rich and complex field of sediment transport, geomorphology, and contaminant transport; associated physical, chemical, and biological processes with associated mathematical modeling; investigation of current topics not covered elsewhere, including physical processes affecting stability/mobility, transport, and fate of soil/sediments; lack of general understanding in development of fine-scale sedimentary structure in different systems, particularly contamination and contamination release; suspension effects on turbulent flows. Prerequisites: CEE:4370 and CEE:4373.
Graduate Seminars, Advanced Topics, Research

CEE:4097 Topics in Teaching and Learning 1 s.h.
Overview of Iowa's hydroclimate; emphasis on discharge, rainfall, and temperature; how to address basic research questions related to Iowa's climate and extreme events; hands-on exercises.

CEE:4995 Contemporary Topics in Civil and Environmental Engineering arr.
New topics or areas of study not formally offered in other civil and environmental courses; ice engineering, chaos and strange attractors, remote sensing, nonlinear dynamics of hydrologic processes, advanced water and wastewater treatment processes, hazardous waste control, global climate change, damage mechanics; based on faculty/student interest.

CEE:5091 Graduate Seminar: Structure, Mechanics, Materials 0 s.h.
Presentation and discussions of recent advances and research in structures, mechanics, and materials engineering by guest lecturers, faculty, students. Requirements: senior or graduate standing.

CEE:5092 Graduate Seminar: Environmental Engineering Seminar 0 s.h.
Presentation and discussion of current topics, case studies, and research in environmental science and engineering by students, guest lecturers, faculty. Requirements: senior or graduate standing.

CEE:5093 Graduate Seminar: Hydraulics, Hydrology, and Water Resources 0 s.h.
Presentation and discussions of recent advances and research in hydraulics, hydrology, and water resources by guest lecturers, faculty, students. Requirements: senior or graduate standing.

CEE:5998 Individual Investigations: Civil and Environmental Engineering arr.
Individual projects for civil and environmental engineering graduate students: laboratory study, engineering design project, analysis and simulation of an engineering system, computer software development, research. Requirements: graduate standing.

CEE:5999 Research: Civil and Environmental Engineering M.S. Thesis arr.
Experimental and/or analytical investigation of an approved topic for partial fulfillment of requirements for the M.S. with thesis in civil and environmental engineering. Requirements: graduate standing.

Experimental and/or analytical investigation of an approved topic for partial fulfillment of requirements for the Ph.D. in civil and environmental engineering.
Electrical and Computer Engineering

Chair

- Er-Wei Bai

Undergraduate major: electrical engineering (B.S.E.)
Graduate degrees: M.S. in electrical and computer engineering; Ph.D. in electrical and computer engineering
Faculty: http://www.engineering.uiowa.edu/ece/people/faculty-ece
Web site: http://www.engineering.uiowa.edu/ece/

Electrical engineers and computer engineers make vital contributions to nearly all facets of modern society through their work in areas such as computer systems, medical imaging, robotics, wireless communications, and fiber optics. From the World Wide Web to high-definition television, cellular telephones, and computer networks, the contributions of electrical and computer engineers are changing everyday life.

Many benefits that have sprung from electrical engineering technology now are taken for granted—noninvasive imaging of the brain and other internal organs, astonishing views of the solar system’s outer planets, and wireless telecommunications. Electrical engineers also play crucial roles in major emerging technologies, for example, wireless Internet, optical communications, and mapping of the human genome.

As the United States strives to retain or enlarge its share of national and international markets, electrical engineers are certain to play an important role in improving productivity through automation, increased efficiency, and new technologies.

Electrical and computer engineers work in research, design, development, manufacturing, sales, market analysis, consulting, field service, and management. They are employed in computer, semiconductor, software, aerospace, telecommunication, medical, radio, television, and power industries.

Undergraduate Program of Study

- Major in electrical engineering (Bachelor of Science in Engineering)

Graduates of the program will:

- exhibit leadership and vision in contributing to the technical and policy decisions of industry, government, and research enterprises;
- demonstrate problem-solving abilities that permit them to contribute in a variety of technical, business, and academic careers;
- thrive in diverse, global, and multidisciplinary environments;
- possess the ability to communicate effectively and participate collaboratively in interactions with engineers and other professionals; and
- participate in lifelong learning activities that enhance their professional and personal development.

Bachelor of Science in Engineering

The Bachelor of Science in Engineering requires a minimum of 128 s.h. The major in electrical engineering provides technical depth and breadth as well as flexibility and the opportunity for students to customize their programs according to their own goals. Students choose one of several elective focus areas according to the type of job or research they plan to pursue. They also choose one of two tracks to support their elective focus area.

All engineering students complete the B.S.E. core requirements, which include RHET:1030 Rhetoric; ENGR:1100 Engineering Problem Solving I and ENGR:1300 Engineering Problem Solving II; and courses in chemistry, engineering mathematics, and fundamentals, and physics. They must earn a grade of C-minus or higher in the core requirements MATH:1550 Engineering Mathematics I: Single Variable Calculus and MATH:1560 Engineering Mathematics II: Multivariable Calculus.

They also complete the curriculum designed for their major program, which covers four major stems: mathematics and basic sciences, engineering topics, an elective focus area, and the general education component (15 s.h. of humanities and social science courses). For information about the curriculum stems, see Bachelor of Science in Engineering (p. 841) in the Catalog.

Electrical engineering students complete the curriculum below. During their second year, they select an elective focus area (EFA) and choose a track that corresponds with it: the computer track or the electrical track. They begin taking track and EFA courses in their third year.

The following study plan includes the B.S.E. core requirements and the curriculum for the electrical engineering major. Some courses in the curriculum are prerequisites for others. Students who take courses in the order below satisfy the prerequisite requirements automatically. Students who do not follow this sequence still must satisfy all course prerequisites.

FIRST YEAR

First Semester

- ENGR:1000 Engineering Success for First-Year Students (credit does not count toward B.S.E. degree) 1 s.h.
- ENGR:1100 Engineering Problem Solving I 3 s.h.
- CHEM:1110 Principles of Chemistry I 4 s.h.
- MATH:1550 Engineering Mathematics I: Single Variable Calculus 4 s.h.
- RHET:1030 Rhetoric 4 s.h.

Second Semester

- ENGR:1300 Engineering Problem Solving II 3 s.h.
- MATH:1560 Engineering Mathematics II: Multivariable Calculus 4 s.h.
- MATH:2550 Engineering Mathematics III: Matrix Algebra 2 s.h.
- PHYS:1611 Introductory Physics I 4 s.h.
- General education component course 3 s.h.
SECOND YEAR

First Semester
ENGR:2110 Engineering Fundamentals I: Statics  2 s.h.
ENGR:2120 Engineering Fundamentals II: Electrical Circuits  3 s.h.
ENGR:2130 Engineering Fundamentals III: Thermodynamics  3 s.h.
MATH:2560 Engineering Mathematics IV: Differential Equations  3 s.h.
PHYS:1612 Introductory Physics II  3-4 s.h.

Second Semester
ECE:2400 Linear Systems I  3 s.h.
ECE:2410 Principles of Electronic Instrumentation  4 s.h.
ENGR:2730 Computers in Engineering  3 s.h.
MATH:3550 Engineering Mathematics V: Vector Calculus  3 s.h.
General education component course  3 s.h.

THIRD YEAR

First Semester
ECE:3000 Professional Seminar: Electrical Engineering  1 s.h.
ECE:3320 Introduction to Digital Design  3 s.h.
ECE:3700 Electromagnetic Theory  3 s.h.
STAT:2020 Probability and Statistics for the Engineering and Physical Sciences  3 s.h.
Two required track courses  6 s.h.

Second Semester
General education component course  3 s.h.
Three required track courses  9 s.h.
Two elective focus area courses  6 s.h.

FOURTH YEAR

First Semester
ECE:4880 Principles of Electrical Engineering Design  3 s.h.
General education component course  3 s.h.
Track breadth elective  3 s.h.
Three elective focus area courses  9 s.h.

Second Semester
ECE:4890 Senior Electrical Engineering Design  3 s.h.
General education component course  3 s.h.
Track depth elective  3 s.h.
Two elective focus area courses  6 s.h.

Elective Focus Area and Track

Students select an elective focus area to personalize their curriculum and to help them prepare for the type of job or research they plan to pursue. More than 20 EFAs are available, such as bioinformatics, business, communication systems, medical imaging, nanotechnology, power systems, and software; visit ECE Elective Focus Areas for a complete list. Students also select one of two tracks—computer or electrical—to support their EFA. They complete seven courses in their track and seven EFA courses.

Students who choose their track and EFA courses carefully may be able to earn the Certificate in Sustainability (p. 1248), the Certificate in Technological Entrepreneurship (p. 914), or one of several undergraduate minors offered by the University without taking courses beyond those required for the electrical engineering major.

The electrical engineering major requires the following track and elective focus area courses.

REQUIRED COMPUTER TRACK COURSES

Students in the computer track complete all of these:
- ECE:3330 Introduction to Software Design  3 s.h.
- ECE:3350 Computer Architecture and Organization  3 s.h.
- ECE:3360 Embedded Systems and Systems Software  3 s.h.
- CS:2210 Discrete Structures  3 s.h.
- CS:3330 Algorithms  3 s.h.

REQUIRED ELECTRICAL TRACK COURSES

Students in the electrical track complete all of these:
- ECE:3400 Linear Systems II  3 s.h.
- ECE:3410 Electronic Circuits  4 s.h.
- ECE:3500 Communication Systems  3 s.h.
- ECE:3600 Control Systems  3 s.h.
- ECE:3720 Electrical Engineering Materials and Devices  3 s.h.

TRACK BREADTH AND DEPTH ELECTIVES

Students complete one track breadth elective and one track depth elective.

Students in the computer track must choose their track breadth elective from the list of required electrical track courses above. Students in the electrical track must choose their track breadth elective from the list of required computer track courses.

The track depth elective must be an advanced course in a subject area within the student's track—normally numbered 3000 or above—for which one of the required track courses is a prerequisite. For a complete list of depth electives for each track, consult the Department of Electrical and Computer Engineering.

ELECTIVE FOCUS AREA COURSES

Students complete seven elective focus area courses, which they choose according to guidelines established by the department. For a list of EFAs and course selection guidelines, see ECE Elective Focus Areas on the Department of Electrical and Computer engineering web site.

Joint B.S.E./M.S.

The College of Engineering offers a joint (fast-track) Bachelor of Science in Engineering/Master of Science for electrical engineering undergraduate students who intend to earn an M.S. in electrical and computer engineering. B.S.E./M.S. students may take up to 12 s.h. of graduate-level course work and do thesis-level research while they are still undergraduates. They may count 9 s.h. of
graduate course work toward both degrees. Once students
complete the requirements for the bachelor’s degree, they
are granted the B.S.E., and they normally complete the
M.S. one year later.

To be admitted to the joint degree program, students
must have completed at least 80 s.h., must have a
cumulative g.p.a. of at least 3.25, and must submit a letter
of application to the chair of the Department of Electrical
and Computer Engineering.

Graduate Programs of Study

- Master of Science in electrical and computer
  engineering (software engineering subprogram
  available)
- Doctor of Philosophy in electrical and computer
  engineering

The Department of Electrical and Computer Engineering
stimulates excellence in scholarship and research through
close contact with the faculty and programs tailored to fit
students’ individual needs.

Students select an advisor and, with the advisor, plan an
individual program bounded only by the broad guidelines
of the Graduate College and the program. The department
maintains close interdisciplinary ties with other University
of Iowa departments, especially with the Departments of
Physics and Astronomy, Computer Science, Mechanical
and Industrial Engineering, and Biomedical Engineering,
and the Carver College of Medicine. Principal areas of
graduate study include waves and materials, computer
systems, wireless communications, signal and image
processing, computational genomics, and control systems
and systems theory.

Research and Study Areas

BIOINFORMATICS AND COMPUTATIONAL
BIOLOGY

The Center for Bioinformatics and Computational Biology
(CBCB) is a multidisciplinary research enterprise that
encompasses numerous laboratories and collaborates with
many graduate programs on campus. Students may earn
the Certificate in Informatics (p. 942) (Graduate College),
to augment their Ph.D. training in disciplines ranging from
molecular biology to biochemistry to computer science to
engineering.

Since 1994, the Coordinated Laboratory for Computational
Genomics, a CBCB affiliate, has engaged in a broad
range of research activities that complement the Human
Genome Project. Members of the laboratory develop
new hardware and software techniques for analysis and
annotation of genomic sequence, its transcription and
translation, and the proteome. Other efforts are aimed at
systematic capture and curation of phenotypic information
acquired from massive databases of clinical information
derived from collaborations with the College of Medicine.
The goal of these projects is to elucidate the mechanisms
of human disease and develop promising new methods for
cures and treatments.

The laboratory’s facilities include more than 200
workstations, 3 Linux clusters, and access to the NSF
TeraGrid and other high-performance computing facilities.
Projects in the laboratory frequently involve cutting-
edge genomic and proteomic instruments such as the
Roche 454 next-generation sequencing platform and
several high-throughput gene expression (microarray)
measurement platforms.

COMPUTER SYSTEMS AND VLSI CIRCUITS

Research emphasis is directed toward design and test of
very-large-scale integrated (VLSI) circuits, high-
performance computing and networking, and intelligent
agent systems. Research in the VLSI area involves
development of techniques and algorithms that assist in
synthesis and testing of large-scale logic circuits,
and incorporation of these techniques into computer-
aided design tools. Current projects include new pattern
sources for built-in-test, efficient test pattern generation,
generation of compact test sets, and methods for reducing
test data volumes.

High-performance computing research involves
development of collaborative and parallel computing
environments and associated software tools, and use of
these facilities and tools in varied application domains,
including image processing and computational biology.
Current work in networking focuses on protocols and
layer-integration schemes that support high-performance
wireless networking, and on control and coordination of
mobile ad hoc networks. Current research facilities in
these areas include several large cluster computers and an
experimental asynchronous transfer mode (ATM) network.

Departmental facilities that support this work include
Linux and Windows workstations and server nodes that
provide college-wide networked computer services.
Advanced computing facilities also are available at
national supercomputing centers and federal laboratories.

CONTROL SYSTEMS AND SYSTEMS THEORY

Control systems and system theory use feedback to
improve the predictability and efficiency of engineered
systems ranging from electronic amplifiers to
vehicle guidance systems, manufacturing processes,
communication channels, and the Internet. Work in control
systems and systems theory draws heavily on results from
mathematics, physics, and computer science to model
the systems that are to be controlled and to implement
feedback controllers.

Current research emphasizes optimal, adaptive, digital,
robust, and stochastic control and the control of discrete
event dynamical systems. Recent work has concerned
the estimation, identification, and robust control of linear
and nonlinear dynamical systems; set membership
identification, control over wireless communication
channels; coordinated fault tolerant control of unmanned
vehicles; use of control theory to analyze distributed
computing, communications, and manufacturing systems;
interplay between communications and control; design of
fast digital controllers using subband coding; and multirate
control systems.

Research in control systems and systems theory is
supported by extensive computing resources and
collaborations with local industry, the Center for
Computer-Aided Design, the National Advanced Driving
Simulator (NADS), and the Carver College of Medicine.

NANOSCALE ELECTRONICS AND SPINTRONICS

Nanoscale devices and systems provide solutions for low-
power logic devices, high-density 3-D stackable electronic
and/or spintronic memory elements, and solar/waste
energy harvesting applications. Current nanoscale and
spintronics work involves post-CMOS transistor research to
extend Moore's law in this century; use of novel magnetic and nonmagnetic nanomaterials for enhanced-CMOS and nonvolatile memory; and intelligent solar cells, thermoelectric devices, fuel cells and batteries for efficient solid-state energy conversion. Departmental researchers are pursuing experimental, theoretical, and large-scale computational approaches.

**SIGNAL AND IMAGE PROCESSING**

Research in image processing and basic and applied signal processing is supported by a digital signal processing laboratory and an image analysis laboratory. Collaborative research with faculty in the Departments of Radiology, Neurology, Psychiatry, Internal Medicine, Ophthalmology and Visual Sciences, Radiation Oncology, and Biomedical Engineering is directed at quantitative analysis of medical images.

In the area of signal processing, current projects include analysis and design of efficient adaptive algorithms for signal processing, efficient coding and transmission of speech, speech processing aids for the hearing-impaired, robust equalization of uncertain channels, application of neural networks to communications systems, multirate signal processing, and subband coding and channel equalization.

Image processing and analysis projects include development of novel methods for image segmentation, image registration, computer-aided detection and diagnosis, early identification of disease patterns from medical image data, computer-aided surgical planning, virtual and augmented reality medical image visualization, building anatomic atlases, and a broad range of translational medicine projects focusing on research and clinical applications of the novel methods. The areas of interest span all scales, from molecules to cells to small animals to humans, and cover a broad range of organ systems and targeted diseases. The spectrum of medical imaging modalities used for research and applications in image processing and analysis is equally broad, encompassing all existing modalities, including X-ray, CT, MR, PET, SPECT, and OCT.

The Medical Image Analysis Labs consist of several specialized facilities for digital image processing. They are equipped with state-of-the-art devices for data storage, transfer, visualization, and analysis. High-capacity data storage devoted to image processing research offers more than 35 TB of online hard disk space. An augmented reality medical image visualization lab serves as a high-performance collaborative resource for the Iowa Institute for Biomedical Imaging. The institute makes additional resources available to image processing research, including small and large animal as well as human research scanning facilities, and provides a backbone for interdisciplinary medical image analysis research to electrical and computer engineering graduate students and faculty.

**WAVES AND MATERIALS**

Research in this area is carried out primarily in the Iowa Advanced Technology Laboratories, a well-equipped, modern facility two blocks from the Engineering Building, and in Van Allen Hall. Current research topics are optical and electronic properties of semiconductors, semiconductor devices, electro-optics, nonlinear optics, nonlinear wave propagation in plasmas, nanotechnology, and medical devices.

Much work is done in collaboration with other University of Iowa departments, including the Departments of Physics and Astronomy, Chemistry, Internal Medicine, and Neurosurgery. Facilities include two molecular beam epitaxy reactors (in physics and astronomy), a microfabrication laboratory with micrometer resolution capabilities, electrical characterization capability to 22 GHz, several Ti-sapphire lasers, a mid-infrared optical parametric oscillator, and plasma equipment for nonlinear wave plasma interaction studies.

Examples of current projects are the design and fabrication of diode lasers based on the bandgap engineering of antimony and arsenic-based III-V compound semiconductors, phase control of laser arrays, development of an all-optical power equalizer, characterization of quantum well devices, nonlinear waveguide devices, development of a noncontact method to measure transport properties, plasma and optical soliton excitation and propagation, development of cellular probes, and a noninvasive glucose sensor for medical research.

**WIRELESS COMMUNICATION SYSTEMS**

The department is engaged in research using wireless sensor networks (WSNs), which consist of spatially distributed autonomous devices that use sensors to cooperatively monitor physical or environmental conditions such as temperature, sound, vibration, pressure, motion, and pollutants at different locations. WSNs are used for environment and habitat monitoring, healthcare applications, home automation, and traffic control. Current research includes the application of WSN, traditional telemetry, and commercial cellular communication infrastructure for geosciences data collection (e.g., rainfall, water quality, soil moisture).

Another important research interest involving distributed sensor networks is the distributed control of power systems, especially requirements of the next-generation electric grid with smart metering and distributed generation using small-scale wind and solar generators. Research on WSNs also includes the design of cooperative communication techniques for energy efficient WSNs and issues of localization, network organization, and control.

Research activities in communication systems focus on design and analysis of receivers for digital wireless communications, especially the development of effective and practical receivers for multiple-user wireless cellular systems in multipath channels. Projects include the removal of intersymbol interference by blind identification/ equalization, multiple-user detection in CDMA without power control, receiver structures for 3G wireless cellular systems, cooperative beam forming for ad hoc wireless networks, resource allocation in OFDM systems, and scheduling in wireless networks. Fundamental theoretical issues and practical implementation are emphasized.

**Master of Science**

The Master of Science program in electrical and computer engineering requires 30 s.h. of graduate credit with thesis and 36 s.h. of graduate credit without thesis. Either option may precede Ph.D. study.

M.S. students must maintain a cumulative g.p.a. of at least 3.00.

Thesis students must complete at least 12 s.h. from an approved list of electrical and computer engineering
courses and 6 s.h. in ECE:5999 Research: Electrical and Computer Engineering M.S. Thesis. Nonthesis students must complete at least 18 s.h. from an approved list of electrical and computer engineering courses; nonthesis students may count no more than 3 s.h. of independent study toward the degree. Courses required for the B.S.E. in electrical engineering do not count toward the M.S. requirements.

All M.S. students must successfully complete a final examination, which is conducted by a committee of at least three faculty members. One part of the final examination for thesis students consists of an oral defense of the thesis.

**M.S. Subprogram in Software Engineering**

A Master of Science subprogram in software engineering is available to both thesis and nonthesis students. The M.S. with software engineering subprogram requires the same amount of graduate credit as the M.S. without the subprogram: a minimum of 30 s.h. for the thesis option, and 36 s.h. for the nonthesis option. All rules for additional credit and the M.S. final examination are the same as for the M.S. without the subprogram. Successful completion of the subprogram results in a designation that specifies "(software engineering)" on a student's transcript.

The software engineering subprogram requires the following course work.

- **ECE:5310 Introduction to VLSI Design** 3 s.h.
- **ECE:5320 High Performance Computer Architecture** 3 s.h.
- **ECE:5330 Graph Algorithms and Combinatorial Optimization** 3 s.h.
- **ECE:5800 Fundamentals of Software Engineering** 3 s.h.
- **ECE:5810 Formal Methods in Software Engineering** 3 s.h.
- **ECE:5820 Software Engineering Languages and Tools** 3 s.h.
- **ECE:5830 Software Engineering Project** 3 s.h.

In addition to the courses listed above, thesis students complete another 3 s.h. of course work from the approved list of electrical and computer engineering courses; nonthesis students complete another 6 s.h.

**Doctor of Philosophy**

The Doctor of Philosophy program in electrical and computer engineering requires a minimum of 72 s.h. of graduate credit. At least 45 s.h. must be earned in formal course work (not in thesis work or other independent study), including 30 s.h. from an approved list of electrical and computer engineering courses. Each Ph.D. student's study plan must be approved by the student's advisor and by the graduate committee.

Acceptance to the Ph.D. program requires successful completion of the Ph.D. qualifying process. The qualifying process consists of two parts—an examination and a course breadth requirement. The half-day written exam is given once a year, late in the spring semester. It covers two subjects chosen by a student from a list of nine. Students normally are expected to take the qualifying examination within the first 30 s.h. of their graduate studies. A cumulative g.p.a. of at least 3.25 is required for admittance to the exam. Students who fail the examination may retake it only once the next time it is offered. To complete the breadth requirement, students must take two courses associated with the same list of nine subjects that the examination is drawn from and complete the courses with grades of at least A-minus. The breadth courses must not duplicate the subjects chosen for the examination and must be completed within the fourth semester of graduate study.

Ph.D. students take a Ph.D. qualifying examination and a Ph.D. comprehensive examination. They must successfully complete a research program that includes a minimum of 18 s.h. of Ph.D. research and culminates in the preparation of a thesis. Finally, the candidate must present a successful oral defense of the thesis.

Ph.D. students must maintain a cumulative g.p.a. of 3.25 or higher in all graduate course work.

Acceptance to the Ph.D. program requires successful completion of the Ph.D. qualifying examination. This all-day written exam is given once a year, late in the spring semester. It covers four areas chosen by a student from an extensive list. Students normally are expected to take the qualifying examination within the first 30 s.h. of their graduate studies. A cumulative g.p.a. of at least 3.25 is required for admittance to the exam. Students who fail the examination may retake it only once; the next time it is offered.

Following successful completion of the Ph.D. qualifying examination and invitation to the Ph.D. program, a student must complete the two-part Ph.D. comprehensive examination. The first part is a written research proposal that includes a thorough literature survey providing the motivation and background for the proposal. The second part is an oral examination.

Students must pass the Ph.D. qualifying examination before they may take the Ph.D. comprehensive exam, and they must complete the comprehensive exam no later than three calendar years after passing the qualifying exam. Students who fail to meet this deadline must retake the qualifying exam. The qualifying exam and the comprehensive exam may not be taken in the same semester.

The final requirement for completion of the Ph.D. program is the preparation and successful defense of the Ph.D. thesis. This must be completed no sooner than six months but no longer than three years after completion of the comprehensive examination.

**Admission**

Applicants must meet the admission requirements of the Graduate College; see the Manual of Rules and Regulations of the Graduate College.

M.S. applicants must have a g.p.a. of at least 3.00, and Ph.D. applicants must have a g.p.a. of at least 3.25, on all electrical and computer engineering, mathematics, and physics course work. M.S. applicants with a g.p.a. between 2.75 and 3.00 in electrical and computer engineering, mathematics, and physics course work may be admitted on probation, if warranted by other aspects of their academic records.

Students with baccalaureate degrees in related areas (e.g., physics, mathematics, and computer science) may be admitted on conditional status. They may be required to
complete additional course work, without earning graduate credit, before being granted regular status.

Each application is reviewed individually. Extenuating circumstances may permit deviations from the usual standards.

**Financial Support**

A number of fellowships, traineeships, assistantships, scholarships, and industrial grants are available to graduate students who qualify. These are awarded on a competitive basis.

**Facilities and Laboratories**

**Undergraduate Core**

Electrical and computer engineering provides core instruction for the college in electrical circuits, electronics, instrumentation, and computers. A key part of this core teaching responsibility lies in providing students with an early opportunity to use engineering laboratory instrumentation.

**Undergraduate Laboratories**

The department’s undergraduate laboratories include facilities for the study of electrical and electronic circuits, wireless communication, power and sustainable energy, signals and systems, microprocessor-based computers and systems, measurement automation, communication systems, control systems, computer-aided design of VLSI circuits, image processing, robotics, and optics. The laboratories are equipped with modern equipment, including digital oscilloscopes, computer-controlled virtual instrumentation, and software and hardware for embedded-systems development.

**Graduate Facilities and Laboratories**

The department has laboratories intended primarily for graduate research in the areas of bioinformatics, image processing, software engineering, electro-optics, control systems, medical imaging and image analysis, large-scale intelligent systems, and wireless communication. Linux and Windows workstations and server nodes provide college-wide networked computing support. Through cooperative arrangements, advanced computing facilities at national supercomputing centers, federal laboratories, and other universities are available for graduate research.

**Courses**

**Special Topics**

**ECE:0000 Cooperative Education Training Assignment: Electrical Engineering**

Electrical engineering students participating in the Cooperative Education Program register in this course during work assignment periods; registration provides a record of participation in the program on the student’s permanent record. Requirements: admission to Cooperative Education Program.

**ECE:0002 Half-time Cooperative Education Training Assignment: Electrical Engineering**

Registration for work assignment periods; for students participating in the Cooperative Education Program.

**ECE:2120 Art and Engineering**

3 s.h. Collaborative, interdisciplinary, cutting-edge opportunity to gain real world engineering experience while learning to think creatively and analytically to create engaging works of art; interdisciplinary collaboration and creative methodologies that enhance life-long creative practice of artists and engineers; basic electronics and Arduino prototyping platform to create programmable, sensor-driven, responsive circuits. Prerequisites: TDSN:2210 or CERM:2010 or MTLS:2910 or SCLP:2810. Same as TDSN:2205.

**ECE:2410 Principles of Electronic Instrumentation**

4 s.h. Principles of analog signal amplification, signal conditioning, filtering; operational amplifier circuit analysis and design; principles of operation of diodes, bipolar transistors, field effect transistors; discrete transistor amplifier analysis and design; laboratory included. Prerequisites: ENGR:2120 and PHYS:1612.

**ECE:3000 Professional Seminar: Electrical Engineering**

1 s.h. Professional aspects of electrical engineering presented through lectures and discussions by guest speakers, field trips, films, panel discussions. Requirements: junior standing.

**ECE:3998 Individual Investigations: Electrical Engineering**

arr. Individual projects for electrical engineering undergraduate students: laboratory study, engineering design project, analysis and simulation of an engineering system, computer software development, research.

**ECE:4880 Principles of Electrical Engineering Design**

3 s.h. Design problems requiring integration of subject matter from other required electrical and computer engineering courses. Prerequisites: ECE:2410 and ENGR:2730. Requirements: senior standing.

**ECE:4890 Senior Electrical Engineering Design**

3 s.h. Individual or team project; demonstration of completed project and formal engineering report. Prerequisites: ECE:4880. Requirements: completion of three required subprogram courses.

**Digital Systems, Computers, Software Engineering**

**ECE:3320 Introduction to Digital Design**

3 s.h. Modern design and analysis of digital switching circuits; combinational logic; sequential circuits and system controllers; interfacing and busing techniques; design methodologies using medium- and large-scale integrated circuits; lab arranged. Requirements: sophomore standing.

**ECE:3330 Introduction to Software Design**

3 s.h. Design of software for engineering systems; algorithm design and structured programming; data structures; introduction to object-oriented programming in Java; applications to engineering problems; lab arranged. Prerequisites: ENGR:2730.
**ECE:3350 Computer Architecture and Organization** 3 s.h.
Basic concepts; computer evolution, register transfer level design, simulation techniques, instruction sets (CISC and RISC), assembly language programming, ALU design, arithmetic algorithms and realization of arithmetic functions, hardwired and microprogrammed control, memory hierarchies, virtual memory, cache memory, interrupts and DMA, input/output; introduction to high-performance techniques, pipelining, multiprocessoring; introduction to hardware description languages (Verilog, VHDL); students design and simulate a simple processor. Offered fall semesters. Prerequisites: ECE:3320 and ENGR:2730.

**ECE:3360 Embedded Systems and Systems Software** 3 s.h.
Microprocessors and microcontrollers as components in engineering systems; embedded system design processes; microcontroller/microprocessor architecture; interrupts and traps; memory and device interfacing; low-level and high-level software design for embedded systems; examples of embedded system architecture and design; fundamentals of operating systems; tasks and processes; context switching and scheduling; memory and file management, interprocess communication; device drivers. Prerequisites: ENGR:2730.

**ECE:5129 Information Systems for Resource Management** 3 s.h.
Understanding and managing natural and engineered resources requiring data-reach foundation; management of data; complex data-driven technologies integrated into data and information systems (DIS); hands-on opportunity to develop or use capabilities of DIS for study or research area of interest (science, engineering, industrial operation); wind power generation, an emerging field in Iowa, used as a case study for illustrating key DIS components, links, and functionalities. Same as IE:5129, ME:5129, CEE:5129, GEOG:5129.

**ECE:5210 Bioinformatics Techniques** 3 s.h.
Informatics tools and techniques applied to modern problems in biomedicine and basic life sciences; common tools, experience applying tools in contemporary problem settings; genomics and genetics, how to sequence a genome, transcription and expression, SNPs, Perl, BioPerl, Perl modules, Ensembl API, BLAST/BLAT, NCBI, UCSC, Ensembl Genome browsers, linkage, association, disease gene identification. Prerequisites: BIOL:1411 and ENGR:1300. Same as BME:5320.

**ECE:5220 Computational Genomics** 3 s.h.
Introduction to computational methods used in genome analysis and functional genomics; biological sequence analysis, sequence database search, microarray data analysis, biological network analysis; in-depth coverage of principal genome science challenges and recent solutions. Prerequisites: BME:5320 and CS:3110 and (BIOS:4120 or STAT:3510). Same as BIOL:5320, BME:5330, GENE:5173.

**ECE:5300 Switching Theory** 3 s.h.
Switching algebras; combinational circuits—hazards, minimization, multiple-output networks; sequential circuits—critical races, essential hazards, fundamental-mode, pulse-mode, synchronous circuits-state assignment, state reduction; input-output experiments. Prerequisites: ECE:3320.

**ECE:5310 Introduction to VLSI Design** 3 s.h.
MOS devices and circuits; MOS transistor theory. MOS processing technologies, MOS device models; timing and power considerations; performance issues; scaling; various logic schemes; circuit techniques; clocking strategies; I/O structures; design styles; ASIC design; MOS subsystem design; system case studies, use of electronic design automation tools, introduction to hardware description languages, design synthesis, design projects; lab. Prerequisites: ECE:3320 and ECE:3410.

**ECE:5320 High Performance Computer Architecture** 3 s.h.
Problems involved in designing and analyzing current machine architectures using hardware description language (HDL) simulation and analysis, hierarchical memory design, pipeline processing, vector machines, numerical applications, multiprocessor architectures and parallel algorithm design techniques; evaluation methods to determine relationship between computer design and design goals. Prerequisites: CS:3620 or ECE:3350. Same as CS:5610.

**ECE:5330 Graph Algorithms and Combinatorial Optimization** 3 s.h.
Combinatorial optimization problems; time complexity; graph theory and algorithms; combinatorial optimization algorithms; complexity theory and NP-completeness; approximation algorithms; greedy algorithms and matroids. Prerequisites: ECE:3330.

**ECE:5380 Testing Digital Logic Circuits** 3 s.h.
Logic models for faults; fault detection in combinational and sequential circuits; fault-diagnosis; design for testability; random testing, compressed data testing, built-in testing. Prerequisites: ECE:3320.

**ECE:5800 Fundamentals of Software Engineering** 3 s.h.
Problem analysis, requirements definition, specification, design, implementation, testing/maintenance, integration, project management; human factors; management, technical communication; design methodologies; software validation, verification; group project experience. Prerequisites: CS:2820 or ECE:3330. Same as CS:5800.

**ECE:5810 Formal Methods in Software Engineering** 3 s.h.
Models, methods, and their application in all phases of software engineering process; specification methods; verification of consistency, completeness of specifications; verification using tools. Prerequisites: CS:2820 or ECE:3330. Recommendations: CS:4350. Same as CS:5810.

**ECE:5820 Software Engineering Languages and Tools** 3 s.h.
Modern agile software development practices for cloud and web-based applications, using state-of-the-art software engineering languages, tools, and technologies; agile software development practices, software-as-a-service (SAAS), and the Ruby on Rails Development Framework. Requirements: ECE:5800 or CS:5800; or graduate standing with solid understanding of object-oriented design and programming, and facility with at least one object-oriented programming language. Same as CS:5820.

**ECE:5830 Software Engineering Project** 3 s.h.
Team software development project using concepts and methodologies learned in earlier software engineering classes; practical aspects of large-scale software development. Prerequisites: ECE:5800 and ECE:5820. Same as CS:5830.

**Signal and Image Processing**

**ECE:2400 Linear Systems I** 3 s.h.
Introduction to continuous and discrete time signals and systems with emphasis on Fourier analysis; examples of signals and systems; notion of state and finite state machines; causality; linearity and time invariance; periodicity; Fourier transforms; frequency response; convolution; IIR and FIR filters, continuous and discrete Fourier transforms; sampling and reconstruction; stability. Prerequisites: ENGR:2120 and MATH:2560.

**ECE:3400 Linear Systems II** 3 s.h.
Continuation of ECE:2400, emphasis on Laplace and Z-transform analysis; unilateral and bilateral Laplace transform; region of convergence; stability; block diagram algebra; first- and second-order continuous and discrete time systems; Bode plots. Prerequisites: ECE:2400.

**ECE:3410 Electronic Circuits** 4 s.h.
Design and analysis of FET and BJT amplifiers; low, midrange, high-frequency analysis; difference amplifiers; feedback amplifiers; SPICE simulation; power amplifiers; digital logic families. Prerequisites: ECE:2400 and ECE:2410.

**ECE:5420 Power Electronics** 3 s.h.
Fundamental concepts and design techniques of power electronics circuits; switching power pole and various switch-mode DC to DC power conversion topologies; feedback control of switch-mode DC to DC power supplies; diode rectification of AC utility power and Power Factor Control (PFC) circuits; electromagnetic concepts and design of high-frequency inductors and transformers; electrically isolated switch-mode DC power supply topologies and soft-switching DC-DC converters and inverters; techniques for synthesis of DC and low-frequency AC sinusoidal voltages. Prerequisites: ENGR:2120 and PHYS:1611. Requirements: junior standing.

**ECE:5450 Pattern Recognition** 3 s.h.
Mathematical foundations and practical techniques of pattern recognition; adaptation, learning, description; statistical pattern recognition; syntactic pattern recognition, neural networks for recognition; fuzzy logic for recognition; nonstandard and combined pattern recognition approaches. Prerequisites: ECE:2400.

**ECE:5460 Digital Signal Processing** 3 s.h.
Theory, techniques used in representing discrete-time signals; system concepts in frequency and sampling domains; FIR and IIR digital filter theory, design and realization techniques; theory, application of discrete Fourier transforms/FFT. Prerequisites: ECE:3400.

**ECE:5480 Digital Image Processing** 3 s.h.
Mathematical foundations and practical techniques for digital manipulation of images; image sampling, compression, enhancement, linear and nonlinear filtering and restoration; Fourier domain analysis; image pre-processing, edge detection, filtering; image segmentation. Prerequisites: BME:2200 or ECE:2400. Same as BME:5220.

**ECE:5620 Electric Power Systems** 3 s.h.
Overview of electric power systems; single phase and three-phase representations of electric power signals and electromagnetic concepts; AC transmission lines and underground cables, power flow in a power system network, AC power transformers, High Voltage DC (HVDC) power transmission, electric power distribution, synchronous generators, voltage regulation and stability, power system transients and dynamic stability, control of interconnected power systems, transmission line faults, transient over-voltages and surge protection. Prerequisites: ENGR:2120 and PHYS:1611. Requirements: junior standing.

**ECE:7450 Magnetic Resonance Imaging Systems**
Mathematical foundations and practical implementation for magnetic resonance imaging (MRI); principles of image formation using Fourier and projection techniques, non-Cartesian sampling, tomographic image reconstruction, sources of artifacts and their correction. Prerequisites: ECE:5460 and ECE:5480.

**ECE:7470 Image Analysis and Understanding** 3 s.h.
Mathematical foundations and practical techniques of digital image analysis and understanding; image segmentation (from edges and regions), object description (from boundaries, regions, scale, scale insensitive descriptions, 3-D shape, texture) pattern recognition (statistical and syntactic methods, cluster analysis), image understanding (knowledge representation, control strategies, matching, context, semantics), image analysis and understanding systems; lab arranged. Prerequisites: ECE:5480.

ECE:7480 Advanced Digital Image Processing 3 s.h.
Advanced local operators (scale-space imaging, advanced edge detection, line and corner detection), image morphology (binary/grayscale scale operators, morphological segmentation and watershed), digital topology and geometry (binary/fuzzy digital topology, distance functions, skeletonization), color spaces, wavelets and multi-resolution processing (Haar transform, multi-resolution expansions, wavelet transforms in one or two dimensions, fast wavelet transform, wavelet packets), image registration (intensity correlation, mutual information, and landmark-based deformable registration methods). Prerequisites: ECE:5460 and ECE:5480.

ECE:7920 ECE Graduate Seminar on Image Processing, Computer Vision and Medical Imaging 0 s.h.
Recent advances and research in image processing, computer vision, and medical imaging; presentation by guest lecturers, faculty, students. Requirements: graduate standing.

Communication and Information

ECE:3500 Communication Systems 3 s.h.
Introduction to analog and digital communications, with an emphasis on modulation and noise analysis; Fourier analysis, probability theory, random variable and processes, AM, FM, pulse-coded modulation, binary digital modulation, SNR analysis of AM and FM, BER analysis of digital modulation schemes. Prerequisites: ECE:3400.

ECE:3540 Communication Networks 3 s.h.
Communication networks, layered network architectures, applications, network programming interfaces (e.g., sockets), transport, congestion, routing, data link protocols, local area networks, emerging high-speed networks, multimedia networks, network security, Internet protocol; technology examples. Prerequisites: ENGR:2730. Corequisites: STAT:2020.

ECE:5500 Communication Theory 3 s.h.
Random processes, source coding, digital transmission at baseband, optimum receiver design for Gaussian noise, error probability and power spectrum analysis, signal design for bandlimited channels, digital carrier modulation, bandwidth/energy/error probability tradeoffs, coding for error detection and correction. Prerequisites: ECE:3500 and STAT:2020.

ECE:5520 Introduction to Information and Coding Theories 3 s.h.
Quantitative measure of information; source encoding; error detecting codes; block and convolutional codes, design of hardware and software implementations; Viterbi decoding. Prerequisites: ECE:3500 and STAT:2020.

ECE:5530 Wireless Sensor Networks 3 s.h.
Wireless sensor networks overview; antennas, radio propagation models; WSN power and energy considerations, engineering issues, batteries, networks layers, stacks; medium access control (MAC); spread spectrum, FHSS, CDMA; infrastructure establishment; WSN routing; localization; synchronization; sensors, RFID; WSN case studies; lab. Prerequisites: ECE:3500 and STAT:2020. Requirements: senior standing.

Controls

ECE:3600 Control Systems 3 s.h.
Fundamental concepts of linear feedback control, mathematical modeling, transfer functions, system response, feedback effects, stability, root-locus and frequency response analysis and design, compensation, lab arranged. Prerequisites: ECE:2400.

ECE:5430 Electric Drive Systems 3 s.h.
Basic characteristics of DC and AC electric motors and their associated power electronics interfaces; applications of electric machines and drives that are essential for wind turbines, electric and hybrid-electric; emphasis on vehicles; electric machines in context of overall drives and associated applications; space-vector theory used to analyze electric machines and drives; DC motor/ generator characteristics and control; AC single phase and three-phase motor characteristics and feedback control, including AC synchronous and induction motors. Prerequisites: ENGR:2120 and PHYS:1611. Requirements: junior standing.

ECE:5600 Control Theory 3 s.h.
State space approach; controllability, observability, canonical forms, Luenberger observers, feedback control via pole placement, stability, minimal realization and optimal control. Prerequisites: ECE:3600. Same as ME:5360.

ECE:5630 Sustainable Energy Conversion 3 s.h.
Overview of sustainable energy conversion technologies; thermal energy conversion; Carnot and Rankine cycles; solar resource and raw energy availability, PV solar cell characteristics, solar panel construction, Maximum Power Point (MPP) tracking and utility grid interface; wind energy conversion resource and available energy, wind turbine configurations, electrical power interface electronics; ocean energy conversion tidal and wave resources and conversion technologies; tidal basin containment conversion and tidal current turbine systems. Prerequisites: ENGR:2120 and PHYS:1611. Requirements: junior standing.

ECE:5640 Computer-Based Control Systems 3 s.h.
Discrete and digital control systems; application of computers in control; sampling theorem; discrete time system models; analysis and design of discrete time systems; control design by state variable and input/output methods; advanced topics in digital controls; lab. Prerequisites: ECE:5600. Same as ME:5362.
Waves and Materials

ECE:3700 Electromagnetic Theory 3 s.h.
Electric and magnetic forces, Maxwell’s equations, wave propagation; applications, including radiation, transmission lines, circuit theory. Prerequisites: MATH:3550 and PHYS:1612.

ECE:3720 Electrical Engineering Materials and Devices 3 s.h.
Fundamentals of semiconductor physics and devices; principles of the p-n junction diode, bipolar transistor, field effect transistor. Prerequisites: ECE:3410 and PHYS:1612.

ECE:4720 Introductory Optics 3 s.h.
Geometrical and physical optics; interference; diffraction; polarization; microscopic origins of macroscopic optical properties of matter; optical activity; electro-optical, magneto-optical, acousto-optical phenomena; spontaneous Brillouin, Raman, Rayleigh scattering. Prerequisites: PHYS:3812. Same as PHYS:4720.

ECE:4728 Introductory Solid State Physics 3 s.h.
Phenomena associated with solid state; classification of solids and crystal structures, electronic and vibrational properties in solids; thermal, optical, magnetic, dielectric properties of solids. Prerequisites: MATH:2850 and PHYS:3741. Same as PHYS:4728.

ECE:5700 Advanced Electromagnetic Theory 3 s.h.
Time varying fields; plane wave propagation, reflection, refraction; waves in anisotropic media transmission lines, impedance matching, Smith chart; metallic and dielectric wave guides; resonators; antennas, antenna arrays. Prerequisites: ECE:3700.

ECE:5720 Solid State Physical Electronics 3 s.h.
Advanced topics in semiconductor physics and devices; elementary concepts in quantum and statistical mechanics, diodes, bipolar transistor, field-effect transistor. Prerequisites: ECE:3720.

ECE:5780 Optical Signal Processing 3 s.h.
Linear systems description of optical propagation; diffraction and angular plane wave spectrum; lenses as Fourier transformers, lens configurations as generalized optical processors; lasers, coherence, spatial frequency analysis; holography; convolvers, correlators, matched filters; synthetic aperture radar; optical computing. Prerequisites: for ECE:5780 — ECE:5700; for PHYS:4820 — PHYS:3812. Same as PHYS:4820.

ECE:5790 Electro Optics 3 s.h.
Wave equation solutions; optical birefringence; finite beam propagation in free space, dielectric waveguides and fibers; optical resonators; nonlinear phenomena; electro-optic, acousto-optic modulation; optical detection, noise; application to communication systems. Prerequisites: for ECE:5790 — ECE:3700; for PHYS:4726 — PHYS:3812. Same as PHYS:4726.

ECE:6720 Nonlinear Optics 3 s.h.

ECE:6726 Laser Principles 3 s.h.

ECE:7720 Semiconductor Physics 3 s.h.
Electronic, optical, and materials properties of semiconductors. Prerequisites: PHYS:4728 and PHYS:5742. Same as PHYS:7720.

Graduate Seminars, Advanced Topics, Research

ECE:5000 Graduate Seminar: Electrical and Computer Engineering 0 s.h.
Presentation and discussion of recent advances and research in electrical and computer engineering by guest lecturers, faculty, students. Requirements: graduate standing.

ECE:5995 Contemporary Topics in Electrical and Computer Engineering arr.
New topics or areas of study not offered in other electrical and computer engineering courses; based on faculty/student interest; not available for individual study.

ECE:5998 Individual Investigations: Electrical and Computer Engineering arr.
Individual projects for electrical and computer engineering graduate students; laboratory study, engineering design project, analysis and simulation of an engineering system, computer software development, research. Requirements: graduate standing.

Experimental and/or analytical investigation of approved topic for partial fulfillment of requirements for M.S. degree with thesis in electrical and computer engineering. Requirements: graduate standing.

Current research. Same as PHYS:7930.

ECE:7995 Advanced Topics in Electrical and Computer Engineering arr.
Discussion of current literature in electrical and computer engineering.

Experimental and/or analytical investigation of approved topic for partial fulfillment of requirements for Ph.D. in electrical and computer engineering.
Mechanical and Industrial Engineering

Chair
• Ching-Long Lin

Undergraduate majors: industrial engineering (B.S.E.); mechanical engineering (B.S.E.)
Graduate degrees: M.S. in industrial engineering (optional concentration in wind power management); Ph.D. in industrial engineering; M.S. in mechanical engineering; Ph.D. in mechanical engineering
Faculty: http://www.engineering.uiowa.edu/mie/people
Web site: http://www.engineering.uiowa.edu/mie/

The Department of Mechanical and Industrial Engineering offers distinct undergraduate and graduate degrees and research programs in industrial engineering and in mechanical engineering. It also is the administrative home of the undergraduate Certificate in Wind Energy (p. 915).

INDUSTRIAL ENGINEERING

Industrial engineering is concerned with analysis, design, and implementation of systems through optimal use of resources—human, material, energy, information, and financial. Systems may range from small units to extremely large operations. In order to accomplish these activities, the industrial engineer must be skilled in mathematics, physical sciences, management, and human relations as well as manufacturing, computer systems, economics, optimization, human behavior, and systems analysis and design.

Industrial engineers have many opportunities for employment and service in industrial, government, research, and public service organizations. Employment opportunities are among the most varied in the engineering field. Industrial engineers hold positions as advisors to management or may participate directly in management decisions. Representative job titles include industrial engineer, manufacturing engineer, systems analyst, quality specialist, operations research analyst, internal consultant, human factors specialist, supervisor, and manager. Industrial engineers are employed by manufacturing and energy firms, wind turbine manufacturers, government agencies, and service organizations such as airlines, banks, hospitals, health care groups, and consulting companies.

MECHANICAL ENGINEERING

Mechanical engineering is broadly concerned with energy, manufacturing, and design of machines. Mechanical engineers conceive, plan, design, and direct the manufacture, distribution, and operation of a wide variety of devices, machines, and systems—including complex human-machine systems—for energy conversion, biofuel production, environmental control, materials processing, transportation, materials handling, and other purposes. Major subspecialties of mechanical engineering include thermal-fluids engineering and mechanical systems engineering.

Thermal-fluid phenomena occur in many engineering systems and devices, such as aircraft; automobiles; off-road vehicles; ships; gas turbines; heat exchangers; material processes; heating, ventilating, air-conditioning, and refrigerating systems; hydraulic and wind turbines; airbag inflators; fuel cells; biofuel processes; environmental control devices; and biomedical systems.

Machines and mechanical systems are the foundations of human technology. Mechanical systems are found in mechanical engineering systems and devices such as manufacturing equipment, medical equipment, ground vehicles, heavy equipment, farm equipment, aircraft, ships, home appliances, packaging machinery, wind turbine blades and gearboxes, robots, and biomedical systems.

Mechanical engineers find a wide variety of career opportunities in industry, government, and education. Mechanical engineers form an integral part of most industries, including aerospace firms, energy companies, automobile manufacturers, health care providers, food- and metal-processing industries, petroleum refineries, electronic and computer manufacturers, heavy construction and agricultural vehicle manufacturers, wind turbine manufacturers, thermal comfort equipment firms, farm equipment firms, and consulting companies.

Undergraduate Programs of Study
• Major in industrial engineering (Bachelor of Science in Engineering)
• Major in mechanical engineering (Bachelor of Science in Engineering)

INDUSTRIAL ENGINEERING

The educational objective of the B.S.E. program in industrial engineering is to produce graduates who, within a few years of graduation:
• will have successful careers in engineering and beyond and will have assumed professional roles of increasing responsibility and impact;
• will have acquired new knowledge and expertise through professional development opportunities or advanced education; and
• will be engaged in workplace, professional, or civic communities.

Visit Industrial Engineering Program Educational Objectives to learn more.

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• will have successful careers in engineering and beyond and will have assumed professional roles of increasing responsibility and impact;
• will have acquired new knowledge and expertise through professional development opportunities or advanced education; and
• will be engaged in workplace, professional, or civic communities.

Visit Mechanical Engineering Program Educational Objectives to learn more.

B.S.E.: Industrial Engineering

The Bachelor of Science in Engineering requires a minimum of 128 s.h. The major in industrial engineering requires a strong foundation of courses in engineering
science, mathematics, design, manufacturing, social science, and humanities.

Advanced work includes specialty courses in human factors and ergonomics, management, information systems, manufacturing, quality control, and operations research. Design is an integral part of the undergraduate program; all students complete a comprehensive design experience.

All engineering students complete the B.S.E. core requirements, which include RHET:1030 Rhetoric, ENGR:1100 Engineering Problem Solving I, ENGR:1300 Engineering Problem Solving II, and courses in chemistry, engineering mathematics and fundamentals, and physics. They must earn a grade of C-minus or higher in the core requirements MATH:1550 Engineering Mathematics I: Single Variable Calculus and MATH:1560 Engineering Mathematics II: Multivariable Calculus.

They also complete the curriculum designed for their major program, which covers four major stems: mathematics and basic sciences, engineering topics, an elective focus area, and the general education component (15 s.h. of humanities and social science courses). For information about the curriculum stems, see Bachelor of Science in Engineering (p. 841) in the Catalog.

Students must select elective focus area courses according to guidelines established by the Department of Mechanical and Industrial Engineering. See "Elective Focus Area" after the following curriculum list.

The following study plan includes the B.S.E. core requirements and the curriculum for the industrial engineering major. Some courses in the curriculum are prerequisites for others. Students must complete a course's prerequisites before they may register for the course. Those who take courses in the order below satisfy the prerequisite requirements automatically.

**FIRST YEAR**

**First Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGR:1000 Engineering Success for First-Year Students</td>
<td>1 s.h.</td>
</tr>
<tr>
<td>ENGR:1100 Engineering Problem Solving I</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>CHEM:1110 Principles of Chemistry I</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>MATH:1550 Engineering Mathematics I: Single Variable Calculus</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>RHET:1030 Rhetoric</td>
<td>4-5 s.h.</td>
</tr>
</tbody>
</table>

**Second Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGR:1300 Engineering Problem Solving II</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>MATH:1560 Engineering Mathematics II: Multivariable Calculus</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>MATH:2550 Engineering Mathematics III: Matrix Algebra</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>PHYS:1611 Introductory Physics I</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>General education component course</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

**SECOND YEAR**

**First Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>IE:2000 Industrial Engineering Sophomore Seminar</td>
<td>0 s.h.</td>
</tr>
<tr>
<td>ENGR:2110 Engineering Fundamentals I: Statics</td>
<td>2 s.h.</td>
</tr>
</tbody>
</table>

**ENGR:2120 Engineering Fundamentals II: Electrical Circuits | 3 s.h.**

**ENGR:2130 Engineering Fundamentals III: Thermodynamics | 3 s.h.**

**MATH:2560 Engineering Mathematics IV: Differential Equations | 3 s.h.**

**PHYS:1612 Introductory Physics II | 3 s.h.**

**PSY:1001 Elementary Psychology | 3 s.h.**

**Second Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>IE:2500 Engineering Economy</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>IE:3500 Information Systems Design</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ENGR:2720 Materials Science</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>STAT:2020 Probability and Statistics for the Engineering and Physical Sciences</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>Elective focus area course</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

**THIRD YEAR**

**First Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>IE:3000 Professional Seminar: Industrial Engineering</td>
<td>0 s.h.</td>
</tr>
<tr>
<td>IE:3400 Human Factors</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>IE:3610 Stochastic Modeling</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>IE:3700 Operations Research</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ENGR:2760 Design for Manufacturing</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>General education component course</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

**Second Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>IE:3300 Manufacturing Systems</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>IE:3450 Ergonomics</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>IE:3750 Digital Systems Simulation</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>IE:3760 Applied Linear Regression</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>General education component course</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>Elective focus area course</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

**FOURTH YEAR**

**First Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>IE:3000 Professional Seminar: Industrial Engineering</td>
<td>0 s.h.</td>
</tr>
<tr>
<td>IE:3350 Process Engineering</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>IE:3600 Quality Control</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>General education component course</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>Elective focus area courses</td>
<td>6 s.h.</td>
</tr>
</tbody>
</table>

**Second Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>IE:4600 Industrial Engineering Design Project</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>Elective focus area courses (including math/ science elective)</td>
<td>12 s.h.</td>
</tr>
<tr>
<td>Systems elective course</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

**Elective Focus Area**

The industrial engineering program offers a variety of elective focus area options, including standard focus areas developed and maintained by the program and flexible focus areas tailored to individual student interests. For more detailed information about elective focus areas, see Bachelor of Science in Engineering (p. 841) in the Catalog. For a list of standard industrial engineering elective focus area options and guidelines for tailored elective focus areas, see Industrial Engineering Undergraduate
Program on the Department of Mechanical and Industrial Engineering web site.

Joint B.S.E./M.S.: Industrial Engineering

The College of Engineering offers a joint (fast-track) Bachelor of Science in Engineering/Master of Science for industrial engineering undergraduate students who intend to earn an M.S. in industrial engineering. B.S.E./M.S. students may take up to 12 s.h. of graduate-level course work, attend the program's graduate seminar, and work with a faculty member on a master's thesis project while they are still undergraduates. They may count 6 s.h. of graduate course work toward both degrees. Once students complete the requirements for the bachelor's degree, they are granted the B.S.E., and they normally complete the M.S. one year later.

To be admitted to the joint degree program, students must have completed at least 80 s.h., must have a cumulative g.p.a. of at least 3.25, and must submit a letter of application to the chair of the Department of Mechanical and Industrial Engineering.

Some students in undergraduate majors other than industrial engineering may be admitted to the combined program; they must meet the same admission requirements as industrial engineering majors. In some cases, they may be required to take additional course work to meet the prerequisite requirements for upper-level courses.

B.S.E.: Mechanical Engineering

The Bachelor of Science in Engineering requires a minimum of 128 s.h. The major in mechanical engineering lays a foundation in the basic disciplines of mathematics, physics, and chemistry and in the engineering sciences of statics, dynamics, thermodynamics, mechanics of deformable bodies, mechanics of fluids and transfer processes, materials science, and electrical sciences. An understanding of these sciences enables mechanical engineers to design parts of systems and understand whole systems; plan the production and use of energy, plan and operate industrial manufacturing facilities, and design automatic control systems for machines and other mechanical systems.

Mechanical engineering students develop an awareness of social and humanistic issues relating to business, environment, government, history, language, religion, and international relations. They also acquire an appreciation of professional and ethical responsibilities.

All engineering students complete the B.S.E. core requirements, which include RHET:1030 Rhetoric, ENGR:1100 Engineering Problem Solving I, ENGR:1300 Engineering Problem Solving II, and courses in chemistry, engineering mathematics and fundamentals, and physics. They must earn a grade of C-minus or higher in the core requirements MATH:1550 Engineering Mathematics I: Single Variable Calculus and MATH:1560 Engineering Mathematics II: Multivariable Calculus.

They also complete the curriculum designed for their major program, which covers four major stems: mathematics and basic sciences, engineering topics, an elective focus area, and the general education component (15 s.h. of humanities and social science courses). For information about the curriculum stems, see Bachelor of Science in Engineering (p. 841) in the Catalog.

Upper-level students work on team projects in a senior capstone design course, ME:4086 Mechanical Engineering Design Project. Some students may arrange to participate in established research projects.

Students must select elective focus area courses according to guidelines established by the Department of Mechanical and Industrial Engineering. See "Elective Focus Area" after the following curriculum list.

The following study plan includes the B.S.E. core requirements and the curriculum for the mechanical engineering major. Some courses in the curriculum are prerequisites to others. Students must complete a course's prerequisites before they may register for the course. Those who take courses in the order below satisfy the prerequisite requirements automatically.

**FIRST YEAR**

**First Semester**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGR:1000</td>
<td>Engineering Success for First-Year Students (credit does not count toward B.S.E. degree)</td>
<td>1 s.h.</td>
</tr>
<tr>
<td>ENGR:1100</td>
<td>Engineering Problem Solving I</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>CHEM:1110</td>
<td>Principles of Chemistry I</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>MATH:1550</td>
<td>Engineering Mathematics I: Single Variable Calculus</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>RHET:1030</td>
<td>Rhetoric</td>
<td>4 s.h.</td>
</tr>
</tbody>
</table>

**Second Semester**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGR:1300</td>
<td>Engineering Problem Solving II</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>MATH:1560</td>
<td>Engineering Mathematics II: Multivariable Calculus</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>MATH:2550</td>
<td>Engineering Mathematics III: Matrix Algebra</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>PHYS:1611</td>
<td>Introductory Physics I</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>General education component course</td>
<td>3 s.h.</td>
<td></td>
</tr>
</tbody>
</table>

**SECOND YEAR**

**First Semester**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ME:2020</td>
<td>Mechanical Engineering Sophomore Seminar</td>
<td>0 s.h.</td>
</tr>
<tr>
<td>ENGR:2110</td>
<td>Engineering Fundamentals I: Statics</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>ENGR:2120</td>
<td>Engineering Fundamentals II: Electrical Circuits</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ENGR:2130</td>
<td>Engineering Fundamentals III: Thermodynamics</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>MATH:2560</td>
<td>Engineering Mathematics IV: Differential Equations</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>PHYS:1612</td>
<td>Introductory Physics II</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>General education component course</td>
<td>3 s.h.</td>
<td></td>
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</tbody>
</table>

**Second Semester**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGR:2710</td>
<td>Dynamics</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ENGR:2720</td>
<td>Materials Science</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ENGR:2750</td>
<td>Mechanics of Deformable Bodies</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ENGR:2760</td>
<td>Design for Manufacturing</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>Elective focus area course</td>
<td>3 s.h.</td>
<td></td>
</tr>
</tbody>
</table>
THIRD YEAR
First Semester
ME:3091 Professional Seminar: Mechanical Engineering 0 s.h.
ME:3351 Engineering Instrumentation 2 s.h.
ENGR:2510 Fluid Mechanics 4 s.h.
ENGR:2730 Computers in Engineering 2-3 s.h.
MATH:3550 Engineering Mathematics V: Vector Calculus 3 s.h.
STAT:2020 Probability and Statistics for the Engineering and Physical Sciences 3 s.h.
Elective focus area course 3 s.h.
Second Semester
ME:3040 Thermodynamics II 3 s.h.
ME:3045 Heat Transfer 3 s.h.
ME:3052 Mechanical Systems 4 s.h.
General education component course 3 s.h.
Elective focus area course 3 s.h.
FOURTH YEAR
First Semester
ME:3091 Professional Seminar: Mechanical Engineering 0 s.h.
ME:4048 Energy Systems Design 4 s.h.
ME:4055 Mechanical Systems Design 3 s.h.
General education component course 3 s.h.
Elective focus area courses 6 s.h.
Second Semester
ME:4080 Experimental Engineering 4 s.h.
ME:4086 Mechanical Engineering Design Project 3 s.h.
General education component course 3 s.h.
Elective focus area courses 6 s.h.
Elective Focus Area
The mechanical engineering program offers a variety of elective focus area options, including standard focus areas developed and maintained by the program and flexible focus areas tailored to individual student interests. For more detailed information about elective focus areas, see Bachelor of Science in Engineering (p. 841) in the Catalog. For a list of standard mechanical engineering elective focus area options and guidelines for tailored elective focus areas, see Mechanical Engineering Undergraduate Program on the Department of Mechanical and Industrial Engineering web site.

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To be admitted to the joint degree program, students must have completed at least 80 s.h., must have a cumulative g.p.a. of at least 3.25, and must submit a letter of application to the chair of the Department of Mechanical and Industrial Engineering.

Certificate in Wind Energy
The Department of Mechanical and Industrial Engineering (College of Engineering) and the Department of Geographical and Sustainability Sciences (College of Liberal Arts and Sciences) administer the undergraduate certificate program in wind energy; see Wind Energy (p. 915) in the Catalog.

Graduate Programs of Study
- Master of Science in industrial engineering (optional concentration in windpower management)
- Doctor of Philosophy in industrial engineering
- Master of Science in mechanical engineering
- Doctor of Philosophy in mechanical engineering

Research and Study in Industrial Engineering
Graduate study in industrial engineering is tailored individually. Each student's study program is based on his or her background and career objectives and is designed according to sound academic practice. The curriculum is highly flexible; the goal is academic excellence. The program offers six principal academic focus areas: design and manufacturing, human factors engineering and ergonomics, engineering management, reliability and production systems, operations research and applied statistics, and information systems. Graduate students participate in research in their academic concentration areas.

ENGINEERING MANAGEMENT
Current research in engineering management consists of entrepreneurship, parametric cash flow analysis, strategic management, and economic risk analysis. Engineering management studies concentrate on engineering administration, engineering economics, and information systems. This area is covered by courses in the 50 series.

HUMAN FACTORS AND ERGONOMICS
Current research in human factors and ergonomics includes investigation of the effects of visual and auditory displays on human information processing and development of computer systems that ease the challenges of controlling complex medical and robotic systems. This work examines how engineers should shape information technology to enhance productivity, safety, and customer satisfaction. Industrial engineering faculty members and students work to improve the effectiveness of robot systems for exploration of Mars and the Moon, to improve driving safety, and to design new cockpit interfaces. The department has several medical, flight, and driving simulators. It also conducts research in other facilities, including the National Advanced Driving Simulator, the most advanced simulation facility in the world.
Human factors and ergonomics studies concentrate on designing systems compatible with human capabilities and limitations. Human factors engineering integrates components from the fields of psychology, cognitive sciences, physiology, statistics, and technical sciences to address issues of human-interface design and human-systems design. Specific considerations include human cognitive abilities and limitations, visual performance, error reduction, workload assessment and mitigation, design of jobs in the industrial environment, information acquisition and processing, choice of action, operator performance measurement, and economic concerns. This area is covered by courses in the 40 series.

INFORMATION SYSTEMS
Studies in information systems concentrate on system design. Design problems involve devising information systems that meet a diverse set of requirements. Contemporary topics include network-based systems, client/server systems, internet systems, and medical informatics.

MANUFACTURING
Ongoing manufacturing research consists of flexible manufacturing systems, optimum control of processes, and reliability assessment. Manufacturing courses, denoted by the 30 series, delve into selecting appropriate manufacturing methods, planning processing operations, devising control strategies, and designing products and manufacturing systems. Contemporary topics include computer-aided process planning, computer-aided design, computer-controlled manufacturing, concurrent engineering, and applications of artificial intelligence in manufacturing.

OPERATIONS RESEARCH AND APPLIED STATISTICS
Ongoing research in operations research and applied statistics deals with the application of optimization techniques for informed decision making in the public and private sectors. The primary focus of this work is modeling, simulating, and optimizing the design and operation of systems such as logistics, communications, health care, and manufacturing. Studies in operations research and applied statistics concentrate on mathematical programming, statistical, and computer sciences for modeling, analyzing, and optimizing systems. Various methodologies in this area include mathematical programming, heuristic optimization, statistical analysis, and digital systems simulation. This area is covered by courses in the 70 series.

QUALITY CONTROL AND PRODUCTION SYSTEMS
Current research in quality control and production systems focuses on measures for corporate quality and reliability, computer-aided layout and scheduling, just-in-time production, inspection, and online expert systems in process control. Studies of quality control and production systems focus on reliability engineering, quality control, and production systems. This area is covered by courses in the 60 series.

Research and Study in Mechanical Engineering
The graduate programs in mechanical engineering educate students in more depth and breadth than is possible at the baccalaureate level. This prepares the graduate to use contemporary methods at advanced levels in professional careers in engineering design, development, teaching, and research. Each student’s plan of study is based on his or her background and career objectives, and is designed according to sound academic practice. Faculty members in the program have teaching and research expertise in energy and power conversion, fluid and thermal sciences, solid mechanics, mechanical systems, and related areas. Students may develop programs emphasizing fluid mechanics, thermodynamics, heat transfer, fatigue and fracture mechanics, and mechanical systems. Some may pursue more general programs that combine emphases. Others may specialize in interdisciplinary areas (e.g., energy engineering, materials engineering, automatic control, chemical processes), which involve a combination of mechanical and industrial engineering departmental courses and appropriate electives from other departments in the College of Engineering and across the University. Ph.D. programs may center on any one of these areas through choice of appropriate course work and research topic.

For more information, see the Mechanical Engineering Graduate Student Handbook, available from the department.

The mechanical engineering program offers the following research and study areas.

FLUID MECHANICS
The graduate program in fluid mechanics provides a rigorous and broad foundation in theoretical, numerical, and experimental aspects of the subject. It is especially suitable for those seeking careers in teaching and/or research in academic and industrial organizations. The program focuses on fundamental principles and techniques of solving problems in the varied fields of fluids engineering. It emphasizes computer use, both in mathematical modeling of flow phenomena and in acquisition and processing of experimental data. Although most of the relevant courses are offered by the Department of Mechanical and Industrial Engineering, students are strongly encouraged to take applied mathematics and classical mechanics courses offered by the Departments of Mathematics (p. 455) and Physics and Astronomy (p. 507) in the College of Liberal Arts and Sciences and by other College of Engineering departments.

Current research projects include computational modeling of viscous and turbulent flows; vortex dynamics; unsteady flows; pulmonary flow; flow separation and control; atmospheric flows; environmental flows; ship hydrodynamics; viscous flow around ships; propulsor flow and propulsor-body interactions; free-surface effects; nonlinear wave theory; biomimetic fluid mechanics; hydraulic turbines; quantitative flow visualization and image processing; computational fluid dynamics; LDV and thermal anemometry for flow analysis; and uncertainty analysis.

MECHANICAL SYSTEMS
The graduate program in mechanical systems is designed to provide students with a broad, strong background in theoretical, computational, experimental, and applied aspects of the subject. It prepares future graduates for careers in industry, teaching, and government. The program emphasizes fundamental principles,
computational techniques, multiscale modeling and simulation, and experimentation used to analyze and design mechanical systems. Areas of concentration include reliability-based design and optimization, nanotechnology, tissue mechanics, machine and vehicle dynamics, optimal design, structural sensitivity analysis and optimization, computational solid mechanics, probabilistic mechanics, mechanics of composite materials, reliability, and fatigue and fracture mechanics.

Although most courses relevant to the specialization areas are offered by the Department of Mechanical and Industrial Engineering, students are encouraged to consider appropriate course work from other areas, including courses offered by other College of Engineering departments and in disciplines such as mathematics (p. 455), statistics (p. 613), and physics (p. 507).

Current research projects include computational mechanics, tissue mechanics, multiphysics, and multiscale problems; mechanics of multifunctional composites and nanocomposites, electromagnetic and thermal effects in composites, micromechanical modeling of multiphase composites and nanocomposites, impact and failure of composites, contact mechanics problems with friction and adhesion; stochastic meshfree and finite element methods; design sensitivity analysis of nonlinear structural systems; reliability-based design optimization; surrogate modeling for reliability-based design optimization; shape optimal design of elastoplastic materials; optimal design of metal stamping process; probabilistic and elastic-plastic fracture mechanics; damage tolerant design; fatigue behavior and life prediction under constant and variable amplitude loading; design sensitivity analysis of rigid and flexible mechanical systems; multibody system dynamics, tire dynamics, wheel and rail contact dynamics; wind turbine drivetrain dynamics; and vehicle system dynamics.

**THERMAL SCIENCES**

The graduate program in thermal sciences and systems is designed to provide students with a rigorous and broad foundation in theoretical and experimental aspects of the subject. It prepares future graduates for careers in industry, teaching, and government. The program emphasizes fundamentals of thermodynamics and heat transfer, and associated analytical, numerical, and experimental methods used in energy systems. Areas of concentration include fluid mechanics, thermodynamics, heat transfer, phase-change, combustion, and fuel cells.

Most courses relevant to the specialization areas are offered by the Department of Mechanical and Industrial Engineering. Students are encouraged to balance their work from other areas, including courses offered by other College of Engineering departments and in disciplines such as mathematics (p. 455) and physics (p. 507).

Current research projects include biomass gasification; turbulent flames; combustion of biomass; alternative and renewable fuels; combustion instability; spray atomization and combustion; transport modeling of fuel cells; transport phenomena in materials processing, melting, and solidification; and optical-based diagnostics of complex thermal processes.

**M.S.: Industrial Engineering**

The Master of Science program in industrial engineering requires a minimum of 30 s.h. of graduate credit with thesis, and a minimum of 36 s.h. of graduate credit without thesis. Students who intend to pursue a Ph.D. should select the thesis option; those who hold research or teaching assistantships may be required to select the thesis option. The M.S. concentration in wind power management is open to students in either option.

All M.S. students must earn 21 s.h. in graduate-level industrial engineering courses. They earn a minimum of 9 s.h. in 5000-level industrial engineering courses and complete at least one 3000- or 5000-level course from each of three focus areas: human factors, operations research, and reliability and systems design. Thesis students who plan to pursue a Ph.D. may choose to take two 5000-level courses in each of the three focus areas in order to complete their Ph.D. breadth requirement before entering the doctoral program. Students select other courses in consultation with their advisors; choices are documented in a student's plan of study.

Thesis students may count a maximum of 6 s.h. of research credit toward the degree and may include that credit in the required 21 s.h. of graduate-level industrial engineering courses. The thesis option does not include research credit.

All graduate students must register for IE:5000 Graduate Seminar: Industrial Engineering (1 s.h.) each semester of enrollment. They may not substitute seminar credit for regular course work or research credit.

M.S. students must maintain a g.p.a. of at least 3.00 on all graduate work at the University of Iowa and must pass a final comprehensive examination as specified by their examining committees.

Entering students must have strong verbal and written skills in English and a background in computer programming (e.g., C++, C, VB), probability, statistics, and mathematics equivalent to that required by accredited undergraduate engineering programs. Students with insufficient academic background must remedy deficiencies by taking appropriate courses beyond those normally required for the study plan.

Entering students are advised by the department chair or by a designated faculty advisor. The department chair or the graduate program coordinator assigns an advisor to each student during his or her first regular semester in residence.

During that semester, a student and his or her advisor prepare a study plan, which they submit to the department chair for approval. Once the plan is approved, it is filed with a student's record. It is a student's responsibility to assure that the study plan is submitted to the department chair.

M.S. students must pass a final comprehensive examination, as specified by their examination committees. Examination committees consist of at least three Graduate College faculty members and must be approved by the department chair.

The comprehensive examination may consist of both oral and written parts. Its purpose is to assess the adequacy of a student's defense of thesis and/or course preparation. The final study plan, approved by the Graduate College dean, is prerequisite to the exam. A student should consult with his or her advisor on the composition of the advisory/examination committee and the time and place for the exam.
It is a student's responsibility to submit a degree application by the college's deadline.

For more detailed information about M.S. program requirements, including a list of focus area courses, see the Industrial Engineering Graduate Handbook or link to industrial engineering graduate programs on the Department of Mechanical and Industrial Engineering website.

**M.S. Concentration in Wind Power Management**

M.S. students in industrial engineering may elect to concentrate in wind power management. They must meet all regular requirements for the M.S. in industrial engineering. In addition, thesis option students must take three courses (9 s.h.) from the list of recommended courses. Nonthesis option students must take four courses (12 s.h.) from the list of recommended courses and one course (3 s.h.) from the list of electives. Students' course selections must be approved by their advisors.

**WIND POWER MANAGEMENT: RECOMMENDED COURSES**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CEE:4107</td>
<td>Sustainable Systems</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>CEE:4317</td>
<td>Remote Sensing</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>CEE:6151</td>
<td>Environmental Systems Modeling</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>IE:3350</td>
<td>Process Engineering</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>IE:3600</td>
<td>Quality Control</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>IE:3610</td>
<td>Stochastic Modeling</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>IE:3700</td>
<td>Operations Research</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>IE:3750</td>
<td>Digital Systems Simulation</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ME:5143</td>
<td>Computational Fluid and Thermal Engineering</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ME:5195</td>
<td>Contemporary Topics in Mechanical Engineering</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ME:6255</td>
<td>Multiscale Modeling</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ME:7268</td>
<td>Turbulent Flows</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

**WIND POWER MANAGEMENT: ELECTIVES**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>IE:3760</td>
<td>Applied Linear Regression</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>CS:4400</td>
<td>Database Systems</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>EES:1290</td>
<td>Energy and the Environment</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>GEOG:3750</td>
<td>Environmental Quality: Science, Technology, and Policy</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>GEOG:4930</td>
<td>Urban Geography</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>MSCI:6190</td>
<td>Knowledge Management</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>MSCI:9200</td>
<td>Business Programming</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>OEH:5410</td>
<td>Occupational Safety</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

**Ph.D.: Industrial Engineering**

The Doctor of Philosophy program in industrial engineering requires a minimum of 72 s.h. It is granted upon demonstration of comprehensive knowledge and scholarly work at the highest level.

A maximum of 36 s.h. earned toward the M.S. may be counted toward the 72 s.h. required for the Ph.D. Students must spend at least two semesters in residence at the University of Iowa. They also must maintain a g.p.a. of at least 3.25 on all graduate work done at the University.

The degree requires broad academic background with considerable depth in at least one area of specialization that clearly demonstrates the student's capability to do high-level research. Ph.D. students must complete a series of written and oral examinations and a written dissertation based upon the results of an original investigation.

Students without a Master of Science in industrial engineering or a closely allied area must satisfy all requirements for the M.S. in industrial engineering before they may be admitted to the Ph.D. program.

Entering students are advised by the department chair or by a designated faculty advisor. During a student's first regular semester in residence, an advisor is assigned by the department chair or the graduate program coordinator. Students are expected to identify an industrial engineering faculty member willing to serve as their advisor by the end of their first regular semester in the program.

Once a student is assigned an advisor, he or she works with the advisor to prepare a study plan, which is submitted to the department chair for approval. Once the plan is approved by the department chair, it is filed with a student's record. At the beginning of each academic year, the industrial engineering faculty reviews the study plan and gives a student feedback regarding progress toward his or her degree objective. It is the student's responsibility to assure that the study plan is submitted to the program chair.

Admission to degree candidacy requires a g.p.a. of at least 3.25 on all graduate work taken at the University of Iowa, demonstration of capacity for individual research achievement (typically a dissertation research proposal), and successful completion of the comprehensive examination given by the examining committee.

The comprehensive examination is scheduled with approval of a student's advisor and the industrial engineering program coordinator or the graduate coordinator once a student's study plan is essentially completed. The examining committee determines the composition of the exam, including written and oral parts, and determines whether a student is ready to begin dissertation research.

For more detailed information about Ph.D. program requirements, see the Industrial Engineering Graduate Handbook or link to industrial engineering graduate programs on the Department of Mechanical and Industrial Engineering website.

All Ph.D. students must satisfy the following requirements.

Graduate students must register for IE:5000 Graduate Seminar: Industrial Engineering (1 s.h.) each semester of enrollment. They may not substitute seminar credit for regular course work or research credit.

**INDUSTRIAL ENGINEERING BREADTH REQUIREMENT**

Each Ph.D. student must pass at least two 5000-level industrial engineering courses in each of three focus areas: human factors, operations research, and reliability and design. Students who have earned an M.S. in the program may already have satisfied this requirement.

**QUALIFYING EXAM**

Each student must satisfy the qualifying exam requirement in two of the three focus areas. The requirement for a focus area can be satisfied by passing a written qualifying exam in the focus area or by earning
a grade of A-minus or higher in each of two 5000-level industrial engineering courses in the focus area.

**FOCUS AREA**

Students select one of the three focus areas and take additional course work in that area. They fulfill the minimum requirement of the focus area, completing at least two additional 5000-level industrial engineering courses in the area.

**COMPREHENSIVE EXAMINATION**

Each student must demonstrate his or her ability to carry out creative individual research by completing and defending his or her dissertation research proposal in a comprehensive examination. The exam includes written and oral parts and is conducted by an examining committee of at least five industrial engineering and Graduate College faculty members. It is scheduled after the qualifying examination requirement has been satisfied. The examining committee determines whether a student is ready to begin dissertation research. Once a student has completed the comprehensive examination satisfactorily, he or she is accepted as a candidate for the Ph.D.

**FINAL EXAMINATION (THESIS DEFENSE)**

Each student must defend his or her completed dissertation in the final examination, which is conducted by the examining committee.

**Ph.D. Concentration in Wind Power Management**

Ph.D. students who concentrate in wind power management must meet all regular requirements for the doctoral degree. In addition, they must gain sufficient breadth and depth of domain knowledge in their study area by taking energy-related courses.

**Related Certificate: Informatics**

The Graduate College offers the Certificate in Informatics with a health informatics subtrack, which requires 18 s.h. of credit. The subtrack emphasizes the organization, management, and use of health care information; health care research, education, and practice; and information technology developments in the socioeconomic context of health care. Industrial engineering students working toward the certificate complete IE:5860 Health Informatics I, IE:5870 Health Informatics II, and approved electives. To learn more, see “Certificate” in the Informatics (p. 942) (Graduate College) section of the Catalog.

**M.S.: Mechanical Engineering**

The Master of Science program in mechanical engineering requires a minimum of 30 s.h., with or without thesis. Thesis students may count 6-9 s.h. earned for thesis research and writing toward the degree. Each student determines a study plan in consultation with an advisor and submits the plan to the department chair for approval. All M.S. students must register for ME:6191 Graduate Seminar: Mechanical Engineering each semester.

To earn the M.S., a student must maintain a g.p.a. of at least 3.00 on graduate work used to satisfy the degree requirements and must be successful in the final examination. This examination is administered by a student’s committee, which consists of at least three faculty members, including at least one with primary appointment in the Department of Mechanical and Industrial Engineering.

The requirements for the M.S. may be completed within one calendar year. However, students with assistantship duties or other constraints may take up to two calendar years to complete the degree.

**Ph.D.: Mechanical Engineering**

The Doctor of Philosophy program in mechanical engineering requires 72 s.h. of graduate credit, including at least 54 s.h. in course work (excluding thesis research) and at least 12 s.h. earned for Ph.D. thesis research. Students must pass the qualifying examination administered by the program to be formally admitted to the doctoral program.

Each student takes the comprehensive examination after passing the qualifying examination and when the course work specified in the study plan is nearly completed; in any case, the comprehensive examination should be taken no later than 28 months after the first registration in the Ph.D. program. To be admitted to the comprehensive examination, a student must be in good academic standing and must be recommended by his or her advisor. The exam is administered by the student’s committee. Admission to Ph.D. candidacy is recognized upon successful completion of the comprehensive examination.

Having satisfactorily completed the exam, a student usually has only to complete and defend the dissertation at the final examination.

Requirements for the Ph.D. usually can be completed in three to four years beyond the M.S.

**Admission**

Applicants must meet the admission requirements of the Graduate College; for detailed information about Graduate College policies, see the Manual of Rules and Regulations of the Graduate College.

**INDUSTRIAL ENGINEERING**

Reference letters, student research interests, grade-point average for previous graduate study, and factors such as faculty availability are considered in admission decisions. M.S. applicants may be admitted from an ABET-accredited baccalaureate curriculum in any engineering discipline, or in the mathematical sciences, the physical sciences, or the computer sciences with a g.p.a. of at least 3.00 and an acceptable score on the Graduate Record Examination (GRE) General Test. Applicants from institutions outside the United States must meet equivalent conditions for regular admission. Students with lesser qualifications may be considered for conditional admission.

Students from business or social science programs who have mathematical preparation similar to that of engineering students are considered for regular or conditional admission. Students on conditional status must achieve regular status within two sessions of their first registration by attaining an acceptable grade-point average and gaining regular acceptance by the industrial engineering program faculty; otherwise, they are dismissed. Admissions may be limited by available resources.
Ph.D. applicants may be admitted from an ABET Inc.-accredited baccalaureate curriculum or a postbaccalaureate curriculum in any engineering discipline or in the mathematical sciences, computer science, or physical sciences with a g.p.a. of at least 3.25 and an acceptable GRE General Test score. Applicants from outside the United States must meet equivalent standards for regular admission as determined by the University of Iowa. Students also may be admitted from business or social science programs as determined individually.

Applicants who intend to pursue a Ph.D. and who have a B.S. or an M.S. without thesis usually are admitted first to the M.S. program. All admissions to the Ph.D. program are reviewed by the graduate studies committee.

MECHANICAL ENGINEERING
Applicants who have earned a baccalaureate or master's degree in engineering curriculum or in the mathematical or physical sciences are eligible to be considered for admission to graduate study in mechanical engineering. In order to be considered for regular admission, applicants must have a g.p.a. of at least 3.00 on a 4.00 scale on all previous college-level work and Graduate Record Examination (GRE) General Test scores of at least 500 verbal, 750 quantitative, and 4.5 analytical writing. Students whose first language is not English must score at least 550 (paper-based), 213 (computer-based), or 81 (Internet-based) on the Test of English as a Foreign language (TOEFL).

Applicants with a lower grade-point average and/or GRE or TOEFL test scores may be considered for conditional admission, under exceptional circumstances. Applicants admitted conditionally must achieve regular standing within one semester (excluding summer sessions) after admission by attaining a g.p.a. of at least 3.00 on their first 9 s.h. at the University of Iowa. The Graduate College cancels registration for the subsequent semester for students who have not submitted their GRE and/or TOEFL scores by the end of the first semester after admission.

Financial Support

INDUSTRIAL ENGINEERING
A number of one-quarter-time and one-half-time teaching and research assistantships are available for graduate students. Awards are based on students' academic records and assessment of their potential contribution to the research and teaching goals of the program. Advanced graduate students also may qualify for appointments as graduate teaching fellows. Contact the chair of the Department of Mechanical and Industrial Engineering for details.

MECHANICAL ENGINEERING
Financial support is available to M.S. and Ph.D. students, primarily through graduate assistantships in teaching or research from the Department of Mechanical and Industrial Engineering, the Center for Computer-Aided Design, IIHR—Hydroscience and Engineering, and the National Advanced Driving Simulator. These awards may be made on a semester, academic year, or calendar year basis. Awards and reappointments are competitive and are based on a student's potential contribution to the teaching and research goals of the department. Students who fulfill their assistantship responsibilities and continue to make satisfactory progress toward their degree objective receive preference in new assistantship awards. All applications for financial support should be submitted directly to the department chair.

M.S. students with assistantship appointments of one-quarter-time or more are required to register for a minimum of 9 s.h. during fall and spring semesters until they have completed 30 s.h. of course and research work beyond the baccalaureate degree. Ph.D. students with assistantship appointments of one-quarter-time or more must register for a minimum of 9 s.h. during fall and spring semesters until they have completed 72 s.h. of course and research work beyond the baccalaureate degree. Once they meet these minimums, graduate students must register for a graduate seminar each semester until they have successfully completed their final examination or thesis defense. All registrations should accurately reflect the amount and type of work undertaken, the use of University facilities, and the amount of consultation with the faculty.

Facilities and Laboratories

DESIGN FOR MANUFACTURING LABORATORY
The Design for Manufacturing Laboratory is used by students in industrial engineering and in mechanical engineering. The laboratory provides students with experience in CAD/CAM systems. It is equipped with 4-axis CNC mills (Haas and Tormach), CNC router (Techno-CNC), CNC metal lathe (Haas and Techno-CNC), drill press, plastic injection molder, thermoforming machine, band saw, disc sander, bench grinder, polishing wheel, hand drill, sandblasting cabinet, press, foot shear, and welding station. The lab has the latest software technology, such as Pro/ENGINEER and Rhinoceros.

Industrial Engineering

The following facilities and laboratories are used by undergraduate and graduate students. For information about laboratories affiliated with core courses coordinated by other College of Engineering departments, see those departments' Catalog sections.

ACTIVE LEARNING FACILITY
The Active Learning Facility (ALF) is designed to encourage group interaction in a small classroom setting. The reconfigurable classroom is equipped with nine tables and 20 HP workstations. It is used for industrial engineering courses and for small groups working together on computer assignments.

BIOMANUFACTURING LABORATORY
The Biomanufacturing Laboratory teaches students about emerging processes and techniques in cell-biomaterial interactions and gives them hands-on laboratory experience. Work in the laboratory is interdisciplinary, spanning engineering, medicine, biology, and biotechnology. The laboratory provides facilities for engineered living tissue systems. Next generation manufacturing tools are used to build biologically inspired structures intended to replace diseased or damaged organs and tissues. Laboratory research projects and activities focus primarily on design, modeling, and fabrication of tissue replacement parts; tissue scaffolds and medical devices; and cell and organ printing. Diverse software and hardware are available to support additive manufacturing platforms.
COGNITIVE SYSTEMS LABORATORY
The Cognitive Systems Laboratory is devoted to examining the safety, performance, and user acceptance implications of technology insertion into complex systems. The laboratory has networked computers, a video editing workstation, a process control simulation, and a low-cost driving simulator. The simulator is equipped with five cameras, instrumentation to record all driver activity, and an eye tracking system. The Cognitive Systems Laboratory shares the driving simulator and an instrumented vehicle with the Operator Performance Laboratory. The equipment supports class projects, system development, and undergraduate and graduate research.

DESIGN PROJECT LABORATORY
The Design Project Laboratory is equipped with standard computers and videoconferencing facilities. It supports senior design project courses.

GROK LAB
The GROK Lab develops technologies to help scientists and doctors improve their understanding and control of complex systems such as robots, distributed sensor networks, and augmented-reality systems. The lab designs and builds software, electronic circuits, and mechanical devices that create or modify complex systems and that extend scientists' understanding of how to make these systems perform their intended tasks better.

The laboratory has a variety of software development platforms and manufacturing tools, including CNC machines and supplies for casting and molding, as well as a suite of equipment for circuit design, testing, and assembly. The GROK lab has developed technologies used by NASA to control robots exploring South America and Mars. Its most recent projects have focused on using distributed sensor networks to track the activities of health care workers and on developing training simulators for orthopaedic surgeons.

INTELLIGENT SYSTEMS LABORATORY
The Intelligent Systems Laboratory provides facilities for research in computational intelligence leading to applications in industry, service organizations, and health care. Research in the laboratory is funded by government agencies and industrial corporations. Solutions to practical problems and enhancement of engineering education are emphasized. Most of the laboratory's recent projects concentrate on development of software tools for product development, manufacturing, and health care applications.

The Intelligent Systems Laboratory is furnished with the latest computer technology to support research on numerous computing platforms. Diverse software is available for modeling, design, and construction of intelligent systems—for example, data mining software, neural networks, expert systems, and simulation software.

OPERATOR PERFORMANCE LABORATORY
Research in the Operator Performance Laboratory (OPL) focuses on determining human performance in a variety of situations, with particular emphasis on driving and flight deck environments. Much of the research is performed in the field using a state-of-the-art instrumented vehicle that is equipped with five cameras, eye movement equipment, two computers, video equipment, and a suite of sensors. The OPL also features a scale Boeing 737-400 fixed-base flight simulator with six channels of visuals. The flight simulator is equipped with a remote eye-tracking device that allows the activation of selected virtual controls in the flight deck. A specially designed stimulus presentation booth is used for color research and for photometry applications. Computer models of operator performance are designed based on the data obtained in the laboratory and field research.

Mechanical Engineering
Mechanical Engineering Undergraduate Instruction
ENGINEERING CORE
The laboratories for fluid flows and transport processes contain a wind tunnel; a water flume; a water table; four water channels with porous media; three air jet tables; various air, water, and oil flow devices; and facilities for numerous small-scale experiments to demonstrate the principles of mass, momentum, and energy transfer.

For information about laboratories affiliated with core courses coordinated by other College of Engineering departments, see the departments' Catalog sections.

COMPUTATIONAL FLUIDS LABORATORY
The Computational Fluids Laboratory is equipped with 20 computers running ANSYS Fluent software used in fluid mechanics courses.

DESIGN PROJECT LABORATORY
The Design Project Laboratory supports all senior design project courses. It is equipped with eight mid-level workstations as well as a high-end workstation, which enables students to manipulate full design models and interactive WebEx sessions with companies using the analysis software during the session. Research versions of ANSYS Fluent and ProE, standard computers, and videoconferencing facilities also are available.

EXPERIMENTAL FLUID MECHANICS LABORATORY
The Experimental Fluid Mechanics Laboratory acquaints students with ongoing research in fluid mechanics and hydraulics. The laboratory focuses on literature, experiments, numerical simulations, audio-video aids, and links to educational and scientific internet sites. Students using the laboratory develop an understanding of basic flow mechanisms and become familiar with the latest developments in experimental techniques and instrumentation.

RALPH AND BARBARA STEPHENS EXPERIMENTAL ENGINEERING LABORATORY
The Ralph and Barbara Stephens Experimental Engineering Laboratory supports the required undergraduate courses ME:3351 Engineering Instrumentation and ME:4080 Experimental Engineering. The laboratory is equipped with varied instruments and test rigs that help students learn basic measurement principles and laboratory procedures. It also offers sensors for measurement of displacement, mass, temperature, pressure, velocity and flow rate, heat flux, force, torque, and so forth.

SOLIDIFICATION LABORATORY
The Solidification Laboratory supports research in fundamental aspects of solidification and their application
in casting of metals. Research in the laboratory ranges from basic experimental and computational studies of microstructure evolution to modeling and simulation of a wide variety of industrial metal casting processes. Collaboration with the casting industry has resulted in custom-made software for process control, new capabilities in commercially available casting simulation software, and strategies for yield improvement and defect prevention. Facilities include numerous state-of-the-art computer workstations and experimental test setups.

**THERMAL AND HEAT TRANSFER LABORATORY**
The Thermal and Heat Transfer Laboratory is equipped with data acquisition systems to process data online. It also provides facilities for experiments in heat transfer measurements.

**Mechanical Engineering Graduate Facilities**

**FLUID MECHANICS**
The program in fluid mechanics is conducted in close collaboration with IIHR—Hydroscience & Engineering. The equipment available to graduate students includes several wind tunnels and hydraulic flumes, an environmental flow facility, a towing tank, two special low-temperature flow facilities for investigation of ice phenomena, hot-wire and laser anemometer systems, particle-image velocimetry systems, and computer-based data acquisition systems.

Facilities available in the department include a flow visualization and imaging system with CCD (charge-coupled devices) camera, and a low-speed wind tunnel. IIHR and College of Engineering shops provide the necessary support. In addition to using in-house workstations and computers, the department's faculty members and students make extensive use of supercomputers at national centers.

**MECHANICAL SYSTEMS**
Computer-based simulation research activities in the mechanical systems area are carried out mainly in the Center for Computer-Aided Design (CCAD). CCAD maintains a variety of high-performance computer systems in support of its technology research and development efforts. General computing services are supported by a number of LINUX and Windows applications servers connected to centralized file servers. CAD/CAE, software development, virtual prototyping, and virtual environment development applications are hosted on numerous high-performance workstations. Standard desktop, multimedia, and office productivity applications are hosted on a network of more than 40 workstations.

**THERMAL SCIENCES**
Facilities for research in the thermal sciences and systems consist of a low-pressure combustion chamber, a high-pressure continuous flow combustion chamber, a high-pressure chamber for atomization study, a test rig for heat transfer to near supercritical fluids, a diffusion flame test rig, an enclosed laminar flame test rig, an air atomization spray apparatus, test stands for melting and solidification studies, various optical measurement systems, and two fuel cell test rigs. Laser-based diagnostics (e.g., laser-induced fluorescence, imaging, and laser Doppler anemometry) are available for solidification, turbulent flow, heat transfer, and combustion studies. Flow visualization and imaging by CCD camera are available for the study of complex fluid motion and heat convection, and combustion flows.

**Courses**

**Industrial Engineering**

**Special Topics**

**IE:0000 Cooperative Education Training**
Assignment: Industrial Engineering
Industrial engineering students participating in the Cooperative Education Program register in this course during work assignment periods; registration provides a record of participation in the program on the student’s permanent record. Requirements: admission to Cooperative Education Program.

**IE:0002 Half-time Cooperative Education**
Training Assignment: Industrial Engineering
Registration for work assignment periods; for students participating in the Cooperative Education Program.

**IE:1000 First-Year Seminar**
0-1 s.h.
Small discussion class taught by a faculty member; topics chosen by instructor; may include outside activities (e.g., films, lectures, performances, readings, visits to research facilities). Requirements: first- or second-semester standing.

**IE:2000 Industrial Engineering Sophomore Seminar**
0 s.h.
Curriculum and profession; ethics and professionalism in classroom and workplace. Requirements: sophomore or transfer standing in engineering.

**IE:3000 Professional Seminar: Industrial Engineering**
0 s.h.
Professional aspects of industrial engineering presented through lectures and discussions by guest speakers, field trips, films, panel discussions. Requirements: junior standing.

**IE:3998 Individual Investigations: Industrial Engineering**
arr.
Independent projects in industrial engineering for undergraduate students, including laboratory study, an engineering design project, analysis and simulation of an engineering system, computer software development, CAD/CAM applications, or research.
Manufacturing

IE:3138 Biomanufacturing 3 s.h.
Design and manufacturing technologies in development of biomedical related products (customized implants, medical devices, tissue scaffolds, engineered tissues, organs, biological systems); tissue engineering, BioCAD, biomedical imaging and processing for customized implant development, reverse engineering, biomaterials, regenerative medicine and drug delivery, traditional manufacturing processes for tissue engineering, rapid prototyping and layered manufacturing, rapid tooling, bioadditive fabrication, biomanufacturing and new frontiers in biomanufacturing (organ printing); hands-on laboratory projects and assignments. Prerequisites: ENGR:2760.

IE:3300 Manufacturing Systems 3 s.h.
Manufacturing and logistics systems, supply chain management, MRP/ERP systems, lean manufacturing, concurrent engineering, value stream mapping and six sigma. Offered spring semesters. Prerequisites: IE:3700 and ENGR:2760. Same as ME:4131.

IE:3350 Process Engineering 4 s.h.
Methodologies, algorithms, and tools for processing modeling, analysis, and reengineering; modeling issues in product and component design, product and process modularity, quality, reliability, agility. Offered spring semesters. Prerequisites: IE:3700.

IE:4116 Manufacturing Processes and Automation 3 s.h.
Material processing, metal cutting theories, forming, micro/nano fabrication, programmable logic controller, computer numerical controllers, discrete control system, DC and AC servo motors, Command generation. Prerequisites: ENGR:2760. Same as ME:4116.

IE:4172 Big Data Analytics 3 s.h.
Principles of data mining and machine learning in context of big data; basic data mining principles and methods — pattern discovery, clustering, ordering, analysis of different types of data (sets and sequences); machine learning topics including supervised and unsupervised learning, tuning model complexity, dimensionality reduction, nonparametric methods, comparing and combining algorithms; applications of these methods; development of analytical techniques to cope with challenging and real "big data" problems; introduction to MapReduce, Hadoop, and GPU computing tools (Cuda and OpenCL). Prerequisites: MATH:3800 and STAT:2020. Requirements: basic programming skills in C, C++, Java, or Python; knowledge of Matlab, Octave, or R; and knowledge of a word processor. Recommendations: IE:3760 and CS:4400 and CS:3330 and MATH:2550.

IE:4550 Wind Power Management 3 s.h.
Principles of wind power production, wind turbine design, wind park location and design, turbine and wind park control, predictive modeling, integration of wind power with a grid.

IE:5129 Information Systems for Resource Management 3 s.h.
Understanding and managing natural and engineered resources requiring data-reach foundation; management of data; complex data-driven technologies integrated into data and information systems (DIS); hands-on opportunity to develop or use capabilities of DIS for study or research area of interest (science, engineering, industrial operation); wind power generation, an emerging field in Iowa, used as a case study for illustrating key DIS components, links, and functionalities. Same as ME:5129, CEE:5129, ECE:5129, GEOG:5129.

IE:6232 Advanced Computer-Aided Design and Manufacturing 3 s.h.
In-depth study of CAD and manufacturing (CAD/CAM); review of CAD/CAM, computer graphics, NURBS modeling (curves/surfaces, solid modeling, design data exchange); computational geometry for product development, heterogeneous object modeling, rapid prototyping (RP) and layered manufacturing, computer-aided path planning, CAD applications (computer-aided tissue engineering, biomedical imaging and processing, biomanufacturing); related lab projects and assignments. Requirements: knowledge of one programming language (C, C++, C#, VB, or Java).

IE:6350 Computational Intelligence 3 s.h.
Concepts, models, algorithms, and tools for development of intelligent systems; data mining, expert systems, neural networks for engineering, medical and systems applications. Prerequisites: IE:3700. Same as NURS:6900.

Human Factors and Ergonomics

IE:3400 Human Factors 3 s.h.
Design of human-machine systems; development of optimum work environments by applying principles of behavioral science and basic knowledge of human capacities and limits. Offered fall semesters. Prerequisites: PSY:1001.

IE:3450 Ergonomics 3 s.h.
Ergonomic design of jobs and products in an industrial and consumer market setting; principles of good design, examples of poor design; consequences of poor job and product design; principles of work sampling, usability studies, performance rating, sizing and planning of workstations, hand tool design, ergonomic design in transportation; related group project.

IE:6211 Human Factors in Healthcare Systems 3 s.h.
Solving human factors problems in health care work systems; cognitive systems engineering, interface design, health care productivity, patient safety; specific research including decision making, information transfer, and communication; discrete event and dynamic systems simulation modeling; human computer interaction; health information technology/systems; usability; business models of organizational, technical, and social elements of health care systems.

IE:6410 Research Methods in Human Factors Engineering 3 s.h.
Logic and methods for research and for analysis and evaluation of complex human-machine systems; advanced techniques for enhancement of human interaction with advanced information technology; emphasis on cognitive task analysis techniques for innovative design, understanding of how technology affects safety, performance, user acceptance.

IE:6420 Human/Computer Interaction 3 s.h.
Development of projects using human factors principles in the design of computer interfaces.

IE:6440 Airborne Design of Experiments 3 s.h.
Issues in design of airborne human factors research, and techniques applicable to ground transportation research; statistical, human factors, flight mechanics, and organizational principles in flight test engineering; basic understanding of systematic approach to human factors flight testing, development of test points and test apparatus, flight envelope, proper briefing techniques, mission execution, and after-action review; securing, synchronizing, and analyzing data.

IE:6450 Human Factors in Aviation 3 s.h.
Measuring, modeling, and optimizing human visual performance; display design for optimal legibility, research in visibility, legibility, conspicuity, and camouflage; visibility model development.

IE:6460 The Design of Virtual Environments 3 s.h.
Development of techniques for designing and creating three-dimensional representations of information for simulation, scientific visualization, and engineering; emphasis on human factors issues, software.

IE:6480 Unmanned Aircraft Systems 3 s.h.
Applications and research in unmanned aircraft systems (UAS) with focus on engineering aspects; new era of aviation and how UAS are fast emerging as a disruptive technology in aviation; applications ranging from film production, photography, precision agriculture, remote sensing, and infrastructure inspections to military applications; problem space of UAS from a variety of angles including engineering controls design, data links, UAS types, human factors, regulatory aspects.

Engineering Management
IE:2500 Engineering Economy 3 s.h.

IE:3500 Information Systems Design 3 s.h.
Structure and design of computer-based information systems; concepts of information systems, decision making; computer hardware, software, data structures; methods for determining system requirements; designing, implementing, evaluating, managing information systems; applied projects. Prerequisites: ENGR:1300.

Quality Control and Production Systems
IE:3600 Quality Control 3 s.h.
Basic techniques of statistical quality control; application of control charts for process control variables; design of inspection plans and industrial experimentation; modern management aspects of quality assurance systems. Offered fall semesters. Prerequisites: STAT:2020. Same as STAT:3620, CEE:3142.

IE:3640 Six Sigma Operations and Quality Control 3 s.h.
Six Sigma techniques for the DMAIC cycle (Define, Measure, Analyze, Improve, Control); what is needed for data collection (process inputs and outputs, measurement tools), conduct analysis (hypothesis testing, process capability studies), and conduct process improvement studies (design of experiments, response surface methodology); overview of Six Sigma, process and project management skills.

IE:4600 Industrial Engineering Design Project 1-4 s.h.
Projects involving product and related operational system design in an industrial or service organization; associated entrepreneurial or intrapreneurial planning. Offered spring semesters. Corequisites: IE:3300 and IE:3350 and IE:3400 and IE:3450 and IE:3500 and IE:3600 and IE:3750, if not taken as prerequisites.

IE:4610 Enhanced Design Experience 2-3 s.h.
Real-world, in-depth design experience in student teams, working with engineers at major companies in the region; application of industrial engineering knowledge and skills to design products and related operational systems.

IE:6790 Reliability Theory and Applications 3 s.h.
Fundamental topics in reliability engineering, including system reliability modeling, statistical inference of lifetime data, basic preventive maintenance models; statistics and random process models, and online monitoring and change detection techniques. Prerequisites: MATH:2550 and STAT:2020.

Operations Research and Applied Statistics
IE:3149 Information Visualization 3 s.h.
Instruments for reasoning about quantitative information; analyzing and communicating statistical information; main typologies of data graphics (data-maps, time-series, space-time narrative, relational diagrams, graphs and methods for dimensionality reduction); language for discussing data visualizations combined with knowledge of human perception of visual objects; how to visualize information effectively by using statistical methods, knowledge of human perception, and basics of data graphics. Prerequisites: MATH:2550 and STAT:2020.
IE:3610 Stochastic Modeling 3 s.h.

IE:3700 Operations Research 3 s.h.
Operations research models and applications; emphasis on deterministic model (linear programming, duality). Offered fall semesters. Prerequisites: MATH:2550. Corequisites: IE:3610 and IE:3700.

IE:3750 Digital Systems Simulation 3 s.h.
Simulation modeling and analysis; emphasis on construction of models, interpretation of modeling results; input and output analysis; hands-on usage of ARENA simulation software, manufacturing, health care, and service. Offered spring semesters. Prerequisites: IE:3610 and IE:3700.

IE:3760 Applied Linear Regression 3 s.h.
Regression analysis with focus on applications; model formulation, checking, selection; interpretation and presentation of analysis results; simple and multiple linear regression; logistic regression; ANOVA; hands-on data analysis with computer software. Prerequisites: STAT:2010 or STAT:2020. Same as STAT:3200.

IE:5860 Health Informatics I 3 s.h.
Technological tools that support health care administration, management, and decision making. Requirements: graduate standing. Same as MED:5300, SLIS:5900, RSNM:3195, HMP:5370, IGPI:5200.

IE:5870 Health Informatics II 3 s.h.
Selected health informatics initiatives, including computer-based patient records, physiologic monitoring, networking, imaging, virtual reality; participation in an interdisciplinary project team focused on an informatics innovation; application and research seminars. Same as BME:5252, RSNM:5301, IGPI:5210.

IE:6300 Innovation Science and Studies 3 s.h.
Innovative typology and sources, classical innovation models, measuring innovation, innovation discovery from data, evolutionary computation in innovation, innovation life cycle.

IE:6600 Linear Programming 3 s.h.
Mathematical programming models; linear and integer programming, transportation models, large-scale linear programming, network flow models, convex separable programming. Requirements: calculus and linear algebra. Same as MSCI:6600.

IE:6720 Nonlinear Optimization 3 s.h.
Mathematical models, theory, algorithms for constrained and unconstrained optimization; nonlinear, geometric, quadratic, dynamic programming; optimality conditions; aspects of duality theory.

IE:6750 Stochastic Optimization 3 s.h.
General tools and approaches used in decision making under uncertainties; modeling of uncertainties and risk, changes that uncertainties bring to the decision process, difficulties of incorporating uncertainties into optimization models, common techniques for solving stochastic problems.

IE:6760 Statistical Pattern Recognition 3 s.h.
Fundamental mathematical tools for multivariate statistical analysis and decision-making processes in pattern recognition.

IE:6770 Game Theory 3 s.h.
Problems, challenges, solution strategies, and other elements that arise among decisions makers who have aligned or opposing objectives; changes that collaboration and competition bring to decision making and problem solving; how ideas and concepts of game theory can be used to understand economic, industrial, social, and biological phenomena. Requirements: basic linear programming and probability.

IE:6780 Financial Engineering and Optimization 3 s.h.
Quantitative methods of modeling various financial instruments (i.e., stocks, options, futures) and tools for measurement and control of risks inherent to financial markets; fundamentals of interest rates; options and futures contract valuation, including weather and energy derivatives; risk management and portfolio optimization; emphasis on modeling and solution techniques based on optimization and simulation approaches traditional to industrial engineering and operations research. Recommendations: basic knowledge of probability and statistics, numerical methods, and optimization.

Graduate Seminars, Advanced Topics, Research

IE:5000 Graduate Seminar: Industrial Engineering 1 s.h.
Recent advances and research in industrial engineering presented by guest lecturers, faculty, students. Requirements: graduate standing.

IE:5995 Contemporary Topics in Industrial Engineering 1 s.h.
New topics or areas of study not offered in other industrial engineering courses; topics based on faculty/student interest.

IE:5998 Individual Investigations: Industrial Engineering 1 s.h.
Individual projects for industrial engineering graduate students: laboratory study, engineering design, analysis and simulation of an engineering system, computer software development, research. Requirements: graduate standing.

IE:5999 Research: Industrial Engineering M.S. Thesis 1 s.h.
Experimental and/or analytical investigation of an approved topic for partial fulfillment of requirements for M.S. with thesis in industrial engineering. Requirements: graduate standing.
IE:7995 Advanced Topics: Industrial Engineering
Discussion of current literature in industrial engineering.

IE:7998 Special Topics in Industrial Engineering
arr.

IE:7999 Research: Industrial Engineering Ph.D. Dissertation
arr.
Experimental and/or analytical investigation of an approved topic for partial fulfillment of requirements for Ph.D. in industrial engineering.

Mechanical Engineering

Special Topics
ME:0000 Cooperative Education Training Assignment: Mechanical Engineering
0 s.h.
Mechanical engineering students participating in the Cooperative Education Program register in this course during work assignment periods; registration provides a record of participation in the program on the student's permanent record. Requirements: admission to the Cooperative Education Program.

ME:0002 Half-time Cooperative Education Training Assignment: Mechanical Engineering
0 s.h.
Registration for work assignment periods; for students participating in the Cooperative Education Program.

ME:4098 Individual Investigations: Mechanical Engineering
arr.
Individual projects for mechanical engineering undergraduate students; laboratory study; engineering design project; analysis, synthesis, simulation of an engineering system; computer software development, research.

General Topics
ME:2020 Mechanical Engineering Sophomore Seminar
0 s.h.
Introduction to the mechanical engineering profession and curriculum; ethics and professionalism in classroom and workplace; mentorship program and professional societies; visits to laboratories and local companies. Requirements: sophomore or transfer standing.

ME:3091 Professional Seminar: Mechanical Engineering
0 s.h.
Professional aspects of mechanical engineering; presentations, student/faculty interaction, professional society involvement, panel discussions, plant trip. Requirements: junior standing.

ME:3351 Engineering Instrumentation
2 s.h.
Basic elements of measuring circuits (bridges, voltage dividers, shunts, transformers); laboratory instrumentation (oscilloscopes, multimeters, power supplies, signal generators); amplifiers; frequency response principles; sensors; data acquisition, signal processing, filtering using Labview. Prerequisites: ENGR:2120 and PHYS:1612.

ME:4080 Experimental Engineering
4 s.h.

ME:4086 Mechanical Engineering Design Project
2-3 s.h.
Application of mechanical, thermal, fluid systems design; student or team design projects initiated at various levels in the design process and carried through to higher levels; emphasis on synthesis, written and oral communication. Corequisites: ME:4048 or ME:4055.

ME:4110 Computer-Aided Engineering
3 s.h.
Computational engineering modeling and simulation, geometric modeling, grid generation, finite-element and finite-volume methods, uncertainty analysis, optimization, engineering applications. Prerequisites: ENGR:2750 and ME:3052. Same as CEE:4515.

ME:4111 Numerical Calculations
3 s.h.
Development of algorithms for functional approximations, numerical differentiation and integration; solution of algebraic and differential equations, with emphasis on digital computations; initial and boundary value problems. Prerequisites: MATH:2560. Same as CEE:4511.

ME:4112 Engineering Design Optimization
3 s.h.
Engineering design projects involving modeling, formulation, and analysis using optimization concepts and principles; linear and nonlinear models, optimality conditions, numerical methods. Prerequisites: ENGR:2110 and MATH:2550. Requirements: junior standing. Same as CEE:4512.

ME:4114 Predictive Human Modeling
3 s.h.
Introduction to basic concepts of predictive human modeling, fundamental programming, Denavit-Hartenberg notation (robotics), optimization, posture prediction, interface development, validation, and applied problems for digital human models (DHM). Prerequisites: ENGR:1300 and MATH:2550.

ME:4115 Finite Element I
3 s.h.
One- and two-dimensional boundary value problems; heat flow, fluid flow, torsion of bars; trusses and frames; isoparametric mapping; higher order elements; elasticity problems; use of commercial software. Prerequisites: ENGR:2750. Same as CEE:4533.

ME:4131 Manufacturing Systems
3 s.h.
Manufacturing and logistics systems, supply chain management, MRP/ERP systems, lean manufacturing, concurrent engineering, value stream mapping and six sigma. Offered spring semesters. Prerequisites: IE:3700 and ENGR:2760. Same as IE:3300.
**ME:4186 Enhanced Design Experience**  
2-3 s.h.  
Experience working in teams on industry-sponsored design and product development projects scheduled for production; emphasis on practical experience with the complete design process, from conceptualization through prototyping, evaluation, testing, and production; written and oral communication. Prerequisites: ME:4086.

**ME:5113 Mathematical Methods in Engineering**  
3 s.h.  

**ME:5129 Information Systems for Resource Management**  
3 s.h.  
Understanding and managing natural and engineered resources requiring data-reach foundation; management of data; complex data-driven technologies integrated into data and information systems (DIS); hands-on opportunity to develop or use capabilities of DIS for study or research area of interest (science, engineering, industrial operation); wind power generation, an emerging field in Iowa, used as a case study for illustrating key DIS components, links, and functionalities. Same as CEE:5129, ECE:5129, GEOG:5129.

**ME:6534 Applied Optimal Design**  
3 s.h.  
Optimal design problem formulation; optimality conditions; linear, quadratic, convex, and nonlinear programming; Lagrangian duality; numerical algorithms for unconstrained and constrained design problems, design sensitivity analysis, engineering applications. Prerequisites: CEE:5513. Same as CEE:6534.

**Thermal Engineering and Fluids**

**ME:3040 Thermodynamics II**  
3 s.h.  
Power and refrigeration cycles; mixtures of gases, psychometric mixtures; availability; thermodynamics of combustion and chemical equilibrium. Prerequisites: ENGR:2130.

**ME:3045 Heat Transfer**  
3 s.h.  
Principles of heat transfer by conduction, convection, radiation; analytical and numerical methods of solution; applications to engineering problems. Prerequisites: ENGR:2510 and MATH:3550. Corequisites: ENGR:2730.

**ME:4048 Energy Systems Design**  
4 s.h.  
Principles and design of energy conversion systems, including solar, wind, and geothermal power systems; design of thermal-fluid system components, modeling and simulation of systems, optimization techniques; design projects. Prerequisites: ME:3040 and ME:3045.

**ME:4125 Biomimetic Fluid Dynamics**  
3 s.h.  
Study and development of engineered systems that mimic the structure and function of biological systems; overview of the fluid dynamic principles that govern locomotion by swimming or flapping flight; equations of motion, fundamentals of aerodynamics; analytical models of force generation for swimming and flight; parameters governing effective locomotion; experimental and numerical studies to understand the present state of the art, challenges, and important questions. Prerequisites: ENGR:2510.

**ME:4142 Wind Turbine Aerodynamics**  
3 s.h.  
Fluid mechanics of wind turbines and wind farms; engineering methodologies to design wind turbine blades; evaluation of rotor wakes; interaction between machines; effects of topography on wind turbine and wind farm performance. Prerequisites: ENGR:2510.

**ME:4164 Fundamentals of Wind Turbines**  
arr.  
Application of fundamental principles of thermodynamics, fluid mechanics, and mechanical systems to wind turbine engineering; fundamentals of horizontal-axis wind turbines, wind energy conversion to useful work; wind turbine aerodynamics, performance, design of components; overview of wind resource and historical development of wind turbines; introduction to wind turbine installation and wind farm operation.

**ME:5143 Computational Fluid and Thermal Engineering**  
3 s.h.  
Governing equations of fluid flow and heat transfer; basic numerical techniques for solution of the governing equations; estimation of accuracy and stability of the approximations; boundary conditions; grid generation; applications to flows and heat transfer in engineering systems; familiarity with software for analysis and design of thermo-fluids systems. Prerequisites: ME:3045.

**ME:5145 Intermediate Heat Transfer**  
3 s.h.  
Steady and unsteady conduction; forced and natural convection; surface and gaseous radiation; condensation and evaporation; analytical and numerical methods and applications. Prerequisites: ME:3045.

**ME:5146 Modeling of Materials Processing**  
3 s.h.  
Manufacturing processes for metals, polymers, semiconductors; processing by casting, solidification, crystal growth, polymer molding and extrusion, welding, heat treating, application of optical (laser) and electromagnetic energy; processes that use momentum, heat, mass transfer principles; measurement and instrumentation for materials processing; current topics in materials processing. Corequisites: ME:3045.

**ME:5149 Propulsion Engineering**  
3 s.h.  
Opportunity to develop basic understanding and knowledge of rocket and airbreathing propulsion systems, relevant terminology and analysis techniques, parametric cycle analysis for ideal engines, off-design analysis methods, problem-solving methodology. Requirements: ME:3040 or graduate standing.
ME:5160 Intermediate Mechanics of Fluids  3 s.h.
Basic concepts and definitions; pressure distribution in a fluid; governing equations and boundary conditions; integral and differential analysis; dimensional analysis and similarity; experimental analysis; laminar and turbulent internal and external flows; potential flows; engineering applications. Prerequisites: ENGR:2510. Same as CEE:5369.

ME:5162 Experimental Methods in Fluid Mechanics and Heat Transfer  3 s.h.
Hands-on experience in methodology of conducting experiments in fluid mechanics and heat transfer from design to data acquisition and processing; essential theoretical elements, experimental methodologies, data acquisition systems, uncertainty analysis; wide variety of instruments for fundamental and applied experimentation; work in small groups; design, implement, test, and report an experiment in area of interest. Same as CEE:5372.

ME:5180 Measurements in Fluid Mechanics: Fundamental and Advanced Topics  3 s.h.
General concepts in fluid mechanics measurement; classical methods for flow rate, pressure, velocity, temperature, concentration, and wall shear stress; state-of-the-art methods for flow visualization and full-field quantitative measurement; introduction to advanced optical measurement method, i.e., particle image velocimetry (PIV), and related image processing techniques; hands-on training with a class project assignment on writing a computer program to evaluate experimental image recordings. Prerequisites: ENGR:2510. Requirements: primary knowledge of fluid mechanics, thermodynamics, and heat transfer; basic skill in computer language.

ME:5210 Intermediate Thermodynamics  3 s.h.
Fundamental principles of thermodynamics as applied to phase equilibrium; properties of fluids, first and second law, variable composition systems, behavior of real fluids, mathematical techniques for solution thermodynamics. Requirements: CBE:3105 or ME:3040 or graduate standing. Same as CBE:5110.

ME:6245 Diffusive Transport  3 s.h.
Diffusive transport of heat, mass, and momentum; phenomenological laws and analogies; analytical and numerical solution techniques; inverse heat conduction; multiphase and multicomponent systems. Prerequisites: ME:5145. Same as CBE:6145.

ME:6260 Viscous Flow  3 s.h.
Equations of viscous flow; classical analytical and numerical solutions; flow regimes and approximations; laminar boundary layers—equations, solution methods, applications; stability theory and transition; incompressible turbulent flow—mean-flow and Reynolds-stress equations, modeling, turbulent boundary layers and free shear flows. Requirements: for ME:6260 — ME:5160; for CEE:6376 — CEE:5369. Same as CEE:6376.

ME:6262 Inviscid Flow  3 s.h.
Derivation of governing equations for fluid flow; general theorems for motion of inviscid, incompressible flows; solution techniques for two- and three-dimensional irrotational flows; forces and moments acting on immersed bodies; vortex kinematics and dynamics; steady and unsteady aerodynamic theory. Prerequisites: ME:5160.

ME:6263 Compressible Flow  arr.
Compressible flow behavior; 1-D unsteady flow and appropriate use of x-t diagrams; 2-D flows and use of the method of characteristics; Burgers’ Equation and its properties.

ME:6266 Interfacial Flows and Transport Processes  3 s.h.
Physics of fluid interfaces and numerical techniques to simulate interface dynamics; interfacial flow coupled with thermal-fluid transport, from molecular interactions to continuum approximations; development of computer code segments to track and represent interface-flow interactions. Prerequisites: ME:5145 and ME:5160.

ME:6267 Multiphase Flow and Transport  3 s.h.
Thermodynamic and mechanical aspects of interfacial phenomena and phase transitions; nucleation, phase-change, species transport, particulate flows, liquid-vapor systems, solidification, porous media. Prerequisites: ME:5145 and ME:5160.

ME:6268 Turbulent Flows  3 s.h.
Origin; need for modeling, averages, Reynolds equations, statistical description; experimental methods and analysis; turbulence modeling; free shear layers and boundary layers; complex shearflows; development of computational strategies; recent literature on theory and applications, chaos phenomena. Prerequisites: ME:5160.

ME:6269 Computational Fluid Dynamics and Heat Transfer  3 s.h.
Development of numerical and algebraic approximations for elliptic, parabolic, hyperbolic partial differential equations; finite-volume, spectral, pseudo-spectral, Galerkin techniques; stability of numerical methods; CFL condition; stiff problems; adaptive grid generation and boundary-fitted coordinates; numerical solutions for one- and two-dimensional compressible and incompressible fluid flow and heat transfer problems. Prerequisites: ME:4111 and ME:5160.

ME:7296 Advanced Topics in Thermal and Fluid Engineering  arr.
Mechanical Systems

**ME:3052 Mechanical Systems** 4 s.h.
Topics in mechanical behavior and failure of materials; materials selection in design; stress and deflection analysis; static failure theories; fatigue and durability in design; fracture, statistical, and reliability considerations; introduction to finite element analysis using commercial software packages; standards, product liability, engineering ethics. Prerequisites: ENGR:2750. Same as EEE:5520. Corequisites: ENGR:2720 and ENGR:2760 and STAT:2020.

**ME:3179 Continuum Mechanics** arr.
Mechanics of continuous media; kinematics of deformation, concepts of stress and strain; conservation laws of mass, momentum and energy; constitutive theories; boundary and initial value problems. Prerequisites: ENGR:2510 or ENGR:2750. Same as CEE:3179.

**ME:4055 Mechanical Systems Design** 3 s.h.
Kinematics of mechanisms, dynamics and vibration of machines, cam and gear, machine elements, computer-aided analysis of machines. Prerequisites: ENGR:2710 and ME:3052.

**ME:4116 Manufacturing Processes and Automation** 3 s.h.
Material processing, metal cutting theories, forming, micro/nano fabrication, programmable logic controller, computer numerical controllers, discrete control system, DC and AC servo motors, Command generation. Prerequisites: ENGR:2760. Same as IE:4116.

**ME:4153 Fundamentals of Vibrations** 3 s.h.
Vibration of linear discrete and continuous mechanical and structural systems; harmonic, periodic, and arbitrary excitation; modal analysis; applications. Prerequisites: ENGR:2750. Same as CEE:4532.

**ME:5100 Intermediate Mechanics of Deformable Bodies** 3 s.h.
Application of equilibrium analyses, strain-displacement relations, and constitutive relationships to practical structural systems and elementary plane elasticity problems. Prerequisites: ENGR:2750. Same as CEE:5540, BME:5660.

**ME:5154 Intermediate Kinematics and Dynamics** 3 s.h.
Kinematic and dynamic analysis of mechanical systems; computational kinematics, Lagrangian dynamics, principle of virtual work in dynamics, constrained dynamics, spatial dynamics. Prerequisites: ENGR:2710.

**ME:5159 Fracture Mechanics** 3 s.h.
3-D stress states, definition and criteria for failure, nominal and local yield phenomena, linear elastic and elastic plastic fracture mechanics, plane stress and strain, fracture toughness, J-Integral, crack opening displacement, environmental assisted cracking, fatigue crack growth, safe and damage tolerant design. Prerequisites: BME:4910 or ME:4055 or ME:5150. Same as CEE:5549.

**ME:5167 Composite Materials** 3 s.h.
Mechanical behavior of composite materials and their engineering applications; composite constituents (fibers, particles, matrices) and their properties and behavior; macromechanical behavior of composite laminae; micromechanical predictions of composite overall properties; classical lamination theory; composite beams and plates. Prerequisites: ENGR:2750. Same as CEE:5137.

**ME:5360 Control Theory** 3 s.h.
State space approach; controllability, observability, canonical forms, Luenberger observers, feedback control via pole placement, stability, minimal realization and optimal control. Prerequisites: ECE:3600. Same as ECE:5600.

**ME:5362 Computer-Based Control Systems** 3 s.h.
Discrete and digital control systems; application of computers in control; sampling theorem; discrete time system models; analysis and design of discrete time systems; control design by state variable and input/output methods; advanced topics in digital controls; lab. Prerequisites: ECE:5600. Same as ECE:5640.

**ME:6214 Analytical Methods in Mechanical Systems** 3 s.h.
Vector and function spaces; functionals and operators in Hilbert spaces; calculus of variations and functional analysis with application to mechanics; Ritz and Galerkin methods. Prerequisites: ME:5113. Same as CEE:6310.

**ME:6215 Finite Element II** 3 s.h.
Computer implementation; plate and shell elements; mixed and hybrid formulations; nonlinear analysis; recent development; introduction to boundary element method. Prerequisites: CEE:4533. Same as CEE:6532.

**ME:6216 Laser Materials Processing** 3 s.h.
Proficient engineering background involved in laser processing and manufacturing; fundamentals and operation principles for various types of laser systems, laser optics, principles of laser-matter interactions, laser-induced thermal and thermo-mechanical effects; emerging areas of laser applications (e.g., microscale and nanoscale laser processing, ultrastar laser processing) and related energy transport analyses; video demonstrations. Prerequisites: ME:3045 and MATH:3550.

**ME:6217 Advanced Modeling and Simulation for Manufacturing** 3 s.h.
Mechanical and Industrial Engineering

How materials often behave in a complicated manner involving deeply coupled effects among stress/stain, temperature, and microstructure during a manufacturing process; modeling and prediction of material processes based on a metallo-thermomechanical coupled analysis; focus on heat transfer modeling in material processes, fundamental mechanics aspects required for material processing analysis, and microstructural evolution modeling in material processes. Prerequisites: ME:3045 and ME:4115.

**ME:6246 Advanced Numerical Methods for Mechanical Systems** 3 s.h.
Introduction to meshfree particle methods, extended finite element method, material stability analysis, thermal-mechanical coupling, and coupling of finite element/meshfree methods. Requirements: ME:4115 or ME:5143 or background in computational mechanics, computational chemistry, or computational physics.

**ME:6247 Contact Mechanics** 3 s.h.
Varied aspects of contact mechanics and engineering applications, including stationary contacts, sliding, rolling, impact, and fretting fatigue; emphasis on theoretical basis of solutions of contact mechanics problems; mathematical methods of solving contact problems using Green's function method; complex potentials and integral transform methods. Prerequisites: ME:5113 and ME:5150.

**ME:6255 Multiscale Modeling** 3 s.h.
Computational modeling of engineering materials ranging from molecular to continuum scales, molecular dynamics and Monte Carlo methods, nanoscale continuum modeling, scale-coupling methods. Prerequisites: ME:4115 or ME:5143. Same as CEE:7549.

**ME:6258 Computational Ship Hydrodynamics** 3 s.h.
Introduction to computation of problems in three main areas of ship hydrodynamics: resistance and propulsion, seakeeping, and maneuvering; focus on issues of simulating operating ships, modeling methods, and numerical techniques used to approach ship hydrodynamics. Prerequisites: ME:5160. Corequisites: ME:5143.

**ME:6261 Multibody System Dynamics** 3 s.h.
Introduction to principles of analytical and computational dynamics for rigid and flexible multibody systems; spatial kinematics and dynamics of rigid body systems, numerical solution procedures for multibody dynamics analysis, and flexible multibody dynamics. Prerequisites: ME:5154.

**ME:6278 Nonlinear Elasticity** 3 s.h.
Nonlinear elasticity theory; modern applications in biomechanics; vectors and tensors, constitutive theory of elastic material, some exact solutions of boundary value problems, inverse deformation relations, stability of elastic material, theories of tissue adaptive response. Prerequisites: ME:5150. Requirements: elementary linear elasticity.

**ME:7250 Advanced Fracture Mechanics** 3 s.h.
Fracture of modern engineering materials; linear-elastic fracture; computational methods; functionally graded materials; elastic-plastic fracture; multiscale fracture and fatigue crack initiation. Prerequisites: ME:5113 and (ME:4115 or ME:5159). Same as CEE:7250.

**ME:7256 Computational Solid Mechanics** 3 s.h.
Advanced computational methods for nonlinear and dynamic analysis of solids, structures; new space- and time-discretization methods for problems, including highly nonlinearities, large deformation, contact/impact conditions. Prerequisites: ME:4115 and ME:5113.

**ME:7257 Probabilistic Mechanics and Reliability** 3 s.h.
Stochastic and reliability analysis of mechanical systems; computational methods for structural reliability; random eigenvalue problem; random field and stochastic finite element methods. Prerequisites: ME:4115 and ME:5113.

**ME:7259 Mechanical Design in Structures** 3 s.h.
Discrete and continuum variational equilibrium equations, discrete design sensitivity analysis for static responses and eigenvalues, interactive design workstation, continuum sizing design sensitivity analysis for static responses and eigenvalues, design sensitivity analysis of structural dynamics, differentiability theory, shape optimal design, shape design sensitivity analysis, design sensitivity of nonlinear structural systems. Prerequisites: ME:4115 and ME:5113 and ME:5150.

**ME:7265 Multiphysics Modeling of Solids** 3 s.h.
Coupling of mechanical, electrical, electromagnetic, and thermal fields in solids; how to formulate and solve applied multiphysics problems where mechanical, electromagnetic, and thermal loads must be taken into account. Prerequisites: ME:5150.

**ME:7295 Advanced Topics in Mechanical Systems** 3 s.h.
Advanced contemporary topics in mechanical systems engineering not covered in other courses and determined by student/faculty interest.

**Graduate Seminars, Advanced Topics, Research**

**ME:5195 Contemporary Topics in Mechanical Engineering** arr.
New topics in fluid and thermal sciences and mechanical systems not covered in other courses; topic and coverage determined by student/faculty interest. Requirements: junior standing.

**ME:6191 Graduate Seminar: Mechanical Engineering** 1 s.h.
Presentation and discussion of recent advances and research in mechanical engineering by guest lecturers, faculty, students.

**ME:6198 Individual Investigations: Mechanical Engineering** arr.
Individual project in mechanical engineering, for department graduate students; laboratory study, engineering design project, analysis and simulation of an engineering system, computer software development, research.

**ME:6199 Research: Mechanical Engineering M.S. Thesis**
Experimental and/or analytical investigation of an approved topic for partial fulfillment of requirements for M.S. with thesis in mechanical engineering.

**ME:7299 Research: Mechanical Engineering Ph.D. Dissertation**
Experimental and/or analytical investigation of an approved topic for partial fulfillment of requirements for Ph.D. in mechanical engineering.
Technological Entrepreneurship

**Undergraduate certificate:** technological entrepreneurship

**Web site:** http://www.engineering.uiowa.edu/about/college-services/earn-technological-entrepreneurship-certificate

The College of Engineering partners with the Tippie College of Business to offer the Certificate in Technological Entrepreneurship. The program is administered by the John Pappajohn Entrepreneurial Center in the business college.

**Undergraduate Program of Study**

- Certificate in Technological Entrepreneurship

### Certificate

The Certificate in Technological Entrepreneurship requires a minimum of 18 s.h. of credit. Certificate students study how the entrepreneurial process relates to technology-based businesses. The program is intended for students who plan to start and operate their own businesses as well as for those who would like to develop an understanding of how to manage innovation in business environments.

Students who complete the certificate program are able to:

- understand sound business thinking;
- use team-building skills in small and large companies;
- understand the entrepreneurial approach to acquiring and managing resources;
- create a business plan;
- bridge engineering and business principles; and
- network with businesses and industries.

The certificate program is open to Bachelor of Science in Engineering students who have earned at least 45 s.h. of credit toward the B.S.E. and have a University of Iowa g.p.a. of at least 2.75. Students must declare their intention to pursue the certificate on ISIS and must apply for admission using the application form available online.

Students must complete at least 12 s.h. of the 18 s.h. required for the certificate at the University of Iowa or in approved study abroad courses. They must maintain a g.p.a. of at least 2.00 in work toward the certificate. Students must be granted the B.S.E. and complete all certificate requirements in order to receive the certificate.

The Certificate in Technological Entrepreneurship requires the following course work.

### FOUNDATION COURSE

One of these:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENTR:1350</td>
<td>Foundations in Entrepreneurship</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>IE:2500</td>
<td>Engineering Economy</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

### ENTREPRENEURSHIP CORE

Both of these:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENTR:2000</td>
<td>Entrepreneurship and Innovation</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ENTR:3100</td>
<td>Entrepreneurial Finance</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

### ENTREPRENEURSHIP COURSE IN THE MAJOR

One of these, depending on a student’s engineering major:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>BME:4910</td>
<td>Biomedical Engineering Senior Design I (biomedical engineering majors)</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>CBE:4109</td>
<td>Chemical Engineering Process Design I (chemical engineering majors)</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>CEE:3084</td>
<td>Project Design and Management in Civil Engineering (civil engineering majors)</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ECE:4890</td>
<td>Senior Electrical Engineering Design (electrical engineering majors)</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>IE:4600</td>
<td>Industrial Engineering Design Project (industrial engineering majors)</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>ME:4086</td>
<td>Mechanical Engineering Design Project (mechanical engineering majors)</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

### ENTREPRENEURSHIP ELECTIVES

Students customize their programs with their choice of electives. They earn sufficient elective credit to reach the total of 18 s.h. required for the certificate.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>BME:4920</td>
<td>Biomedical Engineering Senior Design II</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>ENTR:3200</td>
<td>Entrepreneurial Marketing</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ENTR:3300</td>
<td>Legal Aspects of Entrepreneurship</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ENTR:3400</td>
<td>Strategic Management of Technology and Innovation</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ENTR:3500</td>
<td>Social Entrepreneurship</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ENTR:3595</td>
<td>Nonprofit Organizational Effectiveness I</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ENTR:3600</td>
<td>E-Commerce Strategies for Entrepreneurs</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ENTR:4000</td>
<td>Seminar in Entrepreneurship</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ENTR:4200</td>
<td>Entrepreneurship: Business Consulting</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ENTR:4300</td>
<td>Entrepreneurship: Advanced Business Planning</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ENTR:4400</td>
<td>Managing the Growth Business</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ENTR:4450</td>
<td>Professional Sports Management</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ENTR:4460</td>
<td>Entrepreneurship and Global Trade</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ENTR:4510</td>
<td>Arts Leadership Seminar</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ENTR:4600</td>
<td>Advanced Venture Finance</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ENTR:4900</td>
<td>Academic Internship</td>
<td>1-9 s.h.</td>
</tr>
<tr>
<td>ENTR:9000</td>
<td>Developing Professional Service Business</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

Any entrepreneurship course (prefix ENTR), with certificate advisor’s approval

Any entrepreneurship course (prefix ENTR), with certificate advisor’s approval

Any entrepreneurship course (prefix ENTR), with certificate advisor’s approval
Wind Energy

Chair, Department of Mechanical and Industrial Engineering
• Andrew Kusiak

Undergraduate certificate: wind energy
Web site: http://www.engineering.uiowa.edu/mie/undergraduate-program/certificate-wind-energy

Wind energy has become a major source of clean energy and is expected to grow over the coming decades. That growth will create new jobs and a need for professionals who have diverse backgrounds and knowledge of wind energy fundamentals. The Certificate in Wind Energy introduces undergraduate students to wind energy. The program is interdisciplinary, integrating course work and faculty expertise from the Departments of Mechanical and Industrial Engineering, Civil and Environmental Engineering, and Electrical and Computer Engineering (College of Engineering) and the Department of Geographical and Sustainability Sciences (College of Liberal Arts and Sciences).

Undergraduate Program of Study

• Certificate in Wind Energy

Certificate
The Certificate in Wind Energy requires 18 s.h. of credit. The certificate program is open to current University of Iowa undergraduate students and to all individuals who hold a bachelor's degree and are not enrolled in a graduate or professional degree program. Students must maintain a g.p.a. of at least 2.00 in work for the certificate.

College of Engineering students earning the certificate are advised by the Department of Mechanical and Industrial Engineering (p. 894); College of Liberal Arts and Sciences students are advised by the Department of Geographical and Sustainability Sciences (p. 323).

Students must apply to enter the certificate program by completing the Certificate in Wind Energy Application on the certificate's web site. The site also provides information about wind energy research at the University and graduate study in wind power management.

Work for the certificate focuses on energy, environment, and information science and includes core courses and electives. Mechanical engineering students may use the certificate as a tailored engineering focus area by adding an approved math/science elective.

Several certificate courses have prerequisites; students must complete all of a course's prerequisites before they may register for the course. Prerequisites do not count toward the 18 s.h. required for the certificate. Prerequisites for certificate courses are listed on the Certificate in Wind Energy web site.

The Certificate in Wind Energy requires the following course work.

CORE COURSES
Both of these:
GEOG:3560 Spatial Analyses of Wind Energy 3 s.h.
IE:4550 Wind Power Management 3 s.h.

ELECTIVES
Students complete 12 s.h. in courses chosen from these:
CBE:2030 Energy and Society 3 s.h.
CBE:3160 Engineering Analysis of Alternative Energy Systems 3 s.h.
CBE:4410 Sustainable Systems 3 s.h.
ECE:5620 Electric Power Systems 3 s.h.
ECE:5630 Sustainable Energy Conversion 3 s.h.
GEOG:2310 Introduction to Climatology 3 s.h.
GEOG:3500 Introduction to Environmental Remote Sensing 3 s.h.
GEOG:3520 GIS for Environmental Studies 3 s.h.
GEOG:3540 Introduction to Geographic Visualization 3 s.h.
GEOG:3750 Environmental Quality: Science, Technology, and Policy 3 s.h.
GEOG:3780 U.S. Energy Policy in Global Context 3 s.h.
GEOG:4010 Field Methods in Physical Geography 3 s.h.
GEOG:4030 Senior Project Seminar (registration required for wind energy project credit) 3 s.h.
GEOG:4500 Applications in Environmental Remote Sensing 4 s.h.
GEOG:4520 GIS for Environmental Studies: Applications 3 s.h.
GEOG:4580 Introduction to Geographic Databases 3 s.h.
GEOG:4750 Environmental Impact Analysis 4 s.h.
ME:4142 Wind Turbine Aerodynamics 3 s.h.
ME:4164 Fundamentals of Wind Turbines arr.
Graduate College

Dean
• John C. Keller

Web site: http://www.grad.uiowa.edu/

The University of Iowa has been a leading center of advanced study for more than a century. Presently, the Graduate College accounts for nearly one-fifth of the University's total enrollment. This high ratio reflects the breadth of the University's graduate programs and resources, the strength of a graduate faculty with a long tradition of personal and professional concern for students, and the opportunities afforded graduate students for involvement, recognition, and support.

The Graduate College is responsible for the review and approval of proposals for new graduate programs and for the periodic survey and evaluation of existing programs. Through its administration of scholarship, fellowship, and research assistantship funds, the college encourages research and strengthening of departments. In cooperation with the Office of the Vice President for Research, it offers assistance to individual faculty members in finding the resources necessary for research projects, and it works with the other colleges and departments of the University to formulate policies concerning selection, supervision, and support of graduate students.

The faculty of the Graduate College is made up of all University tenure-track faculty members at the ranks of assistant professor, associate professor, and professor. A 17-member Graduate Council, elected from and by the graduate faculty and the Graduate Student Senate, is the executive committee of the graduate faculty and is advisory to the dean of the Graduate College.

Degrees Offered

The Graduate College confers the Master of Arts (M.A.), Master of Science (M.S.), Master of Accountancy (M.Ac.), Master of Arts in Teaching (M.A.T.), Master of Computer Science (M.C.S.), Master of Fine Arts (M.F.A.), Master of Health Administration (M.H.A.), Master of Physical Therapy (M.P.T.), Master of Public Health (M.P.H.), Educational Specialist (Ed.S.), Master of Science in Nursing (M.S.N.), Master of Social Work (M.S.W.), Doctor of Philosophy (Ph.D.), Doctor of Musical Arts (D.M.A.), Doctor of Nursing Practice (D.N.P.), Doctor of Physical Therapy (D.P.T.), and Doctor of Audiology (Au.D.) degrees.

The college currently confers degrees in the following major fields.

Accounting: M.Ac.*
African American World Studies: M.A.*
American Studies: M.A.*, Ph.D.
Anatomy and Cell Biology: M.S., Ph.D.
Anthropology: M.A.*, Ph.D.
Applied Mathematical and Computational Sciences: Ph.D.
Art: M.A.*, M.F.A.
Art History: M.A.*, Ph.D.
Asian Civilizations: M.A.*
Astronomy: M.S.*
Biochemistry: M.S., Ph.D.
Biology: M.S., Ph.D.* (see Integrated Biology)
Biomedical Engineering: M.S.*, Ph.D.
Biostatistics: M.S.*, Ph.D.
Book Arts: M.F.A.
Business Administration: M.A.*, Ph.D.
Business Analytics: M.S.*
Chemical and Biochemical Engineering: M.S.*, Ph.D.
Chemistry: M.S.*, Ph.D.
Civil and Environmental Engineering: M.S.*, Ph.D.
Classics: M.A.*, Ph.D.
Clinical Investigation: M.S.*
Communication Studies: M.A.*, Ph.D.
Community and Behavioral Health: M.S., Ph.D.
Comparative Literature: Ph.D.*
Comparative Literature—Translation: M.F.A.
Computer Science: M.S.*, M.C.S.*, Ph.D.
Dance: M.F.A.
Dental Public Health: M.S.
Economics: M.A.*, Ph.D.
Education: M.A.*, M.A.T.*, Ed.S.*, Ph.D.
Educational Policy and Leadership Studies: M.A.*, Ed.S.*, Ph.D.
Electrical and Computer Engineering: M.S.*, Ph.D.
English: M.A.*, M.F.A., Ph.D.
Epidemiology: M.S.*, Ph.D.
Exercise Science: M.S., Ph.D.*
Film and Video Production: M.A.*, M.F.A.
Film Studies: M.A.*, Ph.D.
Free Radical and Radiation Biology: M.S.*, Ph.D.
French and Francophone World Studies: M.A.*, Ph.D.
Genetics: Ph.D.
Geography: M.A.*, Ph.D.
Geoscience: M.S.*, Ph.D.
German: M.A.*, Ph.D.*
Greek: M.A.*
Health and Human Physiology: M.S.*, Ph.D.
Health and Sport Studies: M.A.*, Ph.D.*
Health Management and Policy: M.H.A.*
Health Services and Policy: Ph.D.
History: M.A.*, Ph.D.
Human Toxicology: M.S., Ph.D.
Immunology: Ph.D.
Industrial Engineering: M.S.*, Ph.D.
Informatics: M.S.*, Ph.D.
Integrated Biology: M.S., Ph.D.
Integrated Physiology: Ph.D.* (see Health and Human Physiology)
International Studies: M.A.*
Journalism: M.A.*
Latin: M.A.*
Leisure Studies: M.A.*
Library and Information Science: M.A.*
Linguistics: M.A.*, Ph.D.
Mass Communications: Ph.D.
Mathematics: M.S.*, Ph.D.
Mechanical Engineering: M.S.*, Ph.D.
Microbiology: M.S., Ph.D.
Molecular and Cellular Biology: Ph.D.
Molecular Biology: Ph.D.
Molecular Physiology and Biophysics: M.S.*, Ph.D.
Music: M.A.*, M.F.A., D.M.A., Ph.D.
Neuroscience: Ph.D.
Nursing: M.S.N., D.N.P., Ph.D.
Occupational and Environmental Health: M.S., Ph.D.
Operative Dentistry: M.S.*
Oral Science: M.S., Ph.D.*
Orthodontics: M.S.
Pathology: M.S.
Pharmacology: M.S., Ph.D.
Pharmacy: M.S.*, Ph.D.
Philosophy: M.A.*, Ph.D.
Physical Rehabilitation Science: Ph.D.
Physical Therapy: M.A.*, D.P.T.
Physics: M.S.*, Ph.D.
Political Science: M.A.*, Ph.D.
Psychological and Quantitative Foundations: M.A.*, Ed.S.**, Ph.D.
Psychology: M.A.*, Ph.D.
Public Health: M.P.H.**
Rehabilitation and Counselor Education: M.A.*, Ph.D.
Religious Studies: M.A.*, Ph.D.
Science Education: M.S.*, M.A.T.**, Ph.D.
Second Language Acquisition: Ph.D.
Social Work: M.S.W.*, Ph.D.
Sociology: M.A.*, Ph.D.
Spanish: M.A.*, Ph.D.
Spanish Creative Writing: M.F.A.
Speech and Hearing Science: Ph.D.
Speech Pathology and Audiology: M.A.*, Au.D.
Statistical Genetics: Ph.D.***
Statistics: M.S.*, Ph.D.
Stomatology: M.S.***
Strategic Communication: M.A.**
Teaching and Learning: M.A.*, M.A.T.**, Ph.D.
Theatre Arts: M.F.A.
Translational Biomedicine: M.S.**, Ph.D.***
Urban and Regional Planning: M.A.*, M.S.*
Women's Studies: Ph.D.***

*Degree offered with or without thesis
**Nonthesis degree
***Student entry suspended

Interdisciplinary Degree Programs

The Graduate College participates in a number of University of Iowa interdisciplinary degree programs. Detailed information about the following master's and doctoral degree programs is provided later in these Graduate College sections of the Catalog: Applied Mathematical and Computational Sciences (p. 925), Genetics (p. 936), Human Toxicology (p. 938), Immunology (p. 940), Informatics (p. 942), International Studies, Molecular and Cellular Biology (p. 953), Neuroscience (p. 955), and Translational Biomedicine (p. 958).

In addition to the degree programs listed above, the graduate faculty has authorized the awarding of interdisciplinary master's and doctoral degrees. Students seeking approval for interdisciplinary master's and doctoral programs must previously have been admitted to and enrolled in a departmental program in the Graduate College. See sections X.A. and XII.D. in the Manual of Rules and Regulations of the Graduate College on the college's web site.

Joint Programs

Joint Programs Offered Through the Graduate College

Various joint programs have been developed whereby students work simultaneously toward two degrees. Consult the appropriate Catalog sections for more information. Established joint programs include health management and policy/business administration; health management and policy/urban and regional planning; occupational and environmental health/urban and regional planning; public health/law; public health/medicine; public health/pharmacy; public health/veterinary medicine; and social work/urban and regional planning.

Joint B.S./Ph.D.: Biochemistry

The joint B.S./Ph.D. program in biochemistry enables Bachelor of Science students majoring in biochemistry to begin work toward the Ph.D. while completing the bachelor's degree. Students admitted to the program may count 12 s.h. of credit toward both the B.S. and Ph.D. degree requirements. Offered by the Graduate College, the College of Liberal Arts and Sciences, and the Carver College of Medicine; see Biochemistry (p. 1021) in the Catalog.

Joint B.A.: Biology/M.P.H. with Epidemiology Subprogram or M.S.: Epidemiology

The joint B.A. in biology/M.P.H. with epidemiology subprogram and the joint B.A. in biology/M.S. in epidemiology enable Bachelor of Arts students majoring in biology to begin work toward the M.P.H. or M.S. while completing the bachelor's degree. Students admitted to either program may count 12 s.h. of credit toward both the B.A. and the M.P.H. or M.S. degree requirements; they also may maximize their selection of upper-level classes for advanced training in epidemiology. Offered by the Graduate College, the College of Liberal Arts and Sciences, and the College of Public Health; see Biology (p. 119), Master of Public Health Program (p. 1173), and Epidemiology (p. 1158) in the Catalog.

Joint B.S.E./M.S.: Biomedical Engineering

The joint B.S.E./M.S. program in biomedical engineering enables undergraduate students majoring in biomedical engineering to begin work toward the M.S. while completing the bachelor's degree. Students admitted to the program may count a limited amount of credit toward both the B.S.E. and M.S. degree requirements. They also may attend and participate in the departmental graduate seminar and work on a master's thesis or research project before they have been awarded the B.S.E. degree. Offered by the Graduate College and the College of Engineering; see Biomedical Engineering (p. 851) in the Catalog.

Joint B.S.E.: Biomedical Engineering/ M.S.: Occupational and Environmental Health

The joint B.S.E. in biomedical engineering/M.S. in occupational and environmental health enables undergraduate students majoring in biomedical engineering to begin work toward the M.S. in occupational and environmental health while completing the bachelor's degree. Students admitted to the program may count a limited amount of credit toward both the B.S.E. and M.S. degree requirements. Offered by the Graduate College, the College of Engineering, and the College of Public Health; see Biomedical Engineering (p. 851) and Occupational and Environmental Health in the Catalog.
Joint B.S.E.: Chemical Engineering/M.S.: Chemical and Biochemical Engineering
The joint B.S.E. in chemical engineering/M.S. in chemical and biochemical engineering enables undergraduate students majoring in chemical engineering to begin work toward the M.S. while completing the bachelor's degree. Students admitted to the program may count 12 s.h. of course work, typically advanced chemistry sequences and electives, toward both the B.S.E. and M.S. degree requirements. Offered by the Graduate College and the College of Engineering; see Chemical and Biochemical Engineering (p. 861) in the Catalog.

Joint B.S.E.: Chemical Engineering/M.S.: Civil and Environmental Engineering
The joint B.S.E. in chemical engineering/M.S. in civil and environmental engineering enables undergraduate students majoring in chemical engineering to begin work toward the M.S. in civil and environmental engineering while completing the bachelor's degree. Students admitted to the program may count 12 s.h. of course work toward both the B.S.E. and M.S. degree requirements. Offered by the Graduate College and the College of Engineering; see Chemical and Biochemical Engineering (p. 861) and Civil and Environmental Engineering (p. 871) in the Catalog.

Joint B.S.E.: Civil Engineering/M.S.: Civil and Environmental Engineering
The joint B.S.E. in civil engineering/M.S. in civil and environmental engineering enables undergraduate students majoring in civil engineering to begin work toward the M.S. while completing the bachelor's degree. Students admitted to the program may count 12 s.h. of course work toward both the B.S.E. and M.S. degree requirements. They also may attend and participate in the departmental graduate seminar and work on a master's thesis or research project before they have been awarded the B.S.E. degree. Offered by the Graduate College and the College of Engineering; see Civil and Environmental Engineering (p. 871) in the Catalog.

Joint B.A. or B.S.: Computer Science/ M.C.S.
The joint B.A. or B.S. in computer science/M.C.S. program enables undergraduate students majoring in computer science to begin work toward the M.C.S. while completing the bachelor's degree. Students admitted to the program may count 12 s.h. of course work, typically advanced technical courses and electives, toward both the bachelor's and the M.C.S. degree requirements. Offered by the Graduate College and the College of Liberal Arts and Sciences; see Computer Science (p. 198) in the Catalog.

Joint B.S.E.: Electrical Engineering/ M.S.: Electrical and Computer Engineering
The joint B.S.E. in electrical engineering/M.S. in electrical and computer engineering enables undergraduate students majoring in electrical engineering to begin work toward the M.S. while completing the bachelor's degree. Students admitted to the program may count 9 s.h. toward both the B.S.E. and M.S. degree requirements. They also may count an additional 3 s.h. toward the M.S. degree requirements and engage in thesis-level research before they have been awarded the B.S.E. degree. Offered by the Graduate College and the College of Engineering; see Electrical and Computer Engineering (p. 884) in the Catalog.

Joint B.A./M.A.: German
The joint B.A./M.A. program in German enables undergraduate students majoring in German to begin work toward the M.S. while completing the bachelor's degree. Students admitted to the program may count 12 s.h. of credit toward both the B.A. and M.A. degree requirements. They also have the opportunity for early entrance into advanced courses in German. Offered by the Graduate College and the College of Liberal Arts and Sciences; see German (p. 336) in the Catalog.

Joint B.S.E./M.S.: Industrial Engineering
The joint B.S.E./M.S. program in industrial engineering enables undergraduate students majoring in industrial engineering to begin work toward the M.S. while completing the bachelor's degree. Students admitted to the program may count 6 s.h. toward both the B.S.E. and M.S. degree requirements. They also may count an additional 6 s.h. toward the M.S. degree requirements, attend one of the department's graduate seminars, and work on master's thesis research before they have been awarded the B.S.E. degree. Offered by the Graduate College and the College of Engineering; see Mechanical and Industrial Engineering (p. 894) in the Catalog.

Joint Law and Graduate Degrees
The College of Law and several Graduate College programs and schools have developed joint programs in which students pursue the Juris Doctor (J.D.) degree and a graduate degree concurrently. Offered by the Graduate College and the College of Law; see College of Law (p. 969) in the Catalog.

Joint M.A.: Library and Information Science/Certificate in Book Studies
The joint M.A. in library and information science and Certificate in Book Studies/Book Arts and Technologies prepares students for careers in special collections librarianship. Students admitted to the program receive training in the management of varied types of special collections, such as rare books, manuscripts, archives, graphics, music, and ephemera. Offered by the Graduate College; see Library and Information Science (p. 946) and Center for the Book (p. 929) in the Catalog.

Joint B.A./M.A.: Linguistics with TESL Focus
The joint B.A./M.A. program in linguistics with TESL (Teaching English as a Second Language) focus enables students majoring in linguistics to begin work toward the M.A. while completing the bachelor's degree. Students admitted to the program may count 12 s.h. of advanced course work toward both the B.A. and M.A. degree requirements and may take selected graduate-level courses before they have been awarded the B.A. degree. They also may gain experience teaching ESL at the college level early in their graduate careers. Offered by
Joint B.A./M.A.T. with Mathematics Education Subprogram
The joint B.A./M.A.T. program with mathematics education subprogram enables Bachelor of Arts students majoring in mathematics to begin work toward the M.A.T. while completing the bachelor's degree. Students admitted to the program may count 18 s.h. of credit toward both the B.A. and M.A.T. degree requirements. Offered by the Graduate College, the College of Liberal Arts and Sciences, and the College of Education; see Mathematics (p. 455) and Teaching and Learning (p. 793) in the Catalog.

Joint B.S.E./M.S.: Mechanical Engineering
The joint B.S.E./M.S. program in mechanical engineering enables undergraduates majoring in mechanical engineering to begin work toward the M.S. while completing the bachelor's degree. Students admitted to the program may count 6 s.h. toward both the B.S.E. and M.S. degree requirements. They also may count an additional 6 s.h. toward the M.S. degree requirements, attend a graduate seminar, and participate in master's thesis research before they have been awarded the B.S.E. degree. Offered by the Graduate College and the College of Engineering; see Mechanical and Industrial Engineering (p. 894) in the Catalog.

Joint B.S.E.: Mechanical Engineering/ M.S.: Civil and Environmental Engineering
The joint B.S.E. in mechanical engineering/M.S. in civil and environmental engineering enables undergraduate students majoring in mechanical engineering to begin work toward the M.S. in civil and environmental engineering while completing the bachelor's degree. Students admitted to the program may count 9 s.h. of course work toward both the B.S.E. and M.S. degree requirements. They also may count an additional 3 s.h. toward the M.S. degree requirements before they have been awarded the B.S.E. degree. Offered by the Graduate College and the College of Engineering; see Mechanical and Industrial Engineering (p. 894) and Civil and Environmental Engineering (p. 871) in the Catalog.

Joint M.D./Ph.D. (Medical Scientist Training Program)
The joint Doctor of Medicine/Doctor of Philosophy program prepares students for careers in academic medicine, with emphasis on basic and clinical research. Offered by the Graduate College and the Carver College of Medicine; see Medical Scientist Training (p. 1048) Program in the Catalog.

Joint B.S./Ph.D.: Microbiology
The joint B.S./Ph.D. program in microbiology enables undergraduate students majoring in microbiology to begin work toward the Ph.D. while completing the bachelor's degree. Students admitted to the program may count 12 s.h. of credit toward both the B.S. and Ph.D. degree requirements. Offered by the Graduate College, the College of Liberal Arts and Sciences, and the Carver College of Medicine; see Microbiology (p. 1050) in the Catalog.

Joint B.A.: Psychology/M.P.H. with Community and Behavioral Health Subprogram
The joint B.A. in psychology/M.P.H. program with community and behavioral health subprogram enables Bachelor of Arts students majoring in psychology to begin work toward the M.P.H. while completing the bachelor's degree. Students admitted to the program may count 12 s.h. of credit toward both the B.A. and M.P.H. degree requirements. Offered by the Graduate College, the College of Liberal Arts and Sciences, and the College of Public Health; see Psychological and Brain Sciences (p. 536) and Master of Public Health Program (p. 1173) in the Catalog.

Joint Bachelor's and Public Health Graduate Degrees
The College of Public Health and various undergraduate programs have developed joint programs in which students pursue the bachelor's degree, either a B.A. or a B.S., and a public health graduate degree, M.A., M.P.H. or M.S., in five years instead of six. Offered by all undergraduate colleges, the Graduate College, and the College of Public Health; see College of Public Health (p. 1143) in the Catalog.

Joint B.A./M.A.T. with Science Education Subprogram
The joint B.A./M.A.T. program with science education subprogram enables Bachelor of Arts students majoring in biology, chemistry, environmental sciences, or physics to begin work toward the M.A.T. while completing the bachelor's degree. Students admitted to the program may count 18 s.h. of credit toward both the B.A. and M.A.T. degree requirements. Offered by the Graduate College, the College of Liberal Arts and Sciences, and the College of Education; see Biology (p. 119), Chemistry (p. 135), Environmental Sciences (p. 278), or Physics and Astronomy (p. 507) and Teaching and Learning (p. 793) in the Catalog.

Joint Au.D./Ph.D.: Speech and Hearing Science
The joint Au.D./Ph.D. program in speech and hearing science is designed for students who would like to practice audiology and hold a faculty position at a university. Students admitted to the program work concurrently toward the Doctor of Audiology and the Doctor of Philosophy; they may count 30 s.h. toward the requirements of both degrees. Offered by the Graduate College and the College of Liberal Arts and Sciences; see Communication Sciences and Disorders (p. 165) in the Catalog.

Joint B.S.: Statistics/M.P.H. with Quantitative Methods Subprogram
The joint B.S. in statistics/M.P.H. program with quantitative methods subprogram enables Bachelor of Science students majoring in statistics to begin work toward the M.P.H. while completing the bachelor's degree. Students admitted to the program may count 12 s.h. of credit toward both the B.S. and M.P.H. degree requirements.
Offered by the Graduate College, the College of Liberal Arts and Sciences, and the College of Public Health; see Statistics and Actuarial Science (p. 613) and Master of Public Health Program (p. 1173) in the Catalog.

**Joint B.S.: Statistics/M.S.:Statistics**
The joint B.S./M.S. program in statistics enables undergraduate students majoring in statistics to begin work toward the M.S. while completing the bachelor’s degree. Students admitted to the program may count 12 s.h. of credit toward both the B.S. and M.S. degree requirements. Offered by the Graduate College and the College of Liberal Arts and Sciences; see Statistics and Actuarial Science (p. 613) in the Catalog.

**Certificate Programs**
Several Graduate College programs offer certificates. For detailed information about each one, see Center for the Book (p. 929), Cognitive Science of Language (p. 933), Digital Public Humanities (p. 957), Informatics (p. 942), Public Health (p. 1151), and Transportation Studies (p. 961).

The Graduate College also participates with other University of Iowa colleges in offering the following graduate certificates.

**Advanced Practice Nursing**
The Certificate in Advanced Practice Nursing is a program for Doctor of Nursing Practice (D.N.P.) students that offers advanced clinical training in five specialty areas: adult/gerontology nurse practitioner, adult/gerontology nurse practitioner-acute care, family nurse practitioner, pediatric nurse practitioner-primary care, pediatric nurse practitioner-acute care and psychiatric/mental health nursing. Students who complete the D.N.P. program and the certificate requirements are qualified to sit for a professional certification exam. See College of Nursing (p. 1110) in the Catalog.

**Aging Studies**
The Aging Studies Program is a multidisciplinary certificate program administered by the College of Liberal Arts and Sciences in cooperation with other University of Iowa colleges. The program is designed to complement graduate degree programs or to serve as a stand-alone nondegree program for students with academic, professional, research, or service career interests in aging. See Aging Studies (p. 34) in the Catalog.

**Agricultural Safety and Health**
The Certificate in Agricultural Safety and Health is a postbaccalaureate program for practicing health care professionals serving rural areas and for health professions students who intend to practice in rural areas. The program is designed to help rural health professionals address safety and health issues in farm settings. See Agricultural Safety and Health (p. 1145) in the Catalog.

**American Indian and Native Studies**
The American Indian and Native Studies Program (AINSP) offers an interdisciplinary certificate program focusing on the histories, cultures, languages, arts, religious traditions, political and social organizations, economies, geographies, literatures, and contemporary legal and political concerns of Native Americans of the United States as well as other indigenous peoples of the Western Hemisphere. See American Indian and Native Studies (p. 37) in the Catalog.

**Biostatistics**
The Certificate in Biostatistics is open to students in University of Iowa graduate degree programs outside biostatistics and to individuals admitted to the Graduate College as nondegree students. The certificate program enables students to add a formal biostatistics emphasis to their degree programs. Students who complete the certificate in conjunction with a graduate degree may count a maximum of 6 s.h. of certificate credit toward their graduate degree. See Biostatistics (p. 1146) in the Catalog.

**Business Analytics**
The Certificate in Business Analytics is open to students in University of Iowa graduate degree programs and to individuals admitted to the Graduate College as nondegree students. The certificate program is designed for working professionals and addresses a growing need to manage and analyze the rapidly increasing amount of data that is available to support business decision making. See Business Analytics (p. 662) in the Catalog.

**College Teaching**
The Certificate in College Teaching complements discipline-oriented graduate programs and prepares students for careers in postsecondary education. The program is open to graduate students working toward a Ph.D. or other terminal graduate degree. See College of Education (p. 735) in the Catalog.

**Emerging Infectious Disease Epidemiology**
The Certificate in Emerging Infectious Disease Epidemiology is a postbaccalaureate program designed to meet the training needs in emerging infectious disease of international public health professionals as well as University of Iowa graduate students. Applicants to the program must hold a bachelor's degree. See Emerging Infectious Disease Epidemiology (p. 1157) in the Catalog.

**Gender, Women's, and Sexuality Studies**
The Certificate in Gender, Women's, and Sexuality Studies is open to students enrolled in graduate degree programs. See Gender, Women's, and Sexuality Studies (p. 303) in the Catalog.

**Multicultural Education and Culturally Competent Practice**
The Certificate in Multicultural Education and Culturally Competent Practice is open to graduate students enrolled in graduate degree programs and to postbaccalaureate nondegree graduate students. The curriculum, which consists of five courses (15 s.h.), begins with an introductory course and ends with a capstone course. See Multicultural Education and Culturally Competent Practice (p. 757) in the Catalog.

**Online Teaching**
The Certificate in Online Teaching is designed to prepare students for the realities of online teaching and to help them expand their career options. The certificate is
open to students in University of Iowa graduate degree programs and to individuals admitted to the Graduate College as nondegree students. See Online Teaching (p. 758) in the Catalog.

Sacred Music
The Certificate in Sacred Music is an interdisciplinary program with courses in sacred music, choral conducting and literature, keyboard, voice, religion, and art and art history. The program is open to students enrolled in a graduate degree program and to nondegree students who have been admitted to the Graduate College and who have consent of the certificate’s faculty advisor. See Music (p. 473) in the Catalog.

Teaching English as a Foreign Language (TEFL)
The TEFL Certificate is intended for overseas English teachers and administrators who are not able to enroll in face-to-face classes at the University of Iowa. The certificate prepares students to seek and retain positions in English language teaching and administration. The program is open to students enrolled in a graduate degree program and to nondegree students who have been admitted to the Graduate College and who have consent of the certificate’s faculty advisor. See Teaching and Learning (p. 793) in the Catalog.

Translational and Clinical Investigation
The Certificate in Translational and Clinical Investigation is designed for clinicians who seek advanced training in clinical methodology and applied patient-oriented research skills. Students in the certificate program must be practicing academic clinicians who have completed doctoral training. See Translational and Clinical Investigation (p. 1187) in the Catalog.

Affiliated Program
The Office of Graduate Inclusion (OGI) is dedicated to providing academic assistance to graduate students from underrepresented populations across graduate programs; to helping build a sustainable practice of inclusion that nourishes and attracts underrepresented graduate students campuswide; and to helping build community through individual and group activities focused on successful academic progress.

OGI’s specific goals are to increase numbers of underrepresented minorities in graduate programs; increase the number of doctoral students among U.S. minorities in graduate programs at Iowa; create a department-centered effort of graduate inclusion; offer support to University of Iowa departments and programs that are interested in building, extending, or sustaining their practices of inclusion; support faculty-based efforts for recruiting top graduate scholars who are members of underrepresented minorities; provide mentoring and support for students throughout their degree programs; and provide information on grant opportunities for departments and programs that are pursuing graduate inclusion.

Research Resources
Many of the University’s diverse research activities are centrally administered by the Office of the Vice President for Research, which has a cooperative relationship with the Graduate College.

Financial Support
Approximately half of the University’s graduate students receive some form of University-administered financial assistance. For eligibility requirements and application procedures, see “Section VII. Graduate Appointments” in the Manual of Rules and Regulations of the Graduate College. The following are the primary sources of assistance.

Teaching and Research Assistantships
Teaching and research assistantships are available in most departments. Assistantship stipends typically range between $18,080 for a half-time academic-year appointment and $22,090 for a half-time fiscal-year appointment; assistants also are eligible for tuition scholarships. Assistants (one-quarter-time or more) pay resident tuition rates for fee purposes.

Iowa Arts Fellowships
Iowa Arts Fellowships are for University of Iowa graduate students entering M.F.A. programs. Typical stipends are $18,500 for the academic year, with all tuition and 25% of mandatory fees paid, plus a health insurance allowance, for one year (the remaining years of support must be provided by the appointing program). There are no departmental service obligations while holding the first-year fellowship.

Iowa Performance Fellowships
Iowa Performance Fellowships are for first-year D.M.A. candidates in a performance area of music. Recipients are nominated by the School of Music. Awards include academic-year fellowships ($17,500 for year one, $8,750 for years two and three), summer fellowships ($2,000 for years one and two), and tuition and 25% of mandatory fees paid (fellow is responsible for the remainder of fees). The School of Music provides a one-quarter-time research assistantship in years two and three.

Graduate College Iowa Recruitment Fellowships
Iowa Recruitment Fellowships program enhances departmental recruitment packages by offering the most accomplished new doctoral students a stipend supplement ($2,000 per year) for up to five years and fellowship support for up to four summer terms ($4,000 per summer). Tuition scholarships are to be paid during the academic years (fall, spring) by the appointing unit, while the Graduate College provides up to 2 s.h. of tuition and benefits for the summer terms. Recipients are nominated by their department.

Graduate College Summer Fellowships
Graduate College Summer Fellowships are for advanced doctoral students who have completed their comprehensive exams, are working to complete their dissertations, and do not otherwise have funding for the summer session. Awards provide a summer stipend of $4,000 and provide up to 2 s.h. of tuition. Awardees must enroll for the six-week, eight-week, or twelve-week summer session. Students enrolled in the four-week summer session are not eligible to receive the fellowship.
T. Anne Cleary International Research Fellowships
The T. Anne Cleary International Research Fellowships are for doctoral students who have completed all presubmission requirements, including the comprehensive examination, and who will use the fellowship for dissertation research outside North America. The awards may vary from $1,500 to $5,000 and are meant to supplement other research funds. Doctoral students in any discipline may apply. Past recipients of the Cleary fellowship and Doctor of Musical Arts students who choose the D.M.A. essay option are not eligible.

Ballard and Seashore Dissertation-Year Fellowships
Ballard and Seashore Dissertation-Year Fellowships are one semester fellowships for doctoral students in the humanities, social sciences, biomedical and life sciences, and physical, mathematical and engineering science disciplines who have completed all doctoral degree requirements except their dissertation. Recipients are nominated by their departments. Fellowships provide $10,000 for the semester plus tuition and 25% of mandatory fees paid for up to 2 s.h. and a health insurance allowance.

Post-Comprehensive Research Awards
The Post-Comprehensive Research Awards program provides an opportunity for advanced doctoral students to benefit from protected and supported time to pursue their scholarly research activities. The award is intended to recognize students with distinguished academic achievement during their early graduate training. These achievements should be evident from a combination of outstanding academic performance in course work, as well as early scholarly research activities. Students who have held teaching assistantships in the previous two semesters will have priority. Awardees will receive a stipend in the amount of $9,040. The Graduate College also supports up to 2 s.h. of tuition, 25% of the mandatory fees, and a health insurance allowance. Recipients are nominated by their department.

Scholarships
Scholarships provide up to full tuition.

GRADUATE STUDENT TRAVEL AWARDS
Graduate student travel awards provide reimbursement for travel by students who present research and scholarship results to professional conferences. Awards are competitive across disciplines and vary from $200 to $400. Funds are administered by the Graduate Student Senate and the Graduate College.

Other Sources
For other sources of financial support, contact the Office of Student Financial Aid.

Many departments offer additional support through traineeships, part-time employment in research, or part-time teaching appointments. The Office of the Vice President for Research maintains a library of information on public and private agencies that provide funds for research and graduate study. Much material has been collected concerning awards for overseas study.

Graduate Student Senate
The Graduate Student Senate is the University graduate student body representative organization. Representatives are elected annually from each University department that has a graduate degree program. The senate's primary purpose is to serve the interests of the graduate student body in matters affecting its welfare. The senate advises the dean of the Graduate College on matters pertaining to the college.

Manual of Rules and Regulations of the Graduate College
The current edition of the Manual of Rules and Regulations of the Graduate College is published on the Graduate College web site.

Courses
Most Graduate College courses are offered by the college's programs and schools. They are listed and described in the corresponding General Catalog sections; see the links under "Index: Academic Programs" toward the top of this page.

The college also offers the following nondepartmental courses.

GRAD:0006 SROP Scholars Program 0 s.h.
GRAD:3030 SROP/McNair Scholars Academic Development for Juniors
Training and mentorship opportunities to enhance academic and professional success; academic preparation (including the GRE) and exploration of doctoral graduate training programs; seminars, interactive workshops, readings, written assignments. Requirements: UI SROP/McNair Scholar and junior standing.

GRAD:3040 SROP/McNair Scholars Academic Development for Seniors
Training and mentorship opportunities to enhance academic and professional success; academic preparation and professional development to navigate the graduate admissions process (including preparation of personal statements, selection of referees, mock interviews); seminars, interactive workshops, readings, written assignments. Requirements: UI SROP/McNair Scholar and senior standing.

GRAD:6000 PhD Postcomprehensive Registration 1 s.h.
GRAD:6001 Master's Final Registration 1 s.h. Requirements: master's degree candidate.

GRAD:6002 Doctoral Continuous Registration 1 s.h. Requirements: doctoral degree candidate who has passed comprehensive examinations.

GRAD:6003 Doctoral Final Registration 1 s.h. Requirements: doctoral degree candidate in final session of enrollment.
GRAD:6140 Introduction to Multicultural Education and Culturally Competent Practice
Introduction to foundations of multicultural education and cultural competence; numerous equal access movements that impact professional practice in education, social work, counseling, and the allied helping professions mobilized in the U.S. during the 20th century; issues of diversity and equity that continue to fuel current policy debates and impact professional practice; roots of equal access movements from Brown v. Board of Education to the present; social, political, and/or economic contexts for equal access policies concerning race/ethnicity, class, language, gender, ability, and sexual orientation.

GRAD:6217 Seminar in College Teaching 1-3 s.h.
Preparation for college teaching; for graduate students planning to teach. Same as PSQF:6217.

GRAD:6300 Writing for Learned Journals 1-4 s.h.
Help for graduate students in bringing written work to publishable form; analysis of target journals’ audiences and interests; submission, response to criticism.

GRAD:6313 Digital Rhetorics 3 s.h.
Current discourse (utopic, dystopic, other strands) about the Internet as it shapes and is shaped by competing forces.

GRAD:6800 CIC Scholar arr.

GRAD:6801 Regents Exchange Program arr.

GRAD:6997 Graduate/Professional Transfer arr.

GRAD:6998 Undergraduate Transfer arr.

GRAD:6999 Resident/Fellow/Post-Doctoral 0 s.h.

GRAD:7270 Principles of Scholarly Integrity 0-1 s.h.
Training in the responsible conduct of research and scholarly activities; discussion of case studies—student/mentor responsibilities in the pursuit of scholarly work (ownership, authorship, plagiarism/falsification/fabrication of data); student/mentor relationships and intellectual dialogues (communication, collaboration, grievance management); student responsibilities to the institution/scholarly community/society (intellectual property, conflict of interest, fiscal responsibilities, human/animal subjects). Requirements: enrollment in Graduate College degree-seeking program. Recommendations: first-year graduate standing (Ph.D., M.S./M.A.) and involvement in conducting NSF/NIH-funded research.

GRAD:7280 Obermann Center for Advanced Studies Special Topics Seminars 1-3 s.h.
Active participation and engagement in a major program, such as the annual Humanities Symposium; readings on interdisciplinary histories, contexts, and theoretical perspectives that frame featured events; work of artists, scholars, and researchers participating in the program. Requirements: admission to Graduate College.

GRAD:7285 Obermann Center Professional Development Seminar 1 s.h.
Active participation and engagement in a major program, such as the annual Humanities Symposium; readings on interdisciplinary histories, contexts, and theoretical perspectives that frame featured events; work of artists, scholars, and researchers participating in the program. Requirements: admission to Graduate College and completion of Obermann Graduate Institute on Engagement and the Academy.

GRAD:7290 Obermann Center Theory and Practice in Digital Public Humanities 3 s.h.
Overview of theories and use of technology to preserve, deploy, visualize, map, and analyze concepts; discussions with practicing digital public scholars; assignments tailored to student research; final group project; introductory course in public digital humanities certificate. Same as SLIS:7290.

GRAD:7385 Teaching and Learning in Higher Education 3 s.h.
Current theoretical and empirical literature on teaching and learning in higher education; focus on development of effective teaching practice. Same as PSQF:7385, EPLS:7385, EDTL:7385, RCE:7385.

GRAD:7400 Practicum in College Teaching arr.
Supervised college teaching experience; teaching in collaboration with faculty, observation and critiques of teaching, participation in course planning and evaluation procedures; ethical and multicultural considerations. Requirements: admission to the graduate certificate in college teaching program.

GRAD:7601 Postdoctoral Research Scholar 0 s.h.
Requirements: postdoctoral standing.

GRAD:7602 Postdoctoral Research Fellow 0 s.h.
Requirements: postdoctoral standing.

GRAD:7604 Principles of Scholarly Integrity 0 s.h.
Training in the responsible conduct of research and scholarly activities; discussion of case studies—student/mentor responsibilities for the pursuit of scholarly work (ownership, authorship, plagiarism/falsification/fabrication of data); student/mentor relationships and intellectual dialogues (communication, collaboration, grievance management); student responsibilities to the institution/scholarly community/society (intellectual property, conflict of interest, fiscal responsibilities, human/animal subjects). Requirements: postdoctoral standing. Recommendations: first-year postdoctoral scholar/fellow (FP01/FP02) conducting NSF/NIH-funded research.

GRAD:7614 Principles of Scholarly Integrity 0 s.h.
Training in the responsible conduct of research (RCR) and scholarly activities; discussion of case studies—student/mentor responsibilities in the pursuit of scholarly work (ownership; authorship; plagiarism/falsification/fabrication of data); student/mentor relationships and intellectual dialogues (communication, collaboration, grievance management); student responsibilities to the institution/scholarly community/society (intellectual property, conflict of interest, fiscal responsibilities, human/animal subjects); may meet the RCR training obligation of the K award. Requirements: junior faculty member holding a federally-funded NIH individual K award.

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Biosciences (p. 926)
Center for the Book (p. 929)
Cognitive Science of Language (p. 933)
College Teaching (p. 935)
Genetics (p. 936)
Human Toxicology (p. 938)
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Neuroscience
Public Digital Humanities (p. 957)
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Applied Mathematical and Computational Sciences

Chair

- Weimin Han (Mathematics)

Graduate degree: Ph.D. in applied mathematical and computational sciences
Faculty: http://www.amcs.uiowa.edu/faculty
Web site: http://www.amcs.uiowa.edu/

Applied mathematical scientists formulate scientific concepts and problems in mathematical terms; solve the resulting mathematical problems using analytical and computational methods; and discuss, interpret, and evaluate the solutions. They explore areas of mathematical application and develop mathematical theories in new areas.

Career opportunities for applied mathematicians include positions in colleges, universities, governmental laboratories, business, industry, and consulting firms.

Graduate Program of Study

- Doctor of Philosophy in applied mathematical and computational sciences

Doctor of Philosophy

The Doctor of Philosophy program in applied mathematical and computational sciences requires a minimum of 72 s.h. of graduate credit. The Ph.D. program is autonomous, broadly based, and interdisciplinary. It is designed to help students achieve a command of theoretical and applied mathematics and obtain basic knowledge in another area (engineering, medicine, or one of the behavioral, biological, physical, or social sciences).

The program is flexible; students can concentrate on applied mathematics, such as differential equations and numerical analysis, or on other applicable techniques in mathematics. Scientific computing is an important part of applied mathematics, so it is often a part of student training and dissertation research.

Prospective students should have a desire to apply a mathematical science (mathematics or statistics) to relevant problems in another area.

COURSE OF STUDY

Faculty members help each student plan a course of study that is consistent with the student's background, interests, and goals.

These individual programs are designed to help students develop expertise in methods of applied mathematics and build a good foundation in related topics of theoretical mathematics. The individual programs also provide sufficient knowledge in an outside area to enable students to use mathematical techniques in that area.

Students can arrange their study plans to earn a master's degree from another department after they complete part of their plan. Students find suitable thesis problems and supervisors with the help of the faculty.

QUALIFYING AND COMPREHENSIVE EXAMINATIONS

Students take a qualifying examination over three of the four core course sequences required for the Ph.D. (analysis, differential equations, numerical analysis, and topology). They also take a comprehensive examination over the chosen outside area.

One program objective is to have each student's dissertation research include many of the activities of an applied mathematical scientist. For example, a student might formulate a model, do a quantitative analysis of the model, and interpret the results.

Admission

Applicants must meet the admission requirements of the Graduate College; see the Manual of Rules and Regulations of the Graduate College. To be prepared for graduate-level course work in mathematics and an additional area, applicants should have a bachelor's or master's degree with a strong mathematics component and some background in the additional area.

Applications for fall admission are due on January 15. For application forms and more information about the academic program, contact the chair of the Applied Mathematical and Computational Sciences Program.

Financial Support

Fellowships and research and teaching assistantships are available to qualified applicants. Fellowship support is available during summers. Applications for financial support should be submitted at the same time as applications for admission.

Courses


Current research by faculty, students, guests.

AMCS:7990 Reading and Research arr.
Biosciences

Director
• Daniel Tranel

Faculty: http://www.medicine.uiowa.edu/edTraining_Affiliations_apr.aspx?appointment=biosciences
Web site: http://www.medicine.uiowa.edu/biosciences/

Graduate Program of Study

The Biosciences Program is not accepting any students at this time; the program is being reorganized.

Participation in the Biosciences Program leads to a Ph.D. degree in a biosciences discipline. The program provides graduate students the freedom to explore research in any of 17 University of Iowa biosciences research departments and programs: the Departments of Anatomy and Cell Biology (p. 1015), Biochemistry (p. 1021), Biology (p. 119), Biomedical Engineering (p. 851), Chemistry (p. 135), Communication Sciences and Disorders (p. 165), Microbiology (p. 1050), Molecular Physiology and Biophysics (p. 1055), Pharmacology (p. 1071), Physical Therapy and Rehabilitation Science (p. 1074), Physics and Astronomy (p. 507); and the Free Radical and Radiation Biology (p. 1040), Genetics (p. 936), Human Toxicology (p. 938), Immunology (p. 940), Molecular and Cellular Biology (p. 953), and Neuroscience (p. 955) Programs.

Biosciences students enjoy the flexibility of investigating several disciplines through research rotations in the laboratories of Biosciences Program faculty members. Following completion of their first year in the program, students select a research laboratory and program affiliation and decide on a thesis project that will lead to a Ph.D.

Semester hour requirements for the doctorate vary by program, but all Ph.D. degrees at Iowa require at least 72 s.h. of graduate credit. For detailed information on Graduate College policies, see the Manual of Rules and Regulations of the Graduate College.

Curriculum

Students spend their first two semesters in the Biosciences Program. The curriculum provides them with an integrated core foundation on modern molecular and cellular biology while giving them flexibility to accommodate their individual interests.

Instead of offering one semester-long core course, the program offers at least six content modules. In consultation with their advisors, students choose modules at five-week intervals, tailoring their individual study plans to meet their interests. Some modules are intended to be taken as a series; they cover fundamentals of cell structure, intracellular trafficking, signal transduction, and protein structure. Other modules are stand-alone units on more specialized topics, such as biostatistics.

Early in the second semester, Biosciences Program students talk with prospective mentors about thesis projects and laboratory openings for the following summer. In March they submit their choice of the graduate program they wish to join and the faculty member they wish to have as a mentor.

The Biosciences web site contains typical study plans for students interested in specific graduate programs.

The student's choice of program determines his or her curriculum for subsequent years.

Students in the Biosciences Program are not required to teach, but most of the graduate programs they enter will require that they take on teaching responsibilities.

During their Biosciences Program year, students are advised on course selection, research rotations, and registration by a faculty member closely related to the student's research and academic interests. As research rotations are assigned, the faculty advisor works in consultation with the student's rotation advisors until the end of the first year.

Students provide a short oral presentation following each research rotation to an audience of their primary advisor, research advisor(s), and other biosciences students. Rotation advisors provide rotation reports, and rotations are evaluated by the student's primary advisor. The student's primary advisor also confers with the student on course grades, subsequent rotations, and the student's selection of a department or program and lab for thesis research.

All biosciences students take BISC:5265 Biosciences Critical Thinking and Communication, which dovetails with research rotations and seminar series offered by the University's biosciences research departments and programs. The course involves weekly discussions of selected papers and oral and written presentations tied to the student's research rotations.

Each student's overall progress is monitored by his or her primary advisor, rotation advisor(s), and program director, who meet at the end of each semester to review the student's work. At the end of the second semester, the primary advisor, in cooperation with the rotation advisor(s), makes a recommendation to the Biosciences Program director as to whether or not the student should continue in the Ph.D. program. University guidelines, such as maintaining a cumulative g.p.a. of 3.00 or higher, are considered, along with performance in rotations.

The Biosciences Program's office coordinates students' transfers to their chosen graduate programs. Matriculation is conditional upon satisfactory progress and successful completion of the second semester.

Once a student enters his or her chosen graduate program, it is that program's responsibility to advise the student, evaluate his or her academic performance, and assign the student a thesis mentor and laboratory.

Most participating departments and programs require that students take a comprehensive exam at the end of the second year and no later than the third year. Following successful completion of the exam, students advance to Ph.D. candidacy.

REQUIRED COURSES

All Biosciences Program students must complete the following course work. Students earn at least 12 s.h. each semester.

Fall Semester

BISC:5265 Biosciences Critical Thinking and Communication 2 s.h.
BISC:5302 Biosciences Research (8-week research rotations) arr.
GRAD:7270 Principles of Scholarly Integrity 0-1 s.h.
Electives

Spring Semester
BISC:5265 Biosciences Critical Thinking and Communication 2 s.h.
BISC:5302 Biosciences Research (8-week research rotations) arr.
Electives

Admission

The program accepts students with a variety of backgrounds in the biological and physical sciences. Entering students must hold a baccalaureate degree from an accredited college or university and should have completed courses in biology, chemistry, physics, and calculus consistent with requirements for a baccalaureate degree in the sciences. An undergraduate g.p.a. of at least 3.00 is required.

Applicants must submit their scores on the Graduate Record Exam (GRE) General Test. Applicants whose first language is not English must score at least 600 (paper-based) or 100 (Internet-based) on the Test of English as a Foreign Language (TOEFL).

Other indicators of academic accomplishments, such as research experience and letters of recommendation, are considered.

Information about graduate training and application materials are available from the Biosciences Program office.

Applicants must meet the admission requirements of the Graduate College; see the Manual of Rules and Regulations of the Graduate College.

Financial Support

Graduate students receive stipend and tuition support from the University of Iowa and other sources. Students promoted to the second year in the program receive support from their graduate departments and programs. The Biosciences Program also helps some students apply for competitive national awards for outstanding academic and research achievement.

Facilities

The Carver College of Medicine provides state-of-the-art facilities for students, researchers, and instructors. The Medical Education and Research Facility, completed in 2002, provides 220,000 square feet of modern laboratories, lecture halls, clinical examination rooms, and study and meeting space for students. The Carver Biomedical Research building opened in 2005. The 135,000 square-foot building is devoted to research, with five floors of specialized laboratories and new technology. In addition to its new buildings, the college offers recently renovated laboratories and classrooms.

The health sciences campus provides parking, food service, and enjoyable outdoor common areas and pedestrian routes. Most of the University's health sciences colleges and clinical facilities are located there.

The basic science and clinical departments of the Carver College of Medicine are housed primarily in the Bowen Science Building, Carver Biomedical Research Building, Eckstein Medical Research Building, Medical Education and Research Facility, Medical Laboratories, and University of Iowa Hospitals and Clinics. Nearby are the Hardin Library for the Health Sciences and the Iowa City Veterans Affairs Medical Center.

The Departments of Anatomy and Cell Biology, Biochemistry, Microbiology, Molecular Physiology and Biophysics, and Pharmacology are housed in the Bowen Science Building. Laboratories of clinical departments are located primarily in the Medical Laboratories and the Medical Research Center.

The Eckstein Medical Research Building houses major core facilities for microscopy, image analysis, flow cytometry, protein structure, and monoclonal antibody production, as well as research laboratories for basic investigators with interdisciplinary approaches to cancer, molecular biology, genetics, and immunology. The geographic proximity of these facilities promotes interchange among clinical and basic science faculty members and students and maximizes use of the University's extensive core facilities for biomedical research.

Integral to the University's research environment are the Carver Nonprofit Genetic Testing Laboratory, Center for Auditory Regeneration and Deafness, Center for Bioinformatics and Computational Biology, Center for Emerging Infectious Diseases, Center for Functional Genomics of Hypertension, Center for Gene Therapy, Center for Research in the Implementation of Innovative Strategies in Practice, Center on Aging, Craniofacial Center Collaboratory, Cystic Fibrosis Research Center, Holden Comprehensive Cancer Center, Huntington's Disease Society of America Center of Excellence, Institute for Clinical and Translational Science, Iowa Cardiovascular Center, Iowa Comprehensive Lung Imaging Center, Helen C. Levitt Center for Viral Pathogenesis, George M. O'Brien Kidney Research Center, Specialized Center for Research in Osteoarthritis, and the Senator Paul D. Wellstone Muscular Dystrophy Cooperative Research Center.

In addition to the University's extensive facilities for research support, the Carver College of Medicine and the College of Liberal Arts and Sciences operate a variety of research support facilities. Tissue culture, autoclaving, purified water, darkrooms, counters, and a variety of general-use equipment and services are available on a shared basis.

Courses

BISC:5201 Fundamentals of Gene Expression 1 s.h.
DNA and RNA structure, nuclear organization, DNA replication, RNA production and processing, small RNAs, RNAi, and genetic and epigenetic regulation; didactic and small group sessions, discussion of primary research publications.

BISC:5203 Fundamentals of Dynamic Cell Processes 1 s.h.
Overview of actin, microtubules, motors, intermediate filaments, cell-cell junctions, G-coupled signaling, wnt-jak/stat signaling, ion channels, cell cycle, stem cells.

BISC:5204 Biostatistics for Biomedical Research 1 s.h.
Application of statistical techniques to biological data analysis; normal distribution, sampling distribution of the mean, variance, nonparametric methods, linear regression, power, and sample size. Same as BIOS:5050.

**BISC:5205 Practical Bioinformatics** 1 s.h.
Formal instruction on the use and application of bioinformatics for bench scientists; bioinformatics, resources, genome annotations, sequence analysis, comparative genomics, expression analysis, and systems biology. Requirements: biostatistics.

**BISC:5206 Biophysical Chemistry Module 1** 1 s.h.
Overview of principles of protein structure, stability, folding, and dynamics; brief treatment of structural biology approaches to help students become critical users of models derived from X-ray crystallography and NMR; taken alone or as part of BIOC:5241. Requirements: introductory course in biochemistry. Same as BIOC:5243.

**BISC:5265 Biosciences Critical Thinking and Communication** 2 s.h.
Selected papers and oral and written presentations tied to students' research rotations; introductory seminar. Same as MPB:5342, BIOL:5270.

**BISC:5302 Biosciences Research** arr.
Research experience in the lab of a biosciences program faculty member.
Center for the Book

**Director**
- Timothy Barrett (Interdisciplinary Programs/Library and Information Science)

**Graduate degree:** M.F.A. in book arts  
**Graduate certificate:** book studies/book arts and technologies  
**Faculty:** [http://book.grad.uiowa.edu/faculty-and-staff/](http://book.grad.uiowa.edu/faculty-and-staff/)  
**Web site:** [http://book.grad.uiowa.edu](http://book.grad.uiowa.edu)

The University of Iowa Center for the Book represents a community of faculty, staff, students, and local book specialists with interests in all facets of book production, distribution, and use. Some members of the center actively research the history and circulation of the book, examining the role of books in cultural and historical processes. They also look at how changes in book production affect the way books are viewed as artifacts. Specialists in book arts and technologies study the history and technique of book crafts, including letterpress printing, typography, calligraphy, papermaking, and bookbinding. Others engage in the conservation or production of books, including artists’ books and literary fine press publications.

The center offers classes; sponsors lectures, seminars, and workshops; and encourages the exchange of ideas among individuals with interests in the book. A wide range of perspectives on the book as an aesthetic, cultural, and historical artifact is provided by associated faculty, staff, and graduate students in the Schools of Art and Art History and Library and Information Science; the Departments of History and English; the Comparative Literature Program; University of Iowa Libraries; the Creative Writing Program (Iowa Writers' Workshop); and other areas. This interdisciplinary membership and the center’s facilities combine to provide an exceptional environment for studying the history of the book, its evolution, and its future.

Graduate students may earn a master’s degree or a graduate certificate through the center. Undergraduate students may add dimension to their majors in English, art, journalism, history, and other disciplines by taking Center for the Book courses in book crafts and book studies. They also may include an emphasis on book arts or on cultural and historical aspects of the book in the interdepartmental studies major.

Graduate Programs of Study

- Master of Fine Arts in book arts  
- Certificate in Book Studies/Book Arts and Technologies

Graduate study of the book is interdisciplinary. It focuses on book arts as hands-on practice as well as a historical and cultural phenomenon. Its principal objectives are to provide scholarly and aesthetic contexts for the study of book history, arts, and technologies; and to offer a structured program in book-related disciplines for graduate students with a serious interest in book studies.

**Master of Fine Arts**

The Master of Fine Arts program in book arts requires a minimum of 60 s.h. of graduate credit, including a thesis.

Students select one of several emphasis areas: artist book work, bookbinding, calligraphy, digital book work, papermaking, or printing. After completing core courses, they work with a faculty advisor to design an individualized curriculum in their specialty area. The degree culminates with the successful completion of a thesis.

The program requires the following course work.

<table>
<thead>
<tr>
<th>Course Type</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Core courses, a material analysis course</td>
<td>33 s.h.</td>
</tr>
<tr>
<td>Electives in the student’s emphasis area</td>
<td>18 s.h.</td>
</tr>
<tr>
<td>Additional electives</td>
<td>6 s.h.</td>
</tr>
<tr>
<td>Thesis (maximum of 6 s.h.)</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

**Certificate**

The Certificate in Book Studies/Book Arts and Technologies requires 18 s.h. of graduate credit and is designed to be completed in one year. The program is open to students who are enrolled in a graduate degree program at the University of Iowa as well as to students enrolled in the Graduate College with nondegree status.

The program requires the following course work.

<table>
<thead>
<tr>
<th>Course Type</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>A studio practice course</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>A scholarly inquiry course</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>Electives</td>
<td>12 s.h.</td>
</tr>
</tbody>
</table>

**Admission**

Applicants must meet the admission requirements of the Graduate College; see Manual of Rules and Regulations of the Graduate College. Visit Admissions on the Center for the Book web site for more information.

**Courses**

**UICB:2100 Creative Writing for Book Arts**  
Creative writing in context of book arts; text and image, typography, visual sequence, graphic narrative; zines, chapbooks, broadsides, and artist’s books.  
UICB:2100 Creative Writing for Book Arts

**UICB:2110 Introduction to Book Arts**  
Topics related to artist books, hand bookbinding, letterpress printing, papermaking, and lettering arts. Same as BKAT:2110.

**UICB:3100 Papermaking**  
History, fundamental techniques of Western and Eastern hand papermaking; projects in traditional sheet forming, basic paper chemistry, paper coloring. Offered spring semesters. Same as BKAT:3100.

**UICB:3140 Literature and the Book**  
English majors may apply this course to the following area and/or period requirement. AREA: Literary Theory and Interdisciplinary Studies. PERIOD: Early Literatures through 17th-Century, 18th/19th-Century Literature, or 20th/21st-Century Literature. Same as ENGL:3140.


**UICB:3142 Topics in Book History** 3 s.h.
Authorship, publishing, and so forth within specific historical and cultural contexts. English majors may apply this course to the following area and/or period requirement. AREA: Literary Theory and Interdisciplinary Studies. PERIOD: Early Literatures Through 17th Century, 18th/19th-Century Literature, or 20th/21st-Century Literature. Same as ENGL:3142.

**UICB:3280 Elements of Book Art** 3 s.h.
Overview of book art process and techniques for nonmajors; introduction to traditional bookbinding skills, nontraditional book structures, and content development for artist books. Same as BKAT:3280.

**UICB:3310 Typography** 4 s.h.
Introduction to letterform and typographic fundamentals; designing with type—attention to composition, hierarchy, historical practice. Corequisites: DSGN:2110, if not taken as a prerequisite. Same as DSGN:3120.

**UICB:3380 Elements of Letterpress** 3 s.h.
Introduction to letterpress printing; metal type, relief printing, page layout, and basic typography; basic use of Vandercook Proof Press; experimentation with diverse letterpress techniques; for non-book art majors. Same as BKAT:3380.

**UICB:3400 Calligraphy: Foundational Hands** 3 s.h.
Fundamental calligraphic skills using Roman majuscule, Humanistic minuscule, Italic; basic layout and color theory incorporated into letter practice. Same as BKAT:3400.

**UICB:3900 Special Project for Undergraduates** arr.
Independent study.

**UICB:4010 Studies in Book Technologies** arr.
Topics such as book design, printing, paper arts, letterforms, typography.

**UICB:4100 Paperworks** 3 s.h.
Conceptual and methodological approaches to 2-D and 3-D paper works; creation of works that couple unique properties of paper-pulp medium with personal visual ideas and clarity of intent; contemporary issues in paper pulp, medium’s relationship to larger art and craft contexts. Same as BKAT:4100.

**UICB:4150 Introduction to Book Studies** 3 s.h.
Theory and practice of book studies; meanings of word and image in the book format; comparative study of other media, applied study of the codex as physical artifact. English majors may apply this course to the following area and/or period requirement. AREA: Literary Theory and Interdisciplinary Studies. PERIOD: Early Literatures Through 17th Century, or 18th/19th-Century Literature, or 20th/21st-Century Literature. Same as ENGL:4150, SLIS:4150.

**UICB:4205 Bookbinding I: Materials and Techniques** 3 s.h.
Hands-on introduction to materials and techniques commonly used in bookbinding. Same as BKAT:4205.

**UICB:4210 Boxes and Enclosures** 3 s.h.
Hands-on techniques for a variety of book enclosures; appropriateness, aesthetic issues concerning box design; Japanese wraparound case, drop-spine box, hinged and lidded boxes, slipcase; technical skill development. Prerequisites: UICB:4205. Same as BKAT:4210.

**UICB:4220 Moveable/Sculptural Books** 3 s.h.
Varied formats for moveable and/or sculptural books; history; readings, hands-on model making. Same as BKAT:4220.

**UICB:4230 Pop-Up Book Structures** 3 s.h.
Hands-on exploration of varied aspects of paper engineering for bookmaking; historical and modern models studied and executed. Prerequisites: UICB:4205. Same as BKAT:4230.

**UICB:4270 Bookbinding II** 3 s.h.
Builds on skills acquired in UICB:4205; projects to complete six bindings based on historical and contemporary models; sewing styles, board attachments, endband types; nonadhesive and case-bound structures, varied materials and binding styles, their effects on structure, aesthetic considerations, further development of solid binding skills; historical development of particular binding practices. Prerequisites: UICB:4205. Same as BKAT:4270.

**UICB:4280 Artists’ Books** 3 s.h.
Exploration of the book as a form for artistic expression; emphasis on conceptual development; relationship between content, form, and structure; how a book’s structure and design can enhance and integrate part of the work’s meaning. Prerequisites: UICB:4205 or BKAT:4205. Same as BKAT:4280.

**UICB:4290 Historical Book Structures** 3 s.h.
Historical development of book structures examined through surviving examples, construction of historical models. Prerequisites: UICB:4205 or BKAT:4205.

**UICB:4300 Letterpress I** 3 s.h.
Mechanics of letterpress printing, typography, and design as applied to hand set metal type and edition printing; printing on a Vandercook proof press; introduction to photopolymer plates and methods of illustration related to edition printing, historical aspects of printing technology, typecasting, type classification; role of letterpress in modern private press and contemporary artist books. Same as ARTS:4300.

**UICB:4305 Computer Graphics for Book Arts** 3 s.h.
Introduction to Adobe Creative Suite graphic design software (InDesign, Illustrator, Photoshop); emphasis on using software for book arts applications; typesetting and pagination of multipage documents; methods for combining text and image; tools and techniques for digital illustration; creation and manipulation of digital images; preparations of digital files for desktop or letterpress printing and services bureau output.
UICB:4340 Digital Design for Artists' Books 3 s.h.
Introduction to concepts, techniques, and technologies used to design and produce artists' books with personal computers and graphic design software. Same as ARTS:4340.

UICB:4380 Letterpress II 3 s.h.
Builds on skills acquired in UICB:4300; issues of book design and production related to letterpress printing; exploration of hand-set metal, digital typesetting, printing from photopolymer plates, and imagemaking; press mechanics and operation; students produce a letterpress printed chapbook or artist book; publication philosophies, manuscript acquisition, and topics specific to literary fine press and artist books; historical and contemporary context for literary fine press publications and artist book work. Prerequisites: UICB:4300.

UICB:4390 Book and Publication Design 3 s.h.
Students plan, design, and produce a book using Adobe Creative Suite; page layout software, typography, page layout and design, book formatting, handling of image files, preparation of materials for print and other contemporary book media; history of book design, book design in contemporary publishing; visit to University of Iowa Libraries Special Collections. Prerequisites: UICB:4300 or DSGN:3120. Same as ARTS:4390.

UICB:4400 History of Western Letterforms 3 s.h.
History of Western letterforms, with focus on tools, materials, techniques; the major hands, their place in history, their influence on modern times; creation of letterforms using appropriate tools; hands-on approach with emphasis on understanding rather than mastery. Same as BKAT:4400.

UICB:4415 Calligraphy: Italic and Script Hands 3 s.h.
Hands-on instruction in italic and pressure pen scripts; historical relationships, effects on modern letterforms.

UICB:4420 Calligraphy: Blackletter Hands 3 s.h.
Development of proficiency in various hands, from vertical Textura to florily gothic cursive; blackletter's historical connections with other disciplines.

UICB:4490 Studies in Letter Arts 3 s.h.
Special topics and advanced projects in calligraphy and letter arts. Prerequisites: UICB:3400 or UICB:4400. Same as BKAT:4490.

UICB:4910 The Book in the Middle Ages 3 s.h.
Relation of text, decoration, function, creators, and audience in different genres of medieval manuscripts books 400-1500 A.D. Same as HIST:4910, SLIS:4910.

UICB:4920 The Transition from Manuscript to Print 3 s.h.
Western manuscripts and books 1200-1600; changes in production and distribution methods and in how texts were used, in cultural context. Same as SLIS:4920, HIST:4920.

UICB:4930 Topics in Material Analysis 3 s.h.
Analysis and description of physical book artifacts and their component parts (parchment, paper, bookbinding) and allied specialties (the lettering arts, printing and illustration techniques); reading, writing, presentations. Same as HIST:4430.

UICB:5110 Islamic/Asian Papermaking History and Technique 3 s.h.
History, technique, and aesthetics of traditional Islamic and Asian hand papermaking. Same as BKAT:5110.

UICB:5130 Western Papermaking History and Technique 3 s.h.
History and technique of traditional European hand papermaking and related aesthetics; students gain confidence in pursuing independent production of handmade papers or undertaking related research in their own particular areas of interest; fiber preparation, sheet forming, and drying/finishing methods; concurrent readings and discussions of related history and aesthetics; special projects selected by student with instructor approval. Same as BKAT:5120.

UICB:5160 Studies in Papermaking arr.
Topics in the history and technique of papermaking.

UICB:5170 Advanced Papermaking Production 3 s.h.
Independent Western- or Japanese-style projects undertaken at UICB Research and Production Paper Facility at Oakdale Campus under faculty guidance; plan, implement, and evaluate professional scale production runs using full-scale equipment. Prerequisites: UICB:5110 or UICB:5130 or BKAT:5110 or BKAT:5120. Same as BKAT:5170.

UICB:5180 Advanced Projects in Paper 3 s.h.
Advanced independent projects undertaken in a classroom setting; collaborative group discussions to plan, implement, troubleshoot, and evaluate student projects. Prerequisites: UICB:5110 or UICB:5130 or BKAT:5110 or BKAT:5120. Same as BKAT:5180.

UICB:5210 Bookbinding III 3 s.h.
Bookbinding structures based on historical and contemporary models; differences in various binding practices, how these differences affect function, why the styles developed; experience choosing appropriate structures for particular uses; emphasis on fine tuning skills and techniques required for advanced binding practices; sewn endbands, rounding and backing, sewing on varied supports, board attachments, and covering methods. Requirements: for UICB:5210 — UICB:4205 and UICB:4270; for BKAT:5210 — BKAT:4205 or BKAT:4270 or UICB:4205 or UICB:4270. Same as BKAT:5210.

UICB:5220 Book Conservation 3 s.h.
Practical methods, materials assessment, conservation history and evolution. Prerequisites: UICB:4270.

UICB:5260 Studies in Bookbinding 3 s.h.
Topics related to hand bookbinding. Same as BKAT:5260.
UICB:5280 Bookbinding IV 3 s.h.
Advanced studies in bookbinding; fine binding styles, leather paring and tooling, advanced finishing techniques, refining skills; continued look at differences in regional binding practices, how these differences affect function, and why particular styles developed. Prerequisites: UICB:5210.

UICB:5330 Letterpress III: Imagemaking arr.
Builds on skills acquired in UICB:4300 and UICB:4380; advanced work in fine press book design and image-making processes for fine press printing. Prerequisites: UICB:4380. Same as ARTS:5330.

UICB:5340 Letterpress III: The Handprinted Book 3 s.h.
Exploration of problems in hand-printing books—choice of manuscript, editing, design, typesetting, proofreading, printing and binding; histories of printing and of the book, emphasis on 20th- and 21st-century book design and literature. Prerequisites: UICB:4380. Same as ARTS:5340.

UICB:5370 Studies in Printing 1-3 s.h.
Development of individual book projects and production of one substantial project or several smaller ones; focus on acquiring or creating a text and/or other content; project development; range of print techniques available in letterpress printing; issues involved in producing editioned artist books or fine press work; opportunity to expand on existing printing; classroom setting used to augment work sessions with in-progress critiques, readings, and visits to special collections.

UICB:5380 Letterpress IV: Advanced Projects 3 s.h.
Development of individual book projects and production of one substantial project or several smaller ones; focus on acquiring or creating a text and/or other content; project development; range of print techniques available in letterpress printing; issues involved in producing editioned artist books or fine press work; opportunity to expand on existing printing; classroom setting used to augment work sessions with in-progress critiques, readings, and visits to special collections. Prerequisites: UICB:5330 or UICB:5340.

UICB:5510 Book Studies Workshop 1 s.h.
Discussion of issues central to book studies; workshop approach to current projects.

UICB:5520 Studies in Book History 3 s.h.
Topics related to production, distribution, and consumption of books through history and into the future. Same as SLIS:5520.

UICB:5530 Topics in Preservation/Conservation 3 s.h.
Care, conservation, and preservation of cultural heritage artifacts; readings, discussion, hands-on sessions. Same as SLIS:5530.

UICB:5550 Special Project for Graduate Students arr.
Independent study.

UICB:5600 History of Readers and Reading 3 s.h.
Cultural nature of reading practices in historic and contemporary contexts of reading; reading communities; dimensions of gender, age, class, religion, race, ethnicity; examples of recent scholarship; use of primary resources; seminar. Same as SLIS:5600.

UICB:6100 Book Studies Proseminar 1-3 s.h.

UICB:6270 Electronic Publishing 3 s.h.
Modes and methods for building electronic journals, books, thematic collections; new genres for publishing, including blogs, wikis, comics, short stories on the web; social, political, and economic forces that shape electronic publishing; XML-based project. Prerequisites: SLIS:5020. Same as SLIS:6270.

UICB:6370 Topics in Book Studies 3 s.h.
Topics relevant to book studies and special collections. Same as SLIS:6370.

UICB:6500 Final Project arr.
Project for graduate certificate.

UICB:6510 Book Art Seminar: History, Practice, and Critique 3 s.h.
Art-historical introduction to book arts (printing, bookbinding, papermaking and paperworks, artist bookwork, lettering arts, literary fine press and fine press artist books); influences and origins, contemporary practice, critical considerations; locating field through lenses of fine art, craft, and book history; weekly readings, observational analyses, hands-on exercises; archival research in the University of Iowa Libraries Special Collections; final research, analytical, and/or critical project.

UICB:6520 Graduate Book Arts Workshop 3 s.h.
Development of art work and studio practice; readings and research in contemporary theory and practice; analysis of visual language; integration of creative activities and critical thinking in student’s own art practice and analysis of contemporary work in book arts; group and individual critiques, studio assignments, presentations, discussions.

UICB:6540 M.F.A. Thesis Hours arr.
Cognitive Science of Language

Coordinator
• Robert M. McMurray (Psychological and Brain Sciences)

Graduate certificate: cognitive science of language
Faculty: http://cogsci.lang.grad.uiowa.edu/people
Web site: http://cogsci.lang.grad.uiowa.edu/

The scientific study of language is larger than any one field, due in part to the broad diversity in forms and uses of language. Iowa’s Cognitive Science of Language Program uses an interdisciplinary approach to the study of language, helping to prepare language scientists who are conversant in multiple domains.

Graduate Program of Study
• Certificate in Cognitive Science of Language

The Department of Psychological and Brain Sciences (p. 536) (College of Liberal Arts and Sciences) is the administrative home of the Cognitive Science of Language Program; the certificate is conferred by the Graduate College.

Certificate

The Certificate in Cognitive Science of Language requires a minimum of 12-15 s.h. of graduate credit. Designed to complement doctoral study, the certificate program is open to University of Iowa Ph.D. students in linguistics, neuroscience, psychology, and speech and hearing science. Ph.D. students in other disciplines may petition to be permitted to earn the certificate. Students must complete a formal application to enter the certificate program; they should contact the program’s coordinator before they apply.

The certificate program ensures that students have training in interdisciplinary approaches to the study of language along with a strong theoretical grounding in their Ph.D. discipline. Each certificate student works with his or her Ph.D. advisor and the certificate program’s coordinator to develop an individual plan of study that complements the student’s degree program and career interests. In order to be granted the Certificate in Cognitive Science of Language, students must complete all of the requirements of their Ph.D. program as well as all of the certificate requirements.

All certificate students must participate in the cognitive science of language proseminar, a two-semester (6 s.h.) survey course on the five major disciplines within the language sciences—psychology, formal linguistics, neuroscience, communication disorders, and computational approaches. They also must complete three approved courses chosen from the lists below, and they must include a faculty member in the cognitive sciences of language on their Ph.D. comprehensive and dissertation exam committees. Students may enroll in the proseminar and three additional courses before or concurrently with other courses in their programs.

The Certificate in Cognitive Science of Language requires the following course work.

**PROSEMINAR**
All certificate students complete the following two survey courses.
- PSY:6101 Cognitive Science of Language Proseminar I 3 s.h.
- PSY:6102 Cognitive Science of Language Proseminar II 3 s.h.

**DISCIPLINARY COURSES**
Students take a total of three courses chosen from the following lists.

**Communication Sciences and Disorders**
- CSD:3116 Basic Neuroscience for Speech and Hearing 3 s.h.
- CSD:3118 Language Acquisition 1-3 s.h.
- CSD:3122 Speech Production: Anatomy and Physiology 4 s.h.
- CSD:4145 Developmental Language Disorders 3 s.h.
- CSD:4146 Neurogenic Disorders of Language 3 s.h.
- CSD:5206 Language Disorders: Birth to Five Years 3 s.h.
- CSD:5222 Speech and Hearing Anatomy 2 s.h.
- CSD:5224 System and Signal Theory for Speech and Hearing Science 3 s.h.
- CSD:5233 Aphasia 2 s.h.
- CSD:5256 Anatomy and Physiology of Hearing 3-4 s.h.
- CSD:5282 Phonological Development and Disorders 2 s.h.
- CSD:6520 Seminar: M.A. Language 2 s.h.
- CSD:6522 Clinical Speech Physiology 2 s.h.
- CSD:6538 Seminar: Hearing Science 2 s.h.

**Computer Science**
- CS:4460 Introduction to Computational Linguistics 3 s.h.

**Linguistics**
- LING:3030 Child Language-Linguistic Perspectives 3 s.h.
- LING:4090 Practical Phonetics 3 s.h.
- LING:5010 Introduction to Syntax 3 s.h.
- LING:5020 Introduction to Phonology 3 s.h.
- LING:6050 Language Universals Linguistic Typology 3 s.h.
- LING:6080 Generative Second Language Acquisition 3 s.h.
- LING:7090 Seminar: Problems in Linguistics 2-3 s.h.

The course LING:5010 has a corequisite, LING:5000 Proseminar: Morphosyntax, which does not count toward the certificate.

**Neuroscience**
- NSCI:6240 Topics in Cognitive Neuroscience 3 s.h.

**Psychological and Brain Sciences**
- PSY:3085 Language Development 3 s.h.
- PSY:3670 Language Processes 3 s.h.
- PSY:6450 Processes of Language Acquisition 3 s.h.
- PSY:6490 Dynamic Systems and Development 3 s.h.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSY:7020</td>
<td>Seminar: Cognitive Neuroscience</td>
<td>0-2 s.h.</td>
</tr>
<tr>
<td>PSY:7430</td>
<td>Seminar: Cognitive Development</td>
<td>0-3 s.h.</td>
</tr>
<tr>
<td>PSY:7610</td>
<td>Seminar: Cognitive Psychology</td>
<td>2 s.h.</td>
</tr>
<tr>
<td></td>
<td><strong>Second Language Acquisition</strong></td>
<td></td>
</tr>
<tr>
<td>SLA:6901</td>
<td>Second Language Acquisition Research and Theory</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>SLA:6902</td>
<td>Second Language Acquisition Research and Theory II</td>
<td>3 s.h.</td>
</tr>
<tr>
<td></td>
<td><strong>World Languages, Literatures, and Cultures</strong></td>
<td></td>
</tr>
<tr>
<td>SPAN:4100</td>
<td>Introduction to Spanish Phonology</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>SPAN:4150</td>
<td>Introduction to Spanish Syntax</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>SPAN:6110</td>
<td>Spanish Phonology</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>SPAN:6120</td>
<td>Spanish Syntax</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>SPAN:6150</td>
<td>Topics in Spanish Language Acquisition</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>
College Teaching

Director
- Mitchell J. Kelly (Psychological and Quantitative Foundations)

Graduate certificate: college teaching
Web site: http://www.education.uiowa.edu/services/ogte/certificate/default.aspx

The certificate program in college teaching provides course work and supervised experiences that prepare graduate students for careers in postsecondary education.

Graduate Program of Study
- Certificate in College Teaching

The Certificate in College Teaching is administered by the College of Education and granted by the Graduate College.

Certificate
The Certificate in College Teaching requires a minimum of 12 s.h. of graduate credit. The certificate program is open to all University of Iowa Graduate College students enrolled in a Ph.D. or other terminal degree program.

Previous teaching experience does not count toward certificate requirements.

Students apply to the certificate program on the Office of Graduate Teaching Excellence (OGTE) web site, under Graduate Certificate in College Teaching.

Courses selected from the Categories below can be completed in any order at any time.

The Certificate in College Teaching requires the following course work.

**CATEGORY 1**
Category 1 course work provides an overview of basic instructional issues and methods in college teaching. The work requires students to engage in discipline-specific thinking as they consider their own teaching situations.

At least 6 s.h. chosen from these.

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>EALL:7387 Introduction to Online Post-Secondary Course Design and Facilitation</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>GRAD:6217/PSQF:6217 Seminar in College Teaching</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>PSQF:6205 Design of Instruction</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>SOC:7010 Teaching Sociology</td>
<td>2-3 s.h.</td>
</tr>
</tbody>
</table>

**CATEGORY 2**
Category 2 requires students to teach for at least two semesters under the guidance of two different professors. Prior or current experience as a teaching assistant does not count toward this requirement.

Students enroll in one of the following courses twice, with each enrollment supervised by a different faculty member. Students earn a total of 3 s.h. for the two enrollments.

They can enroll in two practicums with two different professors in the same semester or they can complete practicum experiences in separate semesters.

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDTL:7380 Practicum in College Teaching</td>
<td>1-3 s.h.</td>
</tr>
<tr>
<td>EPLS:7380 Practicum in College Teaching</td>
<td>1-3 s.h.</td>
</tr>
<tr>
<td>GRAD:7400 Practicum in College Teaching (faculty member must be outside the College of Education)</td>
<td>1-3 s.h.</td>
</tr>
<tr>
<td>PSQF:7380 Practicum in College Teaching</td>
<td>1-3 s.h.</td>
</tr>
<tr>
<td>RCE:7380 Practicum in College Teaching</td>
<td>1-3 s.h.</td>
</tr>
</tbody>
</table>

**CATEGORY 3**
For Category 3, students develop a full portfolio that demonstrates their skills and competencies in teaching, research, and service. The portfolio requires sample syllabi, a statement of teaching philosophy, samples of assignments and student work, and reflective essays on critical issues in teaching in higher education.

A committee of three faculty members, including the student's faculty advisor, reviews the portfolio and provides advice to the student about its content and quality. The student's faculty advisor is responsible for evaluating the portfolio and recommending that the certificate be awarded.

Category 3 requires the following course.

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>EALL:7475 Ph.D. ePortfolio in College Teaching</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>
Genetics

Chair
• Daniel Eberl (Biology)

Graduate degree: Ph.D. in genetics
Faculty: http://genetics.grad.uiowa.edu/faculty
Web site: http://genetics.grad.uiowa.edu

Graduate Program of Study
• Doctor of Philosophy in genetics

Doctor of Philosophy
The Doctor of Philosophy program in genetics requires a minimum of 72 s.h. of graduate credit. The Ph.D. program is designed to promote collaborative investigation and intellectual interaction among students and faculty participants affiliated with several different departments.

Students who enroll in the program are encouraged to obtain a broad background in genetics, including molecular, population, and human genetics. Within this context, course requirements are flexible enough to permit students to tailor their formal course work to their individual needs.

Students have the option to declare a Ph.D. emphasis in computational genetics.

All students enrolled in the program are required to take the following courses.

All of these:
- GENE:6150 Genetic Analysis of Biological Systems 3 s.h.
- GENE:6200 Special Topics in Genetics (seminar) 1 s.h.
- GENE:6234 Basic Biostatistical Methods with Genetics Applications 1 s.h.
- BISC:5201 Fundamentals of Gene Expression 1 s.h.
- BISC:5203 Fundamentals of Dynamic Cell Processes 1 s.h.

One of these:
- GENE:7191 Human Molecular Genetics 3 s.h.
- BIOL:3172 Evolution 4 s.h.
- BIOL:4333 Genes and Development 3 s.h.

All of these:
- GRAD:7270 Principles of Scholarly Integrity 1 s.h.

Elective course work in molecular and microbial genetics, cell and development genetics, human genetics, or computational genetics 8 s.h.

Seminars courses approved by the program 5 s.h.

Even more important than formal course work is the opportunity to do significant research in genetics. Research interests of the participating faculty include virtually all areas of genetics, ranging from bacteriophage genetics to human medical genetics. In each area of genetics, there is a group of faculty members who have closely related interests.

The University is also strong in several related disciplines, including microbial physiology, enzymology, virology, protein biochemistry, computational genetics, and developmental and cell biology, all of which contribute significantly to the overall training program.

In addition to completing research and course work, students must pass a comprehensive examination, usually at the end of their second year in the program.

Joint M.D./Ph.D.

Students may work toward the Doctor of Medicine degree and a Ph.D. in genetics in a joint degree program offered by the Carver College of Medicine and the Graduate College. See Medical Scientist Training (p. 1048) Program (Carver College of Medicine) in the Catalog.

Ph.D. and Dental Scientist Training Program

Ph.D. students in genetics who have earned a D.D.S. degree may be candidates for advanced training programs in dentistry. For information, contact the College of Dentistry.

Admission

Prospective doctoral students in genetics should have a strong undergraduate background in science, including courses in general genetics, organic chemistry, biochemistry, introductory physics, and mathematics, as well as a strong commitment to genetic research and teaching. Students can make up deficiencies in a particular area during their first year of graduate study.

Applicants must meet the admission requirements of the Graduate College; see the Manual of Rules and Regulations of the Graduate College.

Admission to the program is based on assessment of an applicants' undergraduate academic records, performance on the Graduate Record Examination (GRE) General Test, and letters of recommendation. Admission requirements are not rigid. Most students working toward a Ph.D. in genetics at the University of Iowa have an undergraduate g.p.a. above 3.50, and a combined verbal and quantitative score above 310 on the GRE General Test (or 1250 using the old GRE scoring system). Students with lower grade-point averages or GRE scores may be admitted, depending on prior research experience and other indications of academic potential.

Students generally begin graduate work in the fall semester.

Financial Support

All genetics graduate students receive a financial stipend of $26,500 plus tuition for academic year 2015-16.

Financial support comes from training grants, research assistantships, teaching assistantships, scholarships, individual research grants, or other departmental or college funds. All students are required to do some teaching as part of their development as future scientists and faculty members.

Associated Courses

Credit earned in the following courses may be counted toward the Ph.D. in genetics. Not all courses are offered every year.
GENE:5173 Computational Genomics 3 s.h.
Introduction to computational methods used in genome analysis and functional genomics; biological sequence analysis, sequence database search, microarray data analysis, biological network analysis; in-depth coverage of principal genome science challenges and recent solutions. Prerequisites: BME:5320 and CS:3110 and (BIOS:4120 or STAT:3510). Same as BIOL:5320, BME:5330, ECE:5220.

GENE:6150 Genetic Analysis of Biological Systems 3 s.h.
Genetic techniques and approaches for analysis of biological processes; comparison of strengths, weaknesses of a variety of experimental systems.

GENE:6170 Bioinformatics 4 s.h.
Overview of bioinformatics topics, including access to sequence data, pairwise and multiple sequence alignment algorithms, molecular phylogeny, microarray data analysis, protein analysis, proteomics and protein structure analysis; emphasis on each topic includes biological motivation, computational approach (practical and theoretical), and interpretation of output. Prerequisites: BIOL:2512 or BIOC:3120. Recommendations: grade of B+ or higher in BIOL:2512 or BIOC:3120, or graduate standing. Same as BIOL:4213.

GENE:6200 Special Topics in Genetics 1 s.h.
Current research in a selected field of genetics; different topic each year. Companion to a genetics seminar series. Same as ACB:6200.

GENE:6234 Basic Biostatistical Methods with Genetics Applications 1 s.h.
Introduction to terminology, fundamental concepts, and methods of biostatistics as applied to genetic research; genetic investigation examples used to illustrate statistical approaches.

GENE:6280 Directed Study in Genetics arr.

GENE:7191 Human Molecular Genetics 3 s.h.
Molecular genetic approaches to human disease; the human genome project, linkage analysis, candidate gene screening, special features of inbred populations, triplet repeat expansions, mitochondrial genetics, genetics of complex traits. Requirements: fundamental genetics and molecular biology.

GENE:7301 Graduate Research in Genetics arr.
Human Toxicology

Director
• Larry W. Robertson (Occupational and Environmental Health)

Associate director
• Peter Thorne (Occupational and Environmental Health/Engineering)

Director of graduate studies
• Gabriele Ludewig (Occupational and Environmental Health)

Graduate degrees: M.S. in human toxicology; Ph.D. in human toxicology
Faculty: http://toxicology.grad.uiowa.edu/faculty
Web site: http://toxicology.grad.uiowa.edu/

Toxicology is the study of how biological, chemical, physical, and radiological agents affect living organisms and the ecosystem, and how to prevent or lessen the adverse effects of those agents. The Human Toxicology Program prepares toxicologists to identify and assess environmental exposures, identify mechanisms by which toxicants affect homeostasis or induce disease, identify interventions to prevent adverse effects, and estimate acceptable levels of exposure to protect public health.

The program is interdisciplinary, involving the Graduate College, the Carver College of Medicine, and the Colleges of Engineering, Liberal Arts and Sciences, Pharmacy, and Public Health.

The Human Toxicology Program is supported by the Iowa Superfund Research Program. Human toxicology faculty members are supported by the Environmental Health Sciences Research Center, a National Institute of Environmental Health Center of Excellence.

Graduate Programs of Study
• Master of Science in human toxicology
• Doctor of Philosophy in human toxicology

Master of Science

The Master of Science program in human toxicology requires a minimum of 39 s.h. of graduate credit and a thesis is required. The program is designed for students who wish to pursue a master’s degree as a second degree or through part-time study, particularly those who perform toxicologists’ functions in their jobs and who need additional training.

Entering students should have backgrounds in the biological, engineering, and physical sciences and should have completed courses in introductory chemistry and biology, and organic chemistry.

After entering the program, each student works with his or her assigned mentor to choose an advisory committee, which meets at least once a semester to help the student explore his or her research interests. The committee also provides consultation on course work and research activities and serves as the committee for the final examination (thesis defense).

The Human Toxicology Program is flexible. Students work with their advisory committees to plan a course of study tailored to their individual interests and goals within the field of toxicology.

All M.S. students must successfully complete the following course work as part of their course of study.

A first course in toxicology—one of these:

- OEH:5710 Environmental Toxicology 3 s.h.
- PHAR:5544 Pharmaceutical and Chemical Toxicology 3 s.h.

Advanced toxicology:

- OEH:6720 Advanced Toxicology 4 s.h.

Scholarly integrity:

- GRAD:7270 Principles of Scholarly Integrity 0-1 s.h.

Research seminar—students must take the course each semester they are enrolled in the human toxicology graduate program:

- TOX:7180 Toxicology Research Seminar 0-1 s.h.

Upon successful completion of all requirements, including the thesis and its oral defense, students are awarded a Master of Science.

Doctor of Philosophy

The Doctor of Philosophy program in human toxicology requires a minimum of 72 s.h. of graduate credit. The program is designed for students with backgrounds in the biological, engineering, and physical sciences. Entering students should have solid training in science, including courses in introductory chemistry and biology, and organic chemistry; knowledge of biochemistry and molecular biology is also useful. Students may remedy deficiencies by taking appropriate courses during their first year of graduate study.

Students begin the program with three two-month rotations in the laboratories of participating faculty members, in order to identify a mentor. After the first year, the mentor assumes financial responsibility for the student. With advice from his or her mentor, each student chooses an advisory committee, which meets at least once a semester to help the student explore his or her research interests. The committee also provides consultation on course work and research activities and serves as the committee for the comprehensive examination and the final examination (dissertation defense).

The Human Toxicology Program is flexible. Students work with their advisory committees to plan a course of study tailored to their individual interests and goals within the field of toxicology.

All Ph.D. students must successfully complete the following course work as part of their course of study.

A first course in toxicology—one of these:

- OEH:5710 Environmental Toxicology 3 s.h.
- PHAR:5544 Pharmaceutical and Chemical Toxicology 3 s.h.

Advanced toxicology:

- OEH:6720 Advanced Toxicology 4 s.h.

Scholarly integrity—students must complete the course within their first two years of graduate study.
GRAD:7270 Principles of Scholarly Integrity 0-1 s.h.
Research seminar—students must take the course each semester they are enrolled in the human toxicology graduate program:
TOX:7180 Toxicology Research Seminar 0-1 s.h.
After successfully completing the comprehensive examination, usually at the end of the second year of graduate study, the student advances to Ph.D. candidacy. The student devotes all of his or her time to dissertation research and writing. Upon successful completion of all requirements, including the dissertation and its oral defense, the student is awarded a Doctor of Philosophy.

**Admission**
Prospective students may apply to the program via a centralized application system; see Admission on the Human Toxicology Program web site.
Completed applications should be submitted by March 1; applications submitted after that date are reviewed as they are received and are considered for any remaining openings.
Applicants must meet the admission requirements of the Graduate College; see the Manual of Rules and Regulations of the Graduate College.

**Financial Support**
Doctoral students in human toxicology receive stipends and tuition support from University of Iowa sources, including internal fellowships and graduate research assistantships, and from non-University sources, such as training grants from the National Institutes of Health.

**Facilities**
Training is conducted primarily in laboratories and teaching facilities of the departments and colleges of Human Toxicology Program faculty members. These are among the best-equipped laboratories on campus. Together with the University's central research facilities, they provide access to the most up-to-date research equipment and expertise.

**Associated Courses**
For course descriptions and prerequisite information, see the course listings in the College of Pharmacy (p. 1128) and Department of Occupational and Environmental Health (p. 1180) sections of the Catalog.
OEH:5710 Environmental Toxicology 3 s.h.
OEH:6720 Advanced Toxicology 4 s.h.
PHAR:5544 Pharmaceutical and Chemical Toxicology 3 s.h.

**Courses**
**TOX:7171 Special Problems in Toxicology** arr.
Didactic material that may include tutorial, seminar, or faculty-directed research work; or a special topic.
**TOX:7173 Toxicology Journal Club** arr.
Current topics in toxicology literature.
Immunology

**Director**
- Steven Varga (Microbiology/Pathology)

**Graduate degree:** Ph.D. in immunology

**Faculty:** [http://immuno.grad.uiowa.edu/faculty](http://immuno.grad.uiowa.edu/faculty)

**Web site:** [http://immuno.grad.uiowa.edu](http://immuno.grad.uiowa.edu)

The Immunology Program provides interdisciplinary training in the concepts and methodologies of basic and applied immunology. Faculty members are involved in a variety of research projects dealing with the immune system at all levels—structural, functional, cellular, biochemical, and molecular. Students take course work in immunology and related disciplines and are involved directly in laboratory research throughout their study.

**Graduate Program of Study**
- Doctor of Philosophy in immunology

**Doctor of Philosophy**

The Doctor of Philosophy program in immunology requires a minimum of 72 s.h. of graduate credit. The program is flexible, accommodating students with a wide range of backgrounds in course work as well as practical experience in the biological and physical sciences. Entering students generally are expected to have strong backgrounds in biology, chemistry, biochemistry, microbiology, genetics, and mathematics. An introductory course in immunology is desirable. Deficiencies in specific areas often can be remedied through appropriate course work taken during the first year of graduate studies.

The curriculum consists of a sequence of required and elective courses that provide training in the conceptual and methodological aspects of immunology. The program offers an opportunity for study in a variety of fields that interface with immunology.

The Ph.D. in immunology requires the following course work.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>IMMU:6201</td>
<td>Graduate Immunology</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>IMMU:6211</td>
<td>Immunology Seminar</td>
<td>1 s.h.</td>
</tr>
<tr>
<td>IMMU:6241</td>
<td>Writing a Scientific Proposal</td>
<td>1 s.h.</td>
</tr>
<tr>
<td>IMMU:7221</td>
<td>Advanced Topics in Immunology</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>BISC:5204</td>
<td>Biostatistics for Biomedical Research</td>
<td>1 s.h.</td>
</tr>
<tr>
<td>GRAD:7270</td>
<td>Principles of Scholarly Integrity</td>
<td>0-1 s.h.</td>
</tr>
<tr>
<td>MICR:6247</td>
<td>Graduate Survey of Immunology</td>
<td>4 s.h.</td>
</tr>
</tbody>
</table>

Students complete 3 s.h. of the following.

**Fundamentals:**
- BIOC:7251 Introduction to Protein Structures | 1 s.h. |
- BISC:5201 Fundamentals of Gene Expression (recommended) | 1 s.h. |
- BISC:5203 Fundamentals of Dynamic Cell Processes (recommended) | 1 s.h. |

**Molecular biology:**
- MCB:6215 Transcription and Multi-Functional Regulation by RNA | 1 s.h. |
- MCB:6217 Epigenetics, Cancer, and Mouse Models of Disease | 1 s.h. |
- MCB:6240 Inflammatory Cell Signaling and Targeted Cancer Therapy | 1 s.h. |

**Cell biology:**
- MCB:6220 Mechanisms of Cellular Organization | 3 s.h. |
- MCB:6225 Growth Factor Receptor Signaling | 1 s.h. |
- MCB:6226 Cell Cycle Control | 1 s.h. |
- MCB:6227 Cell Fate Decisions | 1 s.h. |

After successfully completing the comprehensive examination, usually by the end of the second year of graduate study, students advance to candidacy for the Ph.D. They devote their time to research and writing their dissertation. Upon successful completion of all requirements, including the dissertation and its oral defense, students are awarded a Ph.D. in immunology.

**Admission**

For information regarding admission and application procedures, contact the Immunology Program or visit its web site.

Applicants must meet the admission requirements of the Graduate College; see the Manual of Rules and Regulations of the Graduate College.

**Financial Support**

All students in the Immunology Program receive stipends and tuition support, which comes from a variety of sources, including training grants from the National Institutes of Health, University of Iowa fellowships and graduate research assistantships, and individual faculty research grants.

**Facilities**

Training is conducted in laboratories and teaching facilities of the Carver College of Medicine Stead Family Department of Pediatrics and the Departments of Internal Medicine, Otolaryngology—Head and Neck Surgery, Pathology, Microbiology, Pharmacology, and Urology; and the College of Public Health Department of Epidemiology. Faculty laboratories and central research core facilities provide students with access to state-of-the-art research equipment.

**Courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>IMMU:2040</td>
<td>Summer Undergraduate IDGP Research</td>
<td>0 s.h.</td>
</tr>
<tr>
<td>IMMU:6201</td>
<td>Graduate Immunology</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

Ontogeny, activation, and function of T lymphocytes and B lymphocytes; innate immune effector mechanisms; major histocompatibility complex; antigen presentation; thymocyte positive and negative selection; signaling of T lymphocytes, B lymphocytes; emphasis on experimental methods for analysis of these processes. Requirements: for IMMU:6201 — college biology, general chemistry, and introductory immunology courses; for MICR:6201 — courses in college biology, genetics, general chemistry, and introductory immunology. Recommendations: for IMMU:6201 — courses in biochemistry and genetics; for MICR:6201 — biochemistry course. Same as MICR:6201.
IMMU:6211 Immunology Seminar 1 s.h.
Requirements: immunology graduate standing.

IMMU:6231 Research in Immunology arr.
Laboratory research. Requirements: immunology graduate standing.

IMMU:6241 Writing a Scientific Proposal 1 s.h.
How to write a scientific proposal. Prerequisites: IMMU:6201. Requirements: enrollment in immunology graduate program.

IMMU:6247 Graduate Survey of Immunology 4 s.h.
Important principles and key concepts in immunology; overview of innate and adaptive immune systems and their functions at cellular and molecular levels; learning enhanced by case-based, small-group discussion and written assignment. Same as MICR:6247.

IMMU:7217 Integrated Topics in Infectious Diseases 1 s.h.
Clinical cases used to raise questions in host-microbe interactions; case/scientific exposés followed by related journal club discussions at next class session. Same as MICR:7217.

IMMU:7221 Advanced Topics in Immunology 3 s.h.
In-depth analysis of selected areas. Prerequisites: IMMU:6201 or MICR:6201. Same as MICR:7207.
Informatics

Director
• John C. Keller (Graduate College)

Graduate degrees: M.S. in informatics; Ph.D. in informatics.

Graduate certificate: informatics

Faculty: http://informatics.grad.uiowa.edu/people

Web site: http://informatics.grad.uiowa.edu

The field of informatics springs from the intersection of computational disciplines related to the humanities, the arts, and the biological, health, natural, and social sciences. As the rapid development of information technology transforms the world of human pursuits, informatics offers ways to solve new problems and to examine existing problems from new perspectives.

The Informatics Program provides graduate students the opportunity to study informatics in the broadest sense. The program is interdisciplinary, involving the Graduate College, the Carver College of Medicine, the Tippie College of Business, and the Colleges of Dentistry, Engineering, Liberal Arts and Sciences, Nursing, Pharmacy, and Public Health.

Graduate Programs of Study

• Master of Science in informatics
• Doctor of Philosophy in informatics
• Certificate in Informatics

The Master of Science and Doctor of Philosophy degrees in informatics, and the Certificate in Informatics, are offered in four subprograms: bioinformatics and computational biology, geoinformatics, health informatics, and information science.

Bioinformatics and computational biology are on the cutting edge intersecting basic life and biomedical science with high-performance computing and networking, mathematics, statistics, and engineering. They are strongly influenced and directed by the ongoing development of high-throughput data collection assays such as DNA sequencing, gene expression, and proteomics.

Geoinformatics provides methods and technologies needed to measure, store, analyze, manage, and visualize information about phenomena occurring on or near the earth’s surface. It is an increasingly essential technology for understanding and managing the complex world.

Health informatics uses contemporary information technologies to improve the storage, organization, retrieval, and evaluation of health information in order to support clinical, clinical research, and public health applications.

Information science addresses the broad spectrum of data, information, and knowledge in seeking to identify and address recurring themes of representation, manipulation, retrieval, and comprehension. It draws from a diverse range of disciplines.

Master of Science

The Master of Science program in informatics requires a minimum of 30-32 s.h. of graduate credit, depending on the student’s choice of subprogram: the bioinformatics and computational biology subprogram requires a minimum of 30 s.h. of credit; the geoinformatics, health informatics, and information science subprograms require a minimum of 32 s.h. of credit. Students working toward a Doctor of Philosophy in informatics may be granted a Master of Science upon completion of the M.S. requirements.

Credit required for the M.S. includes 9-12 s.h. in foundations of informatics and at least 9 s.h. in disciplinary applications of informatics.

Students select an advisor from their subprogram’s affiliated faculty members. In consultation with their advisors, students prepare a study plan, which is reviewed at least once a year. A final master’s degree examination, either oral or written, is required.

For more information about the Master of Science requirements, see Academic Programs on the Informatics Program web site.

Doctor of Philosophy

The Doctor of Philosophy program in informatics requires a minimum of 72 s.h. of graduate credit. It is offered in four subprograms: bioinformatics and computational biology, geoinformatics, health informatics, and information science.

The 72 s.h. required for the Ph.D. includes 9-12 s.h. in foundations of informatics and at least 9 s.h. in disciplinary applications of informatics. Other course requirements are outlined in the curriculum specific to each subprogram.

Students select an advisor from their subprogram’s affiliated faculty members. In consultation with their advisors, students prepare a study plan, which is reviewed by their mentors and curricular advisory committees at least once a year. Ph.D. students must pass a comprehensive examination at or near completion of their course work requirements. The exam may be written, oral, or both, depending on the structure of the student’s subprogram or the decision of the student’s committee.

A student who does not already hold an M.S. in informatics from the University of Iowa and who has passed the Ph.D. comprehensive examination may be granted an M.S. degree in informatics without taking the final master’s degree exam, upon recommendation by the informatics program.

Upon successful completion of all requirements, including the dissertation and its oral defense, students are awarded a Doctor of Philosophy.

For more information about the Doctor of Philosophy requirements, see Academic Programs on the Informatics Program web site.

Certificate

The Certificate in Informatics requires a minimum of 18-21 s.h. of graduate credit, depending on the student’s choice of subprogram: the subprograms in bioinformatics and computational biology, health informatics, and information science require a minimum of 18 s.h.; the geoinformatics subprogram requires a minimum of 21 s.h. The certificate program is designed for students enrolled in University of Iowa graduate degree programs who wish to study informatics as a complement to their degree program and for nondegree students who are interested in increasing their knowledge of informatics.
All subprograms require a minimum of 9-12 s.h. in the foundations of informatics. In addition, the subprograms in bioinformatics and computational biology, health informatics, and information science require at least 9 s.h. in disciplinary applications of informatics; and the geoinformatics subprogram requires at least 12 s.h. in disciplinary applications of informatics.

For more information about certificate requirements, see Academic Programs on the Informatics Program web site.

Admission

Applicants to the M.S., Ph.D., or certificate program should apply to the degree subprogram of their choice; the subprograms make independent admission decisions. Certificate program applicants may be degree or nondegree graduate students. Applicants who are enrolled in a University of Iowa graduate degree program must be in good academic standing in their program.

Applicants must meet the admission requirements of the Graduate College; see the Manual of Rules and Regulations of the Graduate College. They also must meet the admission requirements of the informatics subprogram they want to enter; see Prospective Students/Admission Information on the program’s web site.

Courses

**IGPI:3110 Introduction to Informatics** 3 s.h.
Fundamentals of computer science: algorithms, complexity, relational databases, systems concepts, programming in Python. Requirements: CS:1110 or graduate standing. Same as CS:3110.

**IGPI:5010 Research for Master's Thesis** arr.
Requirements: admission to M.S. program.

**IGPI:5015 Independent Study** arr.

**IGPI:5200 Health Informatics I** 3 s.h.
Technological tools that support health care administration, management, and decision making. Requirements: graduate standing. Same as MED:5300, SLIS:5900, RSNM:3195, HMP:5370, IE:5860.

**IGPI:5210 Health Informatics II** 3 s.h.
Selected health informatics initiatives, including computer-based patient records, physiologic monitoring, networking, imaging, virtual reality; participation in an interdisciplinary project team focused on an informatics innovation; application and research seminars. Same as BME:5252, RSNM:5301, IE:5870.

**IGPI:5220 Principles of Public Health Informatics** 3 s.h.
Systematic applications of information science, computer science, and technology to public health practice, research, and learning; methods of disease surveillance, data collection, analysis, and reporting with health informatics. Offered fall semesters. Same as EPID:5200.

**IGPI:6510 Readings in Informatics** arr.
Topics not covered in other courses; individual study.

**IGPI:6515 Independent Study** arr.

**IGPI:6520 Research for Dissertation** arr.
Requirements: Ph.D. candidacy.
International Writing Program

Director

• Christopher Merrill

Faculty: http://iwp.uiowa.edu/about-iwp/iwp-staff
Web site: http://iwp.uiowa.edu/

The International Writing Program (IWP) conducts a unique fall residency program for established writers from outside the United States and a summer writing program for American and international high school students. During spring semester, IWP offers courses related to the program's general mission, including collaborative distance learning courses for writing students overseas. The program occasionally offers massive open online courses (MOOCs) on literary topics.

Residency Program

Each fall the International Writing Program assembles a community of poets, fiction writers, essayists, playwrights, and journalists for a one-semester residency on campus. Participants range from emerging talents to writers who are among their countries' leading literary figures and writers of world stature. For most of them, their time in the program is their first, or their first extended, stay in the United States.

At the University they live and interact with each other while working on writing and translation projects and participating in public events. Throughout their residency, they present their work in IWP:3191 International Literature Today and IWP:5205 International Translation Workshop and participate as guests in many other courses on campus, including a First-Year Seminar for new University of Iowa undergraduates. They also interact with the public through readings, panel discussions, a film series, and other presentations.

Since 1967 more than 1,400 writers from 130 countries have participated in the program.

International Writing Program participants are supported by the U.S. Department of State, through bilateral agreements with many countries, by grants from cultural institutions and governments abroad, and by private funds. The program does not provide grants for writers.

For more information, contact the International Writing Program or visit its web site.

Summer Program

Between the Lines is an IWP summer program that brings American high school students together with students from Russia and the Arabic-speaking world for two weeks during the first half of July. Between the Lines students explore creative writing and world literature in a multilingual, multicultural environment. They attend a language-specific writing workshop, in which they create and share stories and poetry with their peers. They also participate in a literature seminar conducted in English, where they discuss works written by American and international authors.

International students are nominated by embassies in their home countries. American students who have completed grade 10, 11, or 12 may apply to the program; they must complete an online application and submit samples of their creative work, a statement of purpose, a letter of recommendation from a teacher familiar with their writing, and a current high school transcript. Contact Between the Lines for more information.

Between the Lines is funded by a grant from the U.S. Department of State's Bureau of Educational and Cultural Affairs.

Courses

IWP:1009 Undergraduate Internship
Professional experience for students interested in arts management and international literature. Requirements: undergraduate standing, minimum of 36 s.h. of course work, and consultation with IWP director.

IWP:1040 Writing Across the Atlantic: Guided Creative Writing and Reading
Reading contemporary British prose and poetry and students' own creative writing; instruction by a visiting writer from Great Britain who is participating in the International Writing Program.

IWP:1102 On Campus Independent Study
Independent study arranged in collaboration with instructor.

IWP:1120 International Issues in Creative Nonfiction Writing
Where does the subjective terminate, the objective commence? What are the boundaries between domestic and global, personal and political, fiction and nonfiction? Addressing these questions through academic and creative means; examination of pressing social, environmental, and creative issues; for students unafraid of technology, interested in Skyping, working on message boards, and exchanging multimedia responses with students worldwide; online course linking to institutions of higher learning abroad.

IWP:3152 America in Other Words
Current idea of America in its imaginary form: post-1989 world fiction, poetry, and film in original language, in translation, and via online translation resources. Same as CL:3152.

IWP:3191 International Literature Today
English majors may apply this course to the following area and/or period requirement. AREA: Transnational Literature and Postcolonial Studies. PERIOD: 20th/21st-Century Literature. Same as ENGL:3595, WLLC:3191.

IWP:3201 Writing and Publishing for the Literary Web
Technical aspects of web publishing, including step-by-step instruction on using content management systems (Drupal and Wordpress); specific stylistic and editorial protocols associated with contributing to literary web sites; utilize and navigate a content management system; create a contributor portfolio of online work, including media items, reviews, interviews, and blog posts.
IWP:3210 Comparative Arts 3 s.h.
Cultural and aesthetic issues arising from side-by-side investigation of several art forms, including literature, cinema, painting, music, opera, architecture; periods, schools, styles, and their theories. Same as CL:3210.

IWP:5205 International Translation Workshop 1-3 s.h.
International writers pair with University of Iowa translators to write new works of poetry and fiction in English; second-language fluency not required for international writers. Same as TRNS:5205.

Writing across genres; exploration of modes and voices different from chosen genres (i.e., poets may test the waters of playwriting, nonfiction writers of translation, translators of fiction); rotations by guest faculty; workshop includes students from Writing University M.F.A. programs and International Writing Program residents.

IWP:6635 Crossing Borders Seminar 2-3 s.h.

IWP:7460 Translation Workshop 4 s.h.
Requirements: at least one foreign language. Same as TRNS:7460.
Library and Information Science

Director
David Eichmann

Graduate degree: M.A. in library and information science
Faculty: http://slis.grad.uiowa.edu/people/faculty
Web site: http://slis.grad.uiowa.edu/

Today's age is defined by the intersection of information, technology, and human creativity. In this context, library and information science is dedicated to understanding the nature of information, the interaction between information and communication technologies, the relationship between information and knowledge, the cognitive and affective aspects of knowledge acquisition, and the interface between people and information. It offers new knowledge, technological benefits, and professional expertise for every dimension of human affairs.

Library and information professionals take on many challenges in serving the needs of their constituencies—children and teachers, members of academic communities, employees of profit and nonprofit organizations, and the public at large—constituencies that range from information poor to information rich. They work in the contexts of issues such as information and communication technology, public and private information policy, managerial policy, and regional, national, and international economics.

The School of Library and Information Science prepares professionals to meet these diverse challenges. It offers a graduate-level program of preparation for careers in all types of libraries and information centers, providing students with a strong, well-rounded education in an environment that supports individuals from all segments of a multicultural, multiethnic, and multilingual society. Its curriculum reflects the profession's immediate and long-range needs and prepares students to be leaders in a changing field.

By promoting excellence in research, the school contributes to the base of theoretical and practical knowledge in library and information science and helps develop an understanding of how to meet the varied and changing information needs of individuals and society. It also provides public service through continuing education programs, selective consulting services for library and information centers, and participation in professional organizations.

The school strongly encourages its students, faculty members, and alumni to shape the future of the profession by filling key roles in organizations involved in all aspects of the information cycle.

Graduate Programs of Study

- Master of Arts in library and information science

Graduate students working toward a degree in library and information science may elect to pursue a joint degree program offered by the school in collaboration with the College of Law. The school also offers a joint master's degree/certificate program with the Center for the Book. See "Joint Degrees" and "Joint M.A./Certificate" below.

Students interested in school librarianship may earn a teaching license through a joint program with the College of Education; see "Specializations"/"School Teacher Librarian" below. Library and information science students also may earn the Certificate in Informatics, described below.

The Master of Arts in library and information science has held continuous accreditation from the American Library Association since 1971.

Library science graduates have many options for employment. Alumni hold positions in public, school, special, and academic libraries as well as other information settings. They serve in varied roles, such as information consultant, database manager, library administrator, webmaster, network coordinator, cataloger, children's librarian, school library media specialist, and archivist.

Master of Arts

The Master of Arts in library and information science requires 36 s.h. of graduate credit. A thesis option is available for students who seek additional research experience.

Students pursuing the master's degree gain an understanding of the foundations of the library and information profession, including the history of the field, ethical and philosophical concerns, the information cycle, principles and procedures for dealing with a variety of information carriers, and the theory and practice of strategic management. They examine future trends, with emphasis on cutting-edge technological concerns. They study the discipline's research base, gaining heightened awareness of the synergism between library and information science and other disciplines, as well as the close relationship between research and practice. Finally, students become knowledgeable about the factors that underlie users' information needs and appropriate strategies to satisfy those needs.

The master's degree program is designed to be completed in two years. The School of Library and Information Science strongly recommends that students not register for more than 12 s.h. during fall and spring semesters and 8 s.h. during summer sessions. The program also may be completed through part-time study.

Students may apply a maximum of 12 s.h. of graduate transfer credit in library and information science or related areas toward the degree, subject to the approval of the transfer credit committee. Approval is given course-by-course and is determined by the course's content, currency, and applicability to the student's program.

The curriculum includes a proseminar and three tiers of course work. Tier I consists of four required courses that provide a solid grounding for all successive course work. For Tier II, students select four of the ten courses listed, based on their areas of interest. In Tier III, students may earn up to 12 s.h. in electives chosen with guidance from their advisors. This three-tier arrangement allows each student to concentrate in an area that most closely matches his or her professional goals.

Proseminar

Students must enroll in the proseminar during their first semester, along with two tier I courses.
All of these:

- SLIS:5010 Cultural Foundations (taken in student's first semester) 3 s.h.
- SLIS:5020 Computing Foundations (taken in student's first semester) 3 s.h.
- SLIS:5030 Conceptual Foundations 3 s.h.

One of these:

- SLIS:5041 Contextual Foundations—College and University Libraries 3 s.h.
- SLIS:5042 Contextual Foundations—Public Libraries 3 s.h.
- SLIS:5043 Contextual Foundations—Special Libraries 3 s.h.
- SLIS:5044 Contextual Foundations—School Library Media Administration 3 s.h.

Four of these:

- SLIS:6020 Literacy and Learning 3 s.h.
- SLIS:6100 Database Systems 3 s.h.
- SLIS:6110 Evidence-Based Practice in Library and Information Science 3 s.h.
- SLIS:6130 Community Engagement 3 s.h.
- SLIS:6150 Information Behavior 3 s.h.
- SLIS:6170 Organizational Management 3 s.h.
- SLIS:6330 Archives and Media 3 s.h.
- SLIS:6335 Metadata Theories and Applications 3 s.h.
- SLIS:6345 Stewardship of Information and Collections 3 s.h.
- SLIS:6490 Information Policy and Ethics 3 s.h.

With their advisor's guidance, students choose 12 s.h. in electives from the following courses.

- SLIS:4150 Introduction to Book Studies 3 s.h.
- SLIS:4900 Preservation and Conservation of Collection Materials 3 s.h.
- SLIS:4910 The Book in the Middle Ages 3 s.h.
- SLIS:4920 The Transition from Manuscript to Print 3 s.h.
- SLIS:5200 User Education: Multimedia 3 s.h.
- SLIS:5210 Reference and Information Services 3 s.h.
- SLIS:5220 Resources for Children 3 s.h.
- SLIS:5230 Resources for Young Adults 3 s.h.
- SLIS:5240 Resources for Adults 3 s.h.
- SLIS:5520 Studies in Book History 3 s.h.
- SLIS:5530 Topics in Preservation/Conservation 3 s.h.
- SLIS:5600 History of Readers and Reading 3 s.h.
- SLIS:5900 Health Informatics I 3 s.h.
- SLIS:6140 Digital Environments 3 s.h.
- SLIS:6160 Search and Discovery 3 s.h.
- SLIS:6190 Knowledge Management 3 s.h.
- SLIS:6250 Beginning Cataloging and Classification 3 s.h.
- SLIS:6270 Electronic Publishing 3 s.h.
- SLIS:6320 Topics: Conceptual Structures/Systems 1-3 s.h.
- SLIS:6370 Topics in Book Studies 3 s.h.
- SLIS:6375 Human Computer Interaction 3 s.h.
- SLIS:6380 Analysis of Scholarly Domains 3 s.h.
- SLIS:6430 Nonprofit Organizational Effectiveness I 3 s.h.
- SLIS:6435 Nonprofit Organizational Effectiveness II 3 s.h.
- SLIS:6490 Information Policy and Ethics 3 s.h.
- SLIS:6520 Practicum in Libraries and Information Centers 3 s.h.
- SLIS:6530 School Library Media Practicum 3 s.h.
- SLIS:6570 Independent Study 1-3 s.h.
- SLIS:6580 Thesis 0-3 s.h.
- SLIS:6585 Design, Visualization, and Mapping 3-D Environments 3 s.h.
- SLIS:6590 Digital Humanities Capstone 3 s.h.
- SLIS:7290 Obermann Center Theory and Practice in Digital Public Humanities 3 s.h.

**Specializations**

Students' programs often are designed around particular career goals. Following are examples of possible specializations.

**PUBLIC LIBRARIES**

Public libraries provide informational, educational, and recreational materials and a wide range of services for a diverse clientele. Although public libraries receive the bulk of their funding from local taxes, they also may be organized on a regional or statewide cooperative basis. The variety of uses, services, materials, and organizational structures of public libraries makes this a challenging area of librarianship. Public librarians need to develop skills in analyzing the communities they serve, designing comprehensive marketing plans to meet their needs, implementing the plans in a cost-effective way, and evaluating the success of their efforts.

**ACADEMIC LIBRARIES**

The academic library, whether in a community college, a four-year college, or a university, provides information services in support of the parent institution's teaching, research, and public service missions. These services include instruction in the use of the library and its resources. Management skills and subject or language competence often are required. Since librarians in this setting usually are considered academic faculty members, a second master's or other advanced degree is desirable.

**SPECIAL LIBRARIES AND INFORMATION CENTERS**

Special libraries serve corporations, private companies, government agencies, technical and academic institutions, museums, medical facilities, and information management consulting firms. They are organized to anticipate and quickly respond to the specific information needs of their users. Special librarians are information resource experts who collect, analyze, evaluate, package, and disseminate information to facilitate accurate decision making. Knowledge of information technology and the ability to design services suitable to the parent organization are
professional necessities. In addition, substantial subject expertise may be required.

SCHOOL TEACHER LIBRARIAN
School teacher librarians provide instruction to students in accessing, evaluating, and using information; collaborate with teachers on the use of resources in instruction; provide leadership in the use of instructional and information technologies; offer reading guidance; provide reference service; and manage the library media center.

The University of Iowa offers a state-approved program leading to endorsement as school teacher librarian K-12. In order to fulfill state requirements for this endorsement, students must hold or be eligible for a teaching license and must complete a designated sequence of courses that leads both to certification and to the M.A. degree.

Licensed teachers employed in Iowa schools may enroll in a distance education program that leads to an M.A. in library and information science and endorsement for school librarianship. Contact the School of Library and Information Science for details.

Students who are interested in school libraries but lack a valid Iowa teaching license may earn licensure as a school teacher librarian by completing 30 s.h. in the College of Education, the Master of Arts in library and information science with teacher licensure requires 66 s.h. of credit. Students must apply and be admitted to both programs.

INFORMATION SCIENCE
The multidisciplinary field of information science is influenced by the rapid growth in digital information collections and technologies. This specialization offers expertise in retrieval, dissemination, and use of information. In addition to libraries and information centers, many for-profit organizations are finding that information is a valuable commodity in today’s competitive world and are employing information management personnel. The curriculum offers opportunities to study information science aspects, such as digital libraries, electronic publishing, and web application design.

Joint Degrees
The School of Library and Information Science offers a joint Juris Doctor/Master of Arts with the College of Law. The primary goal of this joint program is integration of the two areas of study. Students in the joint program may apply a limited amount of credit toward both degrees. Up to 9 s.h. in law may be applied toward the M.A. in library and information science; up to 6 s.h. in library and information science may be applied to the J.D. Separate application to each degree program is required. Applicants must be admitted to both programs before they may be admitted to the joint degree program. For more information, see College of Law (p. 969) in the Catalog.

In addition to the joint J.D./M.A., joint programs may be arranged between departments on an ad hoc basis. A minimum of 60 s.h. of graduate work is required for a joint master's degree program.

Joint M.A./Certificate
Students interested in special collections, book arts, or museum librarianship may pursue an M.A. in library and information science in conjunction with a graduate Certificate in Book Studies/Book Arts and Technologies. The joint program also may be appropriate for students interested in book studies scholarship and those seeking careers in publishing, graphic arts, or book-related industries that require a similar blend of subject and technical knowledge.

The joint program requires a total of 51 s.h. At least 27 s.h. must be earned in the M.A. program, at least 15 s.h. must be earned in the certificate program, and the remaining 9 s.h. may be earned in either program. Separate application to each program is required. Applicants must be admitted to both programs before they may be admitted to the joint program. For more information, see Center for the Book (p. 929) in the Catalog.

Certificate in Public Digital Humanities
The School of Library and Information Science administers the graduate certificate program in public digital humanities. The program brings students together with varied academic backgrounds to learn how to communicate, sort out the roles required for fully functioning teams, and understand the unique contributions made by individuals across disciplines. Students learn to appreciate the diversity of humanities research methods while identifying core digital activities that underlie research projects.

The Certificate in Public Digital Humanities requires 15 s.h. of graduate credit. The program is open to all University of Iowa graduate students in good academic standing. Students must maintain a g.p.a. of at least 3.00 in work for the certificate. For more information, see Public Digital Humanities (p. 957) in the Catalog.

Related Certificate: Informatics
The Graduate College offers the Certificate in Informatics, with four subprograms open to students enrolled in the library and information science M.A. program: the bioinformatics and computational biology subprogram, the geoinformatics subprogram, the health informatics subprogram, or the information science subprogram. All subprograms require a minimum of 18-21 s.h. of graduate credit. The certificate program enables students to complement their studies with foundational and applied knowledge in informatics. Certificate course work includes core courses and approved electives. To learn more, see "Certificate" in the Informatics (p. 942) section of the Catalog.

Honor Society
The Beta Beta Theta Chapter of Beta Phi Mu, the international honor society for library and information science, is located at the University of Iowa. Each year new members are chosen from the top 25 percent of the preceding year's graduating classes. To be eligible for membership, graduates must achieve a g.p.a. of at least 3.75, demonstrate professional promise, and be recommended by the faculty.

Student Organizations and Activities
All M.A. students in the school are automatically members of LISSO, the Library and Information Science Student Organization, which also serves as the student chapter of the American Library Association. LISSO sponsors various activities, such as speaker series, workshops, brown
Admission

Applicants for admission to the M.A. program are required to have a g.p.a. of at least 3.00 on a 4.00 scale. The admission committee also considers each applicant’s letters of recommendation, statement of purpose, and other appropriate criteria. Graduate Record Examination (GRE) scores are not required. Admission is competitive.

Applicants whose first language is not English must score at least 81 (Internet-based) on the Test of English as a Foreign Language (TOEFL). Applicants who submit TOEFL scores below 100 on the Internet-based test are required by the University to take an English Proficiency Test if admitted to the program. In place of TOEFL, the school accepts International English Testing System (IELTS) scores of 7.0 or higher, with no subscore below 6.0. Applicants who submit IELTS scores are required to take an on-campus English proficiency evaluation.

Applicants begin the admission process by submitting an online graduate application through the Office of Admissions. The process requires a completed application form, transcripts of all academic work, a written statement of purpose and goals, and three letters of recommendation.

Completed applications should be received by the school by February 1 for consideration for fall admission. Decisions of the admissions committee are announced approximately six weeks after the application deadline. Late applications are considered if places are still available. Financial aid often is not available for late applicants. Admitted students are assigned a faculty advisor for program planning at the end of their first semester.

Applicants must meet the admission requirements of the Graduate College; see the Manual of Rules and Regulations of the Graduate College.

Financial Support

The School of Library and Information Science offers partial-tuition scholarships and one-quarter-time graduate assistantships. To be considered for scholarships or assistantships, applicants must meet the M.A. program’s grade-point average requirement for admission (see "Admission" above). Prospective students must submit letters of application for scholarships before February 1. Graduate assistantships are advertised as they become available; students should apply for specific assistantships.

For information on departmental scholarships, contact the School of Library and Information Science or visit its web site. Part-time employment usually is available in the University Libraries and other campus units. Applications for student loans, work-study eligibility, or other financial assistance should be submitted directly to the University’s Office of Student Financial Aid.

Job Placement

The school shares announcements of national and international job opportunities through an electronic mailing list. In addition, LISSo sponsors talks by speakers versed in areas of librarianship as well as workshops on résumé writing and interviewing. Internships and the school’s practicum courses provide students with hands-on experience that may enhance their job prospects.

Facilities, Resources

The School of Library and Information Science is housed in the south wing of the University’s Main Library, in a setting that promotes community among students, faculty, and staff and provides easy access to resources of the University of Iowa Libraries. Facilities are provided for the varied instructional and research activities of the school.

Gunther Commons

Gunther Commons, a state-of-the-art collaboratory, is the school’s combined student center and technology lab. Individuals and teams of students gather in the collaboratory to work on course assignments and to gain experience with specialized software that supports the latest teaching technologies. Students have access to both Windows and Macintosh computers in the collaboratory, with gigabit access to the campus network and wireless service throughout the Main Library.

University of Iowa Libraries

All of the resources of the University of Iowa Libraries are available to the school’s students and faculty. The system contains more than 4 million volumes in the Main Library and six departmental libraries.

The web-based catalog provides access to books and periodicals, electronic indexes, and full-text databases held by University Libraries. In addition, the InfoHawk Catalog to online resources provides access to selected Internet and CD-ROM resources arranged by subject and academic discipline. Wireless Internet access is widely available in the Main Library.

The third floor of the Main Library houses the map collection and Special Collections & University Archives, including the Iowa Women’s Archives.

Other Libraries

Students have access to a variety of libraries through field trips, practicum experience, and personal use: the State Historical Society of Iowa library in Iowa City; the Iowa City, Coralville, and Cedar Rapids public and school libraries; the Augustana, Coe, Cornell, Mount Mercy, and Grinnell College libraries; and the Herbert Hoover Presidential Library and Museum in West Branch.

Other Resources

The second floor of the University Capitol Centre (UCC) houses the instructional services and campus services departments of the University’s Information Technology Services. It provides instructional and research computing facilities and services for the University community. All University students, staff, and faculty may use the center’s computers for University-related research, thesis
preparation, and class work. Instructional Technology Centers provide campuswide access to the University’s academic computing resources and the Internet.

Courses

SLIS:4150 Introduction to Book Studies 3 s.h.
Theory and practice of book studies; meanings of word and image in the book format; comparative study of other media, applied study of the codex as physical artifact. English majors may apply this course to the following area and/or period requirement. AREA: Literary Theory and Interdisciplinary Studies. PERIOD: Early Literatures Through 17th Century, or 18th/19th-Century Literature, or 20th/21st-Century Literature. Same as ENGL:4150, UICB:4150.

SLIS:4900 Preservation and Conservation of Collection Materials 3 s.h.
Overview of responsible stewardship of library and archival collections; principles and practice of book conservation with focus on prototypes for conservation rebinding; appropriate care of books, papers, photographs (traditional and digital), film, and other non-print items; fundamental instruction in methods of page repair, investigation of eight historical prototypes, construction of related conservation binding models; lecture, discussion, student presentation, and hands-on activities. Prerequisites: SLIS:5010.

SLIS:4910 The Book in the Middle Ages 3 s.h.
Relation of text, decoration, function, creators, and audience in different genres of medieval manuscript books 400-1500 A.D. Same as HIST:4910, UICB:4910.

SLIS:4920 The Transition from Manuscript to Print 3 s.h.
Western manuscripts and books 1200-1600; changes in production and distribution methods and in how texts were used, in cultural context. Same as UICB:4920, HIST:4920.

SLIS:5000 Proseminar in Library and Information Science 0 s.h.
Integrated view of different areas of library and information science; early program exposure to faculty members and their research interests. Requirements: library and information science major.

SLIS:5010 Cultural Foundations 1-3 s.h.
The role of libraries and information agencies in society; major issues, including information policy, professional ethics, literacy, diversity, technology, pedagogy. Requirements: admission to library and information science.

SLIS:5020 Computing Foundations 3 s.h.
Introduction to analysis, specification, and design of automated systems; review of the software life cycle; testing, deployment, and evaluation of large, computer-based software. Requirements: admission to library and information science.

SLIS:5030 Conceptual Foundations 3 s.h.
Theory, principles, and standards in organization of information; function of catalogs, indexes, bibliographic networks; introduction to metadata descriptions, name and title access, subject analysis, controlled vocabularies, classification systems. Requirements: admission to library and information science.

SLIS:5041 Contextual Foundations—College and University Libraries 3 s.h.
Objectives, organization, unique functions and services of academic libraries; educational environment in which academic libraries function; examination of issues and problems affecting academic libraries. Prerequisites: SLIS:5010. Corequisites: SLIS:5010, if not taken as a prerequisite.

SLIS:5042 Contextual Foundations—Public Libraries 3 s.h.
Historical development of public libraries; current issues in public library management and policy making, including intellectual freedom; readers advisory service and genres of popular materials for adults. Prerequisites: SLIS:5010. Corequisites: SLIS:5010, if not taken as a prerequisite.

SLIS:5043 Contextual Foundations—Special Libraries 3 s.h.
Management, organizational structures, collections, client services in special libraries; site visits to a variety of special libraries, information centers; projects that apply theoretical principles. Prerequisites: SLIS:5010. Corequisites: SLIS:5010, if not taken as a prerequisite.

SLIS:5044 Contextual Foundations—School Library Media Administration 3 s.h.
Design of library media programs for the major functions of teaching and learning, information access, and program administration; focus on curricular and teaching responsibilities of school librarians and media specialists, development of philosophy, examination of roles and responsibilities, and program evaluation. Prerequisites: SLIS:5010. Corequisites: SLIS:5010, if not taken as a prerequisite.

SLIS:5200 User Education: Multimedia 3 s.h.
Learning theory as it relates to design of multimedia products for user education; presentation of information using multimedia technology in a Macintosh environment; development of user education products in linear and nonlinear forms.

SLIS:5210 Reference and Information Services 3 s.h.
Resources and services; essential reference services and experience using a variety of print and electronic resources to answer specific reference questions. Prerequisites: SLIS:5010.

SLIS:5220 Resources for Children 3 s.h.
Evaluation and use of books, magazines, electronic media, and other sources of information and recreation in relation to youth development.
SLIS:5230 Resources for Young Adults 3 s.h.
Topics related to populations served by youth services departments (e.g., societal issues, informational needs); seminar.

SLIS:5240 Resources for Adults 3 s.h.
Role of libraries in meeting adults’ informational and recreational needs; popular culture materials, Reader’s Advisory services, lifelong learning.

SLIS:5520 Studies in Book History 3 s.h.
Topics related to production, distribution, and consumption of books through history and into the future. Same as UICB:5520.

SLIS:5530 Topics in Preservation/Conservation 3 s.h.
Care, conservation, and preservation of cultural heritage artifacts; readings, discussion, hands-on sessions. Same as UICB:5530.

SLIS:5600 History of Readers and Reading 3 s.h.
Cultural nature of reading practices in historic and contemporary contexts of reading; reading communities; dimensions of gender, age, class, religion, race, ethnicity; examples of recent scholarship; use of primary resources; seminar. Same as UICB:5560.

SLIS:5900 Health Informatics I 3 s.h.
Technological tools that support health care administration, management, and decision making. Requirements: graduate standing. Same as MED:5300, RSNM:3195, HMP:5370, IE:5860, IGPI:5200.

SLIS:6020 Literacy and Learning 3 s.h.
Learning and literacy theory relevant to work in information services; how librarians can help people process information and use it to form understanding and create new knowledge. Prerequisites: SLIS:5010.

SLIS:6100 Database Systems 3 s.h.
Design and development of a database-driven information system, including interfaces, database schema, and essential database operations; focus on widely used relational database model. Prerequisites: SLIS:5020.

SLIS:6110 Evidence-Based Practice in Library and Information Science 3 s.h.
Using research methods to create useful data to analyze library processes and assess effective programs in libraries; using results of research to improve library programs.

SLIS:6130 Community Engagement 3 s.h.
Ways in which information professionals in libraries and other settings learn about, collaborate with, and provide services and outreach to community members; introduction and overview of community engagement theory and practice; service learning or community-based research projects. Prerequisites: SLIS:5010.

SLIS:6140 Digital Environments 3 s.h.
Methods and models for building digital libraries; organization with metadata; standards such as those for object identifiers, open access, building cross-linkages between collections; automatic harvesting of content. Prerequisites: SLIS:5020.

SLIS:6150 Information Behavior 3 s.h.
Understanding how information users approach their information needs; concepts for understanding information use; analysis of user communities.

SLIS:6160 Search and Discovery 3 s.h.
Search system architecture; information needs and queries; search models; concepts in relevance and repositories, archives, web-based systems; information quality measures.

SLIS:6170 Organizational Management 3 s.h.
Survey of management issues common to all information environments—understanding organizations, decision making, hiring and personnel, grant writing, and marketing.

SLIS:6190 Knowledge Management 3 s.h.
How organizations acquire, manage, and use information; knowledge management and competitive intelligence, information from inside and outside the organization; organization types, including library, corporate, and nonprofit. Same as MSCI:6190.

SLIS:6250 Beginning Cataloging and Classification 3 s.h.
Systems for describing materials and information in catalogs and organizing them for effective retrieval in libraries, museums, and other information centers; AACR2 descriptive principles, Dewey and Library of Congress classifications, Sears and LC subject headings, cataloging networks and services. Prerequisites: SLIS:5030.

SLIS:6270 Electronic Publishing 3 s.h.
Modes and methods for building electronic journals, books, thematic collections; new genres for publishing, including blogs, wikis, comics, short stories on the web; social, political, and economic forces that shape electronic publishing; XML-based project. Prerequisites: SLIS:5020. Same as UICB:6270.

SLIS:6320 Topics: Conceptual Structures/Systems 1-3 s.h.
Special topics relevant to conceptual structures (e.g., knowledge, representation, manipulation schemes) and systems (e.g., intelligent OPACS, user interface technologies).

SLIS:6330 Archives and Media 3 s.h.
Collecting as a core library activity; various types of media collected, from traditional print media to new digital media; how archives are structured and managed to provide for selection, organization, access, and perpetual storage; work on sample collections, presentation of techniques and concepts. Prerequisites: SLIS:5010 and SLIS:5030.

SLIS:6350 Metadata Theories and Applications 3 s.h.

**SLIS:6345 Stewardship of Information and Collections** 3 s.h.
Principles for creating, building, and maintaining digital and print collections in libraries and other information organizations. Prerequisites: SLIS:5010. Corequisites: SLIS:5010 if not taken as a prerequisite. Requirements: Admission to Library and Information Science program.

**SLIS:6370 Topics in Book Studies** 3 s.h.
Topics relevant to book studies and special collections. Same as UICB:6370.

**SLIS:6375 Human Computer Interaction** 3 s.h.
Design user interfaces for interacting with information, emphasis on system design and evaluation (as opposed to system implementation); construct interface prototypes, conduct evaluations of design. Prerequisites: SLIS:5020.

**SLIS:6380 Analysis of Scholarly Domains** 3 s.h.
Information transfer in academic disciplines; scientific method, other means of knowledge construction, resulting literatures; reference tools used to control literature for a variety of audiences; emphasis on humanities, social sciences, or sciences.

**SLIS:6430 Nonprofit Organizational Effectiveness I** 3 s.h.

**SLIS:6435 Nonprofit Organizational Effectiveness II** 3 s.h.

**SLIS:6490 Information Policy and Ethics** 3 s.h.
Ethical and legal issues as they relate to information policy development and interpretation; application of information policies to address problems in information organizations.

**SLIS:6520 Practicum in Libraries and Information Centers** 2-3 s.h.
Supervised field experience in selected libraries and information centers; emphasis on application of theory to practice; at least 80 hours of fieldwork.

**SLIS:6530 School Library Media Practicum** 3 s.h.
Supervised field experience in library media centers at elementary and secondary school levels; emphasis on application of theory to practice; at least 80 hours of fieldwork. Prerequisites: SLIS:5044.

**SLIS:6570 Independent Study** 1-3 s.h.
Formal contract between student and faculty member. Requirements: formal proposal.

**SLIS:6580 Thesis** 0-6 s.h.

**SLIS:6585 Design, Visualization, and Mapping 3-D Environments** 3 s.h.
Introduction to foundational modeling theory, methodology, and conceptual principles of design necessary to present information in visual formats; various software including data management solutions, database concepts, and simple programming skills that assist in visualizing and disseminating data through multiple digital and online media; basic graphing tools to map data; how to model physical properties and theoretical reconstructions of architectural elements in various 3-D digital modeling environments. Requirements: admission to public digital humanities certificate program. Same as CLSA:6585.

**SLIS:6590 Digital Humanities Capstone** 3 s.h.
Application and practice of classroom experience to a specific project under guidance from a faculty member and project team leader. Requirements: completion of 12 s.h. and good standing in digital humanities certificate program.

**SLIS:7290 Obermann Center Theory and Practice in Digital Public Humanities** 3 s.h.
Overview of theories and use of technology to preserve, deploy, visualize, map, and analyze concepts; discussions with practicing digital public scholars; assignments tailored to student research; final group project; introductory course in public digital humanities certificate. Same as CLSA:7290.
Molecular and Cellular Biology

**Director**
- Frederick Domann (Pathology/Radiation Oncology/Surgery)

**Graduate degree:** Ph.D. in molecular and cellular biology

**Faculty:** [http://molcellbio.grad.uiowa.edu/faculty/directory](http://molcellbio.grad.uiowa.edu/faculty/directory)

**Web site:** [http://molcellbio.grad.uiowa.edu](http://molcellbio.grad.uiowa.edu)

The Molecular and Cellular Biology Program provides interdisciplinary training in the concepts and methodologies fundamental to the investigation of biological mechanisms at the molecular level. Faculty members are involved in a variety of research projects related to gene expression and regulation.

**Graduate Program of Study**
- Doctor of Philosophy in molecular and cellular biology

**Doctor of Philosophy**

The Doctor of Philosophy program in molecular and cellular biology requires a minimum of 72 s.h. of graduate credit. The program is sufficiently flexible to accommodate students with a wide range of backgrounds in the biological and physical sciences. Entering students are expected to have a solid background in science, including introductory biology and chemistry, organic chemistry, physical chemistry, calculus, genetics, and biochemistry. Students can remedy deficiencies in particular areas by taking appropriate course work during the first year of graduate study.

The curriculum consists of a sequence of required, core, and elective courses that provide didactic training in molecular and cellular biology and that ensure comprehensive exposure to concepts and experimental methodologies in the field. Students engage in laboratory research immediately upon enrollment and progress rapidly to original thesis projects that lead to a Ph.D.

Because of the diversity of biological research problems that can be pursued by employing molecular and cellular approaches, the program provides options for specialization in particular areas of interest.

The Ph.D. in molecular and cellular biology requires the following course work.

**DIDACTIC COURSE WORK**

All of these:
- MCB:6215 Transcription and Multi-Functional Regulation by RNA 1 s.h.
- MCB:6217 Epigenetics, Cancer, and Mouse Models of Disease 1 s.h.
- MCB:6220 Mechanisms of Cellular Organization 3 s.h.
- BISC:5204 Biostatistics for Biomedical Research 1 s.h.
- Electives (courses preapproved by advisor) 18 s.h.

These, if recommended by the advisor:
- BIOC:7251 Introduction to Protein Structures 1 s.h.
- BISC:5201 Fundamentals of Gene Expression 1 s.h.
- BISC:5203 Fundamentals of Dynamic Cell Processes 1 s.h.

**SEMINARS AND PROFESSIONAL DEVELOPMENT**

All students take both of these:
- MCB:7290 Seminars in Molecular and Cellular Biology 1 s.h.
- GRAD:7270 Principles of Scholarly Integrity 1 s.h.

Precomprehensive students take this each semester:
- MCB:6280 Topics in Molecular and Cellular Biology 1 s.h.

Postcomprehensive students take this each semester:
- Journal club of the student's choice 1 s.h.

**THESIS RESEARCH AND DISSERTATION**

After successfully completing the comprehensive examination, usually at the end of the second year of graduate study, students advance to candidacy for the Ph.D. degree. They devote their time to completing thesis research and writing their Ph.D. dissertation. Upon successful completion of all requirements, including the dissertation and its oral defense, students are awarded a Ph.D. in molecular and cellular biology.

**Admission**

For application materials and information about graduate training in molecular and cellular biology, contact the Molecular and Cellular Biology Program or visit its web site. Applicants must meet the admission requirements of the Graduate College; see the Manual of Rules and Regulations of the Graduate College.

**Financial Support**

Graduate students in the Molecular and Cellular Biology Program receive stipends and tuition support from institutional and extramural sources, including University of Iowa fellowships and graduate research assistantships, and training grants from the National Institutes of Health.

**Facilities**

Training is conducted primarily in laboratories and teaching facilities of the Carver College of Medicine Stead Family Department of Pediatrics and the Departments of Anatomy and Cell Biology, Biochemistry, Internal Medicine, Microbiology, Molecular Physiology and Biophysics, Neurology, Obstetrics and Gynecology, Ophthalmology and Visual Sciences, Otolaryngology—Head and Neck Surgery, Pathology, Pharmacology, Physical Therapy and Rehabilitation Science, Psychiatry, and Radiation Oncology; and the College of Liberal Arts and Sciences Departments of Biology and Chemistry. Faculty laboratories and central research facilities available to students provide access to the most up-to-date research equipment.

**Courses**

- MCB:6215 Transcription and Multi-Functional Regulation by RNA 1 s.h.
Principles and techniques for investigating mechanisms of controlling eukaryotic gene expression; basic genome organization, chromatin structure, transcription, RNA processing, translation; cloning methods, use of electronic sequence databases, footprinting, chromatin immunoprecipitation, in vivo and in vitro transcription assays, DNA microarray analysis, information retrieval. Prerequisites: BISC:5201.

MCB:6217 Epigenetics, Cancer, and Mouse Models of Disease 1 s.h.
Epigenetic mechanisms of transcriptional control; regulation of chromatin structure and its relation to disease; fundamental concepts in cancer; mouse models for understanding the molecular basis for human disease; based on research publications. Prerequisites: BISC:5201.

MCB:6220 Mechanisms of Cellular Organization 3 s.h.
Current understanding of basic cell biological processes; key experiments that led to guiding insights; mechanisms that cells use for compartmentalization and how those mechanisms are regulated; biogenesis of major organelles (e.g., mitochondria, peroxisomes, nucleus, secretory/endocytic membrane system); functions of cytoskeleton in cell motility, organelle motility, and cell division. Prerequisites: BIOC:3130. Same as MPB:6220, ACB:6220.

MCB:6225 Growth Factor Receptor Signaling 1 s.h.
Mechanisms of signaling by growth factors; cytokines and related molecules that regulate cell proliferation, development, differentiation, and survival; emphasis on molecular mechanisms of signaling, relevance of these signaling processes to various human diseases. Recommendations: BISC:5201 and BISC:5203. Same as MPB:6225, ACB:6225.

MCB:6226 Cell Cycle Control 1 s.h.
Cell cycle regulation, DNA damage-dependent cell cycle regulation, redox-dependent cell cycle regulation, cellular senescence. Recommendations: BISC:5201 and BISC:5203. Same as ACB:6226, MPB:6226.

MCB:6227 Cell Fate Decisions 1 s.h.

MCB:6240 Inflammatory Cell Signaling and Targeted Cancer Therapy 1 s.h.
Introduction to topics in important cancer signaling pathways; promises and challenges of targeted cancer therapy; emphasis on current fundamental topics in cancer cell signalings; how altered protein ubiquitination/deubiquitination, constitutive activation of proteins kinases, and transcription factors underpin uncontrollable proliferation and survival of cancer cells in tumor microenvironment; translation of knowledge to targeted cancer therapy; promotion of critical thinking. Recommendations: MCB:6225 and MCB:6227 and BIOC:5243.

MCB:6250 Mechanisms of Parasitism Journal Club 1 s.h.
Reviews of recent publications in molecular parasitology research and thesis research by training grant or journal club students. Same as MICR:6250.

MCB:6280 Topics in Molecular and Cellular Biology 1 s.h.
Opportunity to work closely with participating faculty to gain skill in critical reading of research literature and facility in presenting material to an audience. Requirements: advanced graduate standing.

MCB:7290 Seminars in Molecular and Cellular Biology 1 s.h.
Research findings in molecular biology. Requirements: molecular and cellular biology graduate standing.

MCB:7300 Directed Study in Molecular and Cellular Biology arr.

MCB:7305 Molecular and Cellular Biology Research arr.
Requirements: molecular and cellular biology graduate standing.
Neuroscience

Chair
- Daniel Tranel (Psychological and Brain Sciences/Neurology)

Graduate degree: Ph.D. in neuroscience
Faculty: http://neuroscience.grad.uiowa.edu/faculty
Web site: http://neuroscience.grad.uiowa.edu

The Neuroscience Program provides an interdisciplinary and interdepartmental approach to graduate education and research training in the structure, function, and development of the nervous system and its role in cognition and behavior. Students obtain training at all levels of the nervous system, from cellular/molecular to behavioral/cognitive.

Graduate Program of Study
- Doctor of Philosophy in neuroscience

Doctor of Philosophy
The Doctor of Philosophy program in neuroscience requires a minimum of 72 s.h. of graduate credit. The program's curriculum is designed around three tracks: molecular/cellular, developmental/systems, and cognitive/behavioral. Following broad-based instruction in a core curriculum, students specialize in one of the tracks.

Within a framework of core, track-specific, and elective courses, each student pursues a program of study individually designed according to his or her undergraduate training and graduate research goals. After enrolling in the Neuroscience Program, entering students consult with the advisory committee regarding their level of preparation for the program's required courses.

The Student Advisory Committee meets with all first- and second-year graduate students once each semester, helping each student explore his or her research interests and select faculty mentors for the required laboratory rotations. Each student is expected to complete three rotations in faculty laboratories before selecting a thesis advisor. Rotations ordinarily last 12 weeks but may last from 8 to 16 weeks. Under special circumstances, two rotations may be in the same laboratory, an arrangement that permits the student to learn a variety of techniques and approaches before settling down to work on the dissertation project. Students usually choose a dissertation lab at the end of their first year.

BACKGROUND REQUIREMENTS
Students are expected to demonstrate competency, through prerequisites or course work, in each of four fields: biochemistry, general physiology, cell biology, and statistics. These requirements ordinarily should be fulfilled by the end of the first year of graduate study. Waivers of background course requirements may be requested by students who have taken equivalent courses before entering the Neuroscience Program.

NEUROSCIENCE CORE
The following courses form the core of the neuroscience graduate curriculum.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>NSCI:4353</td>
<td>Neuropysiology</td>
<td>3-4 s.h.</td>
</tr>
<tr>
<td>NSCI:4753</td>
<td>Developmental Neurobiology</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

ELECTIVES
Elective requirements may be met by completing 3 s.h. from a list of courses offered by the Departments of Anatomy and Cell Biology, Biology, Molecular Physiology and Biophysics, Pharmacology, Psychological and Brain Sciences, and other departments as appropriate. With permission of the Student Advisory Committee, students may satisfy the elective requirement wholly or in part by registration in NSCI:7301 Directed Study in Neuroscience.

Admission
Applicants must meet the admission requirements of the Graduate College; see the Manual of Rules and Regulations of the Graduate College.

For information about predoctoral training opportunities in neuroscience, contact the Neuroscience Program or visit its web site.

Financial Support
Full-time Neuroscience Program students receive stipends and full tuition scholarships through fellowships and research assistantships. Awards are renewed annually, based on continued satisfactory progress and availability of funds. The standard graduate student stipend for 2015-16 is $26,500.

The Neuroscience Program is committed to supporting its graduate students for their entire training period. Students normally are supported in the first year by the program. After that, support is expected to come from the student's primary research mentor. Occasionally, advanced students are supported through teaching assistantships. Tuition is paid for all students.

NIH TRAINING GRANT
The Neuroscience Program is supported by a training grant from the National Institutes of Health. The grant provides stipend and tuition support for a select group of first- and second-year graduate students.

Facilities
Training is conducted primarily in the laboratories and teaching facilities of the Carver College of Medicine graduate Departments of Anatomy and Cell Biology, Biochemistry, Internal Medicine, Molecular Physiology and Biophysics, Neurology, Pharmacology, and Psychiatry; and the College of Liberal Arts and Sciences Departments
of Biology, Communication Sciences and Disorders, Health and Human Physiology, and Psychological and Brain Sciences. Students use faculty laboratories and central research facilities for ultrastructural analysis; histochemistry and immunocytochemistry; electrophysiology; fluorescence-activated cell sorting; cellular and subcellular biochemistry; cell, tissue, and organ culture; operant and classical conditioning; molecular biology; behavioral genetics; neural substrates of complex behavior; brain-behavior relationships in humans; neuropsychology; and functional neuroimaging (PET, fMRI).

Courses

**NSCI:4353 Neurophysiology** 3-4 s.h.
Physiological properties of nerve cells, nervous systems; axonal conduction, synaptic transmission, sensory transduction, integrative processes, higher functions. Prerequisites: (BIOL:2753 or BIOL:3253) and (MATH:1460 or MATH:1850) and (PHYS:1512 or PHYS:1612). Same as BIOL:4353.

**NSCI:4753 Developmental Neurobiology** 3 s.h.
Neural induction and nervous system patterning; neurogenesis, axon and dendrite outgrowth and targeting; synapse formation, specificity, refinement; mechanisms of neuronal cell death; myelination; neural stem cells; introduction to cellular, molecular, and genetic techniques in studies of neural development. Prerequisites: BIOL:2753. Corequisites: BIOL:3253. Requirements: grade of B- or higher in BIOL:2753 or graduate standing. Same as BIOL:4753, MPB:4753.

**NSCI:5161 Undergraduate Research in Neuroscience** arr.
Experimental research under faculty supervision.

**NSCI:5210 Fundamentals of Behavioral Neuroscience** 4 s.h.
Concepts, methods, and findings in behavioral and cognitive neurosciences: emphasis on principles of neuroscience, sensation, motivation, emotion. Same as PSY:5210.

**NSCI:5212 Foundations in Behavioral and Cognitive Neuroscience** 4 s.h.
Concepts, methods, and findings in behavioral and cognitive neurosciences. Prerequisites: BIOL:3253 or PSY:5210 or NSCI:5210. Same as PSY:5212.

**NSCI:5365 Seminar: Neuropsychology and Neuroscience** arr.
Clinical neuropsychology and cognitive neuroscience: cutting-edge research from scientific journals, case presentations in clinical neuropsychology, and current research. Same as PSY:5365, NEUR:5365.

**NSCI:5653 Fundamental Neurobiology** 4 s.h.
Neurobiology from molecular/cellular to systems levels, including cell biology of neuron; membrane electrophysiology, synaptic transmission and plasticity, functional neuroanatomy, sensory systems from periphery to CNS, peripheral and central motor systems, autonomic systems emotion, memory, sleep, language, attention and cognition, development of nervous system; discussion of classic and recent journal articles. Same as BIOL:5653, PSY:5203.

**NSCI:6209 Steroid Receptor Signaling** 1 s.h.
Structure-function relationship and genomic and nongenomic actions of the steroid hormone receptor family; basis for actions of novel new ligands on these receptors. Offered spring semesters. Same as PCOL:6209, MPB:6209.

**NSCI:6240 Topics in Cognitive Neuroscience** 1-3 s.h.
Key topics in the neural basis of human cognition; research literature. Recommendations: graduate courses in basic neuroscience and cognitive psychology. Same as NEUR:6240.

**NSCI:6250 Functional Magnetic Resonance Imaging** 2-3 s.h.
Basic physics principles of functional magnetic resonance imaging and approaches to data acquisition, including BOLD imaging, arterial spin labeling, and magnetic source imaging; data analysis strategies; paradigm design and development.

**NSCI:6265 Neuroscience Seminar** 0-1 s.h.
Research presentations. Offered fall and spring semesters. Same as PSY:6265, ACB:6265, MPB:6265, BIOL:6265.

**NSCI:7235 Neurobiology of Disease** 3 s.h.
Broad, thematic understanding of disease mechanisms in neurobiological disorders.

**NSCI:7301 Directed Study in Neuroscience** arr.

**NSCI:7305 Neuroscience Research** arr.
Requirements: neuroscience graduate standing.
Public Digital Humanities

Director
• James Elmborg (Library and Information Science)

Graduate certificate: public digital humanities
Faculty: http://thestudio.uiowa.edu/pdhc/?page_id=14
Web site: http://thestudio.uiowa.edu/pdhc/

The certificate program in public digital humanities brings students with varied academic backgrounds together to learn how to communicate, to sort out the roles required for fully functioning teams, and to understand the unique contributions made by individuals across disciplines. Students learn to appreciate the diversity of humanities research methods while identifying core digital activities that underlie research projects.

Graduate Program of Study
• Certificate in Public Digital Humanities

The Certificate in Public Digital Humanities is administered by the School of Library and Information Science (p. 946) and is granted by the Graduate College.

Certificate
The Certificate in Public Digital Humanities requires 15 s.h. of graduate credit. The program is open to all University of Iowa graduate students in good academic standing. Students must maintain a g.p.a. of at least 3.00 in work for the certificate.

The Certificate in Public Digital Humanities requires the following course work.

<table>
<thead>
<tr>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SLIS:6330 Archives and Media</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>SLIS:6585 Design, Visualization, and Mapping 3-D Environments</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>SLIS:6590 Digital Humanities Capstone</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>SLIS:7290 Obermann Center Theory and Practice in Digital Public Humanities</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>An elective course on digital pedagogy, database systems, GIS, digital reconstruction, multimedia writing, or technologies, approved by the advisor</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

The elective course may be transferred from another academic institution at the discretion of the student's certificate advisor and with approval of the Graduate College. A g.p.a. of at least 3.00 is required for transfer course work.

Applicants to the certificate program must submit a one-page statement of interest to the director of the certificate program. They must include a signed letter from their academic advisor stating that they have their home department's support in pursuing the certificate.
Translational Biomedicine

Chair
• Gary Rosenthal (Epidemiology/Internal Medicine/Health Management and Policy)

Education directors
• Pamela Geyer (Biochemistry/Obstetrics and Gynecology), Peggy Nopoulos (Psychiatry/Neurology/Stead Family Department of Pediatrics)

Graduate degrees: M.S. in translational biomedicine; Ph.D. in translational biomedicine

Web site: http://icts.uiowa.edu/

Graduate Programs of Study
• Master of Science in translational biomedicine
• Doctor of Philosophy in translational biomedicine

Master of Science

The Master of Science program in translational biomedicine requires a minimum of 30 s.h. of graduate credit. Each student's plan of study for the two-year program is based on his or her chosen discipline.

The goals of the M.S. program in translational biomedicine are to:
• promote interaction and collaboration among researchers across the spectrum of biomedicine;
• enrich translational vocabulary and an understanding of T1 research (laboratory), T2 research (application to evidence-based practice), T3 research (implementation and dissemination), and T4 research (population studies and policy development) among basic, clinical, and human studies scientists; and
• develop skills in ethical decision making, scientific leadership, team building, networking, and research program management.

The M.S. program is designed to teach members of scientific teams how to move biomedical discoveries into clinical applications and beyond. It is tailored for individuals who have completed training in one area of biomedicine and wish to apply their expertise to the T1-T4 research spectrum. The program admits individuals who hold medical or graduate degrees and are employed by the University of Iowa at the faculty ranks of assistant professor, associate, or instructor or as fellow physicians or postdoctoral scholars/fellows.

Work for the M.S. requires authorship of an original manuscript of publishable quality for a peer-reviewed journal or authorship of a grant proposal for a National Institutes of Health (NIS) career award (e.g., K23, K08, K01, R01, R03, R21) or a Veterans Administration Career Award; R03 proposals completed for EPID:6110 Grant Writing for Clinical Investigators do not count toward this requirement. Original research manuscripts must be a minimum of 2,500 words. They must include a structured abstract; an introduction that frames the research question; description of methodology for study design, sampling, data collection strategies and sources, and description of data elements and data analysis; description of study results; and a discussion section that describes the relationship of current findings to prior relevant research, the clinical and policy implications of the findings, and methodological limitations.

The M.S. program in translational biomedicine requires the following course work:

<table>
<thead>
<tr>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>TBM:5000 Translational Biomedical Research</td>
<td>9 s.h.</td>
</tr>
<tr>
<td>TBM:5001 Introduction to Translational Biomedicine</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>TBM:5002 Critical Thinking and Communication: Study Design and Commercialization</td>
<td>1 s.h.</td>
</tr>
<tr>
<td>TBM:5003 Critical Thinking and Communication: Scientific Writing and Presentation Strategies</td>
<td>1 s.h.</td>
</tr>
<tr>
<td>BIOS:5110 Introduction to Biostatistics</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>EPID:4400 Epidemiology I: Principles</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>EPID:6950 Clinical Research Ethics</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>A course in translational biomedicine critical thinking and communication: leadership, teamwork, and mentoring</td>
<td>1 s.h.</td>
</tr>
<tr>
<td>Electives</td>
<td>6 s.h.</td>
</tr>
</tbody>
</table>

SAMPLE SCHEDULE FOR THE M.S.

First year fall semester—all of these:

<table>
<thead>
<tr>
<th>Course Title</th>
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</tr>
</thead>
<tbody>
<tr>
<td>TBM:5000 Translational Biomedical Research</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>TBM:5001 Introduction to Translational Biomedicine</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>TBM:5002 Critical Thinking and Communication: Study Design and Commercialization</td>
<td>1 s.h.</td>
</tr>
</tbody>
</table>

First year spring semester—all of these:

<table>
<thead>
<tr>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>TBM:5000 Translational Biomedical Research</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>TBM:5003 Critical Thinking and Communication: Scientific Writing and Presentation Strategies</td>
<td>1 s.h.</td>
</tr>
<tr>
<td>EPID:6950 Clinical Research Ethics</td>
<td>2 s.h.</td>
</tr>
</tbody>
</table>

And one of these:

<table>
<thead>
<tr>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOS:5110 Introduction to Biostatistics</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>EPID:5610 Intermediate Epidemiology Data Analysis with SAS and R</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

Second year fall semester—all of these:

<table>
<thead>
<tr>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>TBM:5004 Critical Thinking and Communication: Career Development and the Funding Process</td>
<td>1 s.h.</td>
</tr>
<tr>
<td>EPID:4400 Epidemiology I: Principles</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>Elective</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

Second year spring semester—all of these:

<table>
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<tr>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>TBM:5000 Translational Biomedical Research</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>A course in translational biomedicine critical thinking and communication: leadership, teamwork, and mentoring</td>
<td>1 s.h.</td>
</tr>
<tr>
<td>Elective</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

Doctor of Philosophy

The Ph.D. program is not accepting students in 2015-16.
Related Certificate: Translational and Clinical Investigation

The Department of Epidemiology and the Institute for Clinical and Translational Science offer the graduate certificate program in translational and clinical investigation; see Translational and Clinical Investigation (p. 1187) (College of Public Health) in the Catalog.

Admission

The Translational Biomedicine Program welcomes applicants who have diverse educational and scientific backgrounds and varied research interests. Applicants must have a strong interest and background in a health science profession and knowledge of basic sciences and medicine.

Applicants must meet the admission requirements of the Graduate College; see the Manual of Rules and Regulations of the Graduate College.

Translational biomedicine applicants must:

- have a doctoral-level degree in a biomedical discipline (e.g., M.D., D.O., D.D.S., D.N.P., Ph.D., PharmD., D.V.M., or equivalent);
- be employed by the University of Iowa as an assistant professor, an associate, an instructor, a fellow physician, or a postdoctoral scholar/fellow;
- be engaged in scientific research with a University of Iowa mentor who has funding from a peer-reviewed source (e.g., NIH, NSF, a foundation, and so forth);
- hold a bachelor's degree from a regionally accredited American college or university or an equivalent degree from an international institution, as determined by the University of Iowa Office of Admissions;
- have a g.p.a. of at least 3.00 or the international equivalent, as determined by the University of Iowa Office of Admissions; and
- have a Graduate Record Exam (GRE) General Test combined verbal and quantitative score of 300 on the revised test (or 1050 on the old test) and an analytical writing score of 4.0 or above; applicants who already hold a graduate or professional degree may seek a waiver of the GRE requirement.

Applicants whose first language is not English must score at least 100 (Internet-based) on the Test of English as a Foreign Language (TOEFL), or they must have a score of at least 7.0, with no subscore lower than 6.0, on the International English Language Testing System (IELTS).

Applicants must submit a CV, a statement of research interest and career goals, and three letters of recommendation. One letter must be from the applicant’s UI research mentor; the program recommends that the second be a letter of support from the applicant’s department chair.

All prospective students, and their mentors, must guarantee that once they are accepted as students in the program, they will be able to devote essentially all of their time over a two-year period to training. For instance, a fellow in the Carver College of Medicine could spend no more than two months each year working on clinical assignments (e.g., two months of inpatient assignments or one month of inpatient assignments and one-half day per week in a clinic).

Facilities

Training is conducted mainly in the laboratories and teaching facilities of the Carver College of Medicine and the College of Public Health. The University of Iowa Institute for Clinical and Translational Science is available for research training. The program also is linked with the Carver College of Medicine’s graduate training program in clinical research.

Courses

**TBM:3001 Introduction to Translational Research**

Array of scientific studies translated into clinical solutions; creative ideas balanced with practical strategies for implementation at bedside; expansive number of career opportunities becoming available in translational sciences. Prerequisites: BIOL:1411 and MATH:1460. Requirements: admission to clinical and translational science certificate program.

**TBM:3002 Practicum in Clinical and Translational Science**

How research experience translates into clinical practice; translational impact of independent research; summary of research accomplishments; outline of a translational paper that is mutually acceptable to student, preceptor, and faculty; submission of paper and completion of poster presentation describing research project and translational application of research. Prerequisites: BIOL:1411 and MATH:1460. Requirements: admission to clinical and translational science certificate program.

**TBM:5000 Translational Biomedical Research**

Student research guided by mentor.

**TBM:5001 Introduction to Translational Biomedicine**

Basis for clinical and translational research; introduction to principles of experimental design for patient- and population-oriented research; approaches available to clinical and translational investigators (e.g., statistics, questionnaires, ethics, imaging, information technology); infrastructure that supports clinical and translational investigators at the University of Iowa and nationally; for early-career clinicians/scientists and established investigators. Requirements: enrollment in translational biomedicine M.S. program.

**TBM:5002 Critical Thinking and Communication: Study Design and Commercialization**

Various study design methodologies and process of commercialization; presentations of current projects. Requirements: candidacy for M.S. in translational biomedicine.

**TBM:5003 Critical Thinking and Communication: Scientific Writing and Presentation Strategies**

Grant development and journal writing process; development of effective scientific presentations.
TBM:5004 Critical Thinking and Communication: Career Development and the Funding Process
Introduction to a variety of career development awards and their requirements; opportunity to work on personal career development grant applications.

TBM:5100 Preceptorship in Translational and Clinical Investigation
Structured experience in conducting translational and clinical research, data analysis, and producing a publication-quality report.

TBM:5101 Introduction to Translational Research
Array of scientific studies translated into clinical solutions; creative ideas balanced with practical strategies for implementation at bedside; expansive number of career opportunities becoming available in translational sciences. Requirements: admission to TSTEP program.
Transportation Studies

**Director**
- Paul F. Hanley

**Graduate certificate:** transportation studies

**Faculty:** [http://ppc.uiowa.edu/people](http://ppc.uiowa.edu/people)

**Web site:** [http://ppc.uiowa.edu/](http://ppc.uiowa.edu/)

Transportation is vital to modern society. The United States, like other nations, faces many critical transportation problems and issues. The highway system is reaching an advanced stage of its life cycle, public transit operating deficits are growing, the quality of transportation available to many citizens is unacceptably low, serious inequities exist between transportation modes, and extensive changes are called for in traditional transportation institutions. New approaches to financing the nation's road system are badly needed.

Transportation engineers and planners draw on a number of skills to respond to the challenges they face. They must analyze and forecast the movement of people and goods within and between cities; identify effective and efficient means for providing desired transportation services; price these services properly; and evaluate the impact that transportation changes have on land use, environmental quality, the local or regional economy, and various subgroups within society.

No single academic discipline can supply all of the theories, principles, or methods needed to address the varied and complex problems in transportation. Recognizing this, the Department of Civil and Environmental Engineering (p. 871) and the School of Urban and Regional Planning (p. 963) participate in the interdisciplinary Transportation Studies Program, through which students in the participating units can earn the Certificate in Transportation Studies along with their graduate degrees.

The Department of Mechanical and Industrial Engineering (p. 894) also participates in the transportation certificate program, offering courses in human factors and safety issues in transportation, and the Department of Geographical and Sustainability Sciences (p. 323) offers courses in geographic information systems (GIS), location theory, and other related areas.

The Certificate in Transportation Studies is coordinated by the Public Policy Center in conjunction with the Graduate College.

### Graduate Program of Study

- Certificate in Transportation Studies

#### Certificate

The Certificate in Transportation Studies requires 18 s.h. of graduate credit. Students may earn the certificate in conjunction with an M.S. or Ph.D. in civil and environmental engineering or with an M.A. or M.S. in urban and regional planning.

Individually working toward degrees in other transportation-related disciplines are encouraged to apply to the Transportation Studies Program. Depending on a student's background, additional course work in statistics, computer programming, simulation, mathematics, and operations research may be required for the certificate.

Credit earned in these courses may not be applicable to the student's degree program.

Students enrolled in the certificate program may wish to participate in faculty-led transportation research, which may explore topics such as system planning, traffic operations and engineering, spatial data systems and analysis, simulation applications, and policy issues.

### Certificate with M.S. or Ph.D. in Civil and Environmental Engineering

Students working toward a Master of Science or a Doctor of Philosophy in civil and environmental engineering may earn the Certificate in Transportation Studies by completing the courses listed below (18 s.h.). Not all courses are offered every semester; consult ISIS to determine when specific courses are offered.

#### Fall Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CEE:4762</td>
<td>Design of Transportation Systems</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>CEE:4763</td>
<td>Traffic Engineering</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>CEE:4764</td>
<td>Winter Highway Maintenance</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>CEE:6763</td>
<td>Application Simulation to Transportation</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>URP:6266</td>
<td>Transportation and Land Use Planning</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

#### Spring Semester

Three of these:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CEE:4160</td>
<td>Introduction to Bridge Engineering</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>CEE:4167</td>
<td>Public Transit Operations and Planning</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>CEE:4176</td>
<td>Transportation Demand Analysis</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>CEE:4568</td>
<td>Civil Infrastructure</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

Engineering students may apply to the certificate program through the Graduate College and the Department of Civil and Environmental Engineering. See Civil and Environmental Engineering (p. 871) (College of Engineering) for information about graduate study and degree requirements in that department.

### Certificate with M.A. or M.S. in Urban and Regional Planning

Students working toward a Master of Arts or Master of Science in urban and regional planning may earn the Certificate in Transportation Studies by completing a total of 18 s.h. from the courses listed below. Not all courses are offered every semester; consult ISIS to determine when specific courses are offered.

#### Fall Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>URP:6265</td>
<td>Planning Sustainable Transportation</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>URP:6266</td>
<td>Transportation and Land Use Planning</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>URP:6268</td>
<td>Freight Transportation Planning</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>URP:6269</td>
<td>Transportation Program Seminar</td>
<td>1 s.h.</td>
</tr>
</tbody>
</table>

#### Spring Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>URP:4195</td>
<td>Public Transit Operations and Planning</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>URP:4262</td>
<td>Transportation Demand Analysis</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>
URP:6260 Transportation Policy and Planning 3 s.h.
URP:6264 Transportation Planning Process 2-3 s.h.

Urban and regional planning students may apply to the certificate program through the Graduate College and the School of Urban and Regional Planning. See Urban and Regional Planning (p. 963) (Graduate College) for information about graduate study and degree requirements in the school.
Urban and Regional Planning

**Director**
- Charles E. Connerly

**Graduate degrees:** M.A. in urban and regional planning; M.S. in urban and regional planning

**Faculty:** http://urban.uiowa.edu/faculty-and-staff

**Web site:** http://urban.uiowa.edu/

Urban and regional planning encompasses the development and implementation of public policies that improve the quality of life in cities and regions. Today's planners find themselves in demand for such diverse jobs as sustainability coordinator and planner, environmental analyst with a natural resources agency, land use planner, transportation planner, community development planner, community organizer, economic development planner, recycling coordinator, planning director, neighborhood planner, state legislative analyst, planning consultant, and nonprofit project manager or director.

**Graduate Programs of Study**
- Master of Arts in urban and regional planning
- Master of Science in urban and regional planning

The Master of Arts and Master of Science are two-year degree programs fully accredited by the Planning Accreditation Board. Each is built on the premise that planners must be educated in methods of policy analysis and that there is a common body of knowledge, represented in the core curriculum, that provides a solid foundation for all specializations in the field.

A wide range of educational backgrounds provide good preparation for graduate study in urban and regional planning. Students with undergraduate majors such as geography, economics, English, political science, engineering, architecture, sociology, urban studies, and history currently study in the school. More than 50 full-time students and a few part-time students are enrolled. About half of them are women, and about 10 percent are international students.

The common core of courses and the design of the facilities allow students to get to know each other quickly. Students interact closely with faculty members in the classroom, in informal conversation, and while working on research projects.

Recent graduates of the school have taken positions with city, metropolitan, and regional planning agencies, state and federal government, nonprofit organizations, and private consulting firms. They work in all geographic regions of the United States and in countries around the world.

Graduate students working toward a master's degree in urban and regional planning may elect to pursue one of the joint degree programs offered by the school in collaboration with the College of Engineering, the College of Law, the College of Public Health, and the School of Social Work. The school also participates in the Transportation Studies Program, which offers a graduate certificate. See "Joint Degrees" and "Related Certificate: Transportation Studies" below.

**Master of Arts, Master of Science**

The Master of Arts and Master of Science programs in urban and regional planning require 50 s.h. of graduate credit. The graduate curriculum is based on the philosophy that planners must develop the theoretical and analytic skills that will permit them to analyze social problems and evaluate public policies. Planners also must cultivate professional skills such as report writing, oral presentation, computer use, and team management in order to work effectively in various organizational and political environments.

Work for the master's degree includes core courses, an area of concentration, electives, and capstone courses. A final examination is required for both degrees. A thesis is not required, although students may petition to write one. Students are encouraged to complete an approved internship or practicum.

All students must complete a minimum of 38 s.h. of planning courses (prefix URP). Students must earn a grade of B-minus or higher in all core and concentration area courses and must maintain an overall graduate g.p.a. of at least 3.00.

The M.A. and M.S. in urban and regional planning require the following work.

**CORE CURRICULUM**

The core curriculum helps students develop an understanding of the institutions—social, economic, political, administrative, and legal systems—that provide the context for policy analysis and that constrain public choices. It also promotes development of the ability to identify social goals and normative criteria for evaluating public policies, as well as the analytic skills to perform such investigations.

The core requires a total of 23 s.h., including at least 3 s.h. in an advanced economic methods course. The advanced economics methods course usually is taken during the first three semesters. Early core courses are drawn primarily from traditional disciplines, particularly economics and statistics, and include an introduction to land use planning and to theories and practice of planning. As students proceed through the curriculum, increasing emphasis is placed on the development of critical judgment and insight, achieved through the application of theory and methods to realistic planning problems and case studies.

The core curriculum includes the following courses; students may request a waiver of selected core courses on the basis of previous course work.

- **URP:6200 Analytic Methods in Planning I** 3 s.h.
- **URP:6201 Analytic Methods in Planning II** 3 s.h.
- **URP:6202 Land Use Planning: Law and Practice** 4 s.h.
- **URP:6203 History and Theories of Planning** 3 s.h.
- **URP:6205 Economics for Urban Planners** 3 s.h.
- **URP:6208 Program Seminar in Planning Practice** 1 s.h.
- **URP:6258 Modeling Dynamic Systems** 3 s.h.

Advanced economic methods—at least one of these:

- **URP:6233 Financing Local Government** 3 s.h.
- **URP:6290 Economic Impact Assessment** 3 s.h.
CONCENTRATION AREA
Beginning in the second semester, students choose a concentration area and develop it by applying the concepts and skills developed in the core. Currently, the school's faculty and course offerings support five concentration areas: transportation planning, housing and community development, economic development, land use and environmental planning, and geographic information systems.

Students complete at least 9 s.h. of courses in their concentration area. Courses offered by other University departments and programs may supplement those offered by the School of Urban and Regional Planning.

Students may combine two concentration areas. Examples of combined areas are environmental and economic development planning, and transportation and community development planning. Students also may design other concentration areas, subject to faculty approval. For example, they may specialize in health services planning with appropriate course work in the Department of Health Management and Policy or Occupational and Environmental Health, or in human services planning with courses in the School of Social Work.

CAPSTONE COURSES
Students complete the following two capstone courses, usually during the third and fourth semesters. Students who complete a practicum are exempt from this requirement.

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>URP:6209 Field Problems in Planning I</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>URP:6210 Field Problems in Planning II</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

INTERNSHIP
Students are encouraged to complete an internship in a planning agency or related organization. To earn 2 s.h. of credit for the internship, students must submit a brief paper summarizing and evaluating their experience. Internships usually are paid staff positions and are completed during the summer between the first and second years or during the academic year.

PRACTICUM
An extended internship, consisting of at least five months of full-time employment in a planning-related organization, may qualify as a practicum. A practicum generally takes place during summer after the first year and into the fall semester of the second year. It carries 5 s.h. of credit and substitutes for the internship and the capstone courses.

THESIS
A thesis is not required, although students may petition to write one. Students may register for up to 6 s.h. of thesis credit. In addition, they may take up to 8 s.h. of readings to develop a thesis topic and prepare a literature review.

FINAL EXAM
A final examination is required for all M.A. and M.S. students. An oral exam constitutes the final exam for students who do not write a thesis.

TYPICAL MASTER'S DEGREE SCHEDULE
First semester:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>URP:6200 Analytic Methods in Planning I</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>URP:6202 Land Use Planning: Law and Practice</td>
<td>4 s.h.</td>
</tr>
</tbody>
</table>

Second semester:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>URP:6203 History and Theories of Planning</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>URP:6205 Economics for Urban Planners</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>URP:6208 Program Seminar in Planning Practice</td>
<td>1 s.h.</td>
</tr>
</tbody>
</table>

Third semester:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>URP:6209 Field Problems in Planning I</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>URP:6258 Modeling Dynamic Systems</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>Electives and area of concentration courses</td>
<td>6-9 s.h.</td>
</tr>
</tbody>
</table>

Fourth semester:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>URP:6210 Field Problems in Planning II</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>Electives and area of concentration courses</td>
<td>9 s.h.</td>
</tr>
</tbody>
</table>

Joint Degrees
The School of Urban and Regional Planning participates in several joint degree programs, in which students work toward an M.A. or M.S. in urban and regional planning at the same time they work toward another degree. Joint degree programs enable students to earn both degrees in less time than it would take to earn the two degrees separately. The following joint degree programs are available.

Joint B.S.E. in civil engineering/M.A. or M.S. in urban and regional planning; see Bachelor of Science in Engineering (p. 841) and Civil and Environmental Engineering (p. 871) (College of Engineering) for information about the Bachelor of Science in Engineering.

Joint J.D./M.A. or M.S. in urban and regional planning; see College of Law (p. 969) for information about the Juris Doctor.

Joint M.H.A./M.A. or M.S. in urban and regional planning; see Health Management and Policy (p. 1166) (College of Public Health) for information about the Master of Health Administration.

Joint M.S. in occupational and environmental health/ M.A. or M.S. in urban and regional planning; see Occupational and Environmental Health (p. 1180) (College of Public Health) for information about the Master of Science in occupational and environmental health.

Joint M.S.W./M.A. or M.S. in urban and regional planning; see Social Work (p. 572) (College of Liberal Arts and Sciences) for information about the Master of Social Work.

Requirements for each joint degree program can vary, but urban and regional planning requirements in each program include completion of at least 39 s.h. in School of Urban and Regional Planning courses (prefix URP), with all core, capstone, and required courses: 9 s.h. of a concentration; and the master’s degree final examination. In all cases, joint degree programs require at least 60 s.h. of credit.

Students who wish to enter a joint degree program must apply to each of the two degree programs separately; they
must be admitted to both programs before they may be admitted to the joint program. Contact the admissions coordinator at the School of Urban and Regional Planning for more information about joint degree programs.

**Related Certificate:** Transportation Studies

The Transportation Studies Program offers the Certificate in Transportation Studies, which requires 18 s.h. of graduate credit. The program focuses on the varied and complex problems of transportation and on interdisciplinary approaches to addressing them. The Departments of Civil and Environmental Engineering, Mechanical and Industrial Engineering, and Geographical and Sustainability Sciences and the School of Urban and Regional Planning participate in the program, which is administered by the Graduate College and the University's Public Policy Center. See Transportation Studies (p. 961) (Graduate College) in the Catalog for more information about the certificate.

**Admission**

Admission to the School of Urban and Regional Planning is open to students from any undergraduate major or concentration area.

Applicants must meet the admission requirements of the Graduate College; see the Manual of Rules and Regulations of the Graduate College.

Admission is based on Graduate Record Examination (GRE) General Test scores (verbal, quantitative, and analytical writing), letters of recommendation, previous academic performance, and a written statement of purpose. International applicants whose first language is not English are required to submit official TOEFL scores.

Applicants should submit an application form, GRE General Test scores, TOEFL score (for students whose first language is not English), recommendation letters, statement of purpose, and transcripts. For fall admission, applications should be submitted to arrive early in the year (preferably by January 15), although applications are accepted until July 15 (April 15 for international students). Applications for spring admission should be received by October 1 and no later than December 1. Fall admission is strongly preferred. Students applying for financial aid should submit their materials by January 15.

**Financial Support**

Students in the School of Urban and Regional Planning receive financial support from the program primarily from teaching or research assistantships and from contract or grant-funded assistantships. Assistantships typically require 10 hours of work per week under the direction of a faculty member. A few full or partial tuition scholarships also are available.

Students initiate applications for financial support, and awards are made on the basis of merit, experience, and interests. Assistantships may be renewed for a total of up to four semesters.

Students applying for financial support are encouraged to submit application materials and requests for support by January 15. Students who apply after that date are considered only as remaining funds permit. Financial support usually is not available for students beginning the program in the spring semester.

**Courses**

**URP:3001 Planning Livable Cities** 3 s.h.

Development of livable cities in the United States; economic, physical, environmental, and political forces that shape their growth; impact of planning, how it shapes the future of cities. Same as GEOG:3920.

**URP:3134 Regional and Urban Economics** 3 s.h.

Theory of location and regional development; central place theory; why cities exist and trade with one another; models of land use patterns, rents; empirical tests of models; policy applications. Prerequisites: ECON:1100 and ECON:1200. Same as ECON:3640.

**URP:3135 Environmental and Natural Resource Economics** 3 s.h.

Environmental and resource use problems; efficient mechanisms and other policies for environmental protection, management of common property resources. Prerequisites: ECON:1100 and ECON:1200. Same as ECON:3625.

**URP:3136 Development of Local and Regional Economies** 3 s.h.

Theories, methods, and public policy in regional economic development; business and industrial locations, theories of regional growth and development, tools for regional economic analysis, technology and knowledge economy, globalization and trade, economic development finance and policy. Recommendations: introductory microeconomics. Same as ECON:3610.

**URP:3350 Transportation Economics** 3 s.h.

Overview of transportation markets—intercity, rural, urban; transportation modes—rail, highway, air, water, pipeline, transit; issues in finance, policy, planning, management, physical distribution, and environmental, economic, and safety regulation. Recommendations: ECON:1100 and ECON:1200. Same as GEOG:3940, ECON:3750.

**URP:4150 Water Resource Economics** 3 s.h.

Common world water scarcity and water quality issues; economics that provide valuable insights and tools and help contribute solutions to problems; surface water allocation, ground water allocation, surface water quality issues derived from point and nonpoint source pollutants, and water demand; linear and nonlinear programming, cost-benefit analysis, regression analysis (emphasis on maximum likelihood estimation), and cost avoidance techniques.

**URP:4170 Megacities Seminar** 1-3 s.h.

Global historical, political, economic, urban, and cultural aspects of megacity development; planning methods to address contemporary and emerging issues; critical analysis of peer-reviewed literature and computational simulations; topics include urban sprawl, poverty and inequality, economies, food scarcity, population growth, governance models, environmental and health concerns, sustainability.
URP:4195 Public Transit Operations and Planning 3 s.h.
Bus, light and heavy rail, and paratransit modes; transit operations, planning, modeling and optimization, transit agency economics, transit finance, and evolving transportation policy; skills essential to planners and engineers who intend to work for a either planning agency, transportation provider, or a transportation or planning consulting firm; individual and group projects involving transit operations. Requirements: undergraduate or graduate standing in engineering, or graduate standing in urban and regional planning. Same as CEE:4167.

URP:4262 Transportation Demand Analysis 3 s.h.
City planning procedures and traffic engineering techniques applied to transportation problems; trip generation, distribution, assignment, mode choice models; travel surveys, data collection techniques; arterial flow, intersection performance, parking; transit system analysis. Same as CEE:4176.

URP:4750 Environmental Impact Analysis 4 s.h.
Environmental impact assessment methodologies; emphasis on cost-benefit-risk, cost-effectiveness and incremental analysis, and overlay and graphic techniques; optimal resource use, system simulation; field trips to local environmental control facilities. Prerequisites: GEOG:1070. Same as GEOG:4750.

URP:6063 Application Simulation to Transportation 3 s.h.
Transportation system management and traffic engineering; application of real-time simulation and visualization. Prerequisites: CEE:3763 or CEE:4763. Same as CEE:6763.

URP:6200 Analytic Methods in Planning I 1-3 s.h.
Methods used in planning and policy analysis; emphasis on application of statistical techniques and quantitative reasoning to planning problems; use of computers and data systems in planning analysis.

URP:6201 Analytic Methods in Planning II 2-3 s.h.
Integration of methods with the planning process; application of multiple regression, population estimation and projection, survey methods, time series analysis, industrial growth and change; presentation of results to decision makers and the public. Prerequisites: URP:6200.

URP:6202 Land Use Planning: Law and Practice 4 s.h.
Legal, social foundations of land use planning; comprehensive planning, zoning and subdivision review; legal aspects of land use, environmental planning; ordinance drafting; staff report writing; citizen participation.

URP:6203 History and Theories of Planning 3 s.h.
History of urban planning in America as a reflection of social and economic forces; alternative planning philosophies, roles, and ethical choices open to planners. Same as HIST:6203.

URP:6205 Economics for Urban Planners 3 s.h.
Principles of economics for planners; concepts and techniques of microeconomic analysis; income inequality; the role of government in the economy; tax and pricing policy; project evaluation; externalities.

URP:6208 Program Seminar in Planning Practice 1 s.h.
Planning process, roles of planners, professional ethics and standards.

URP:6209 Field Problems in Planning I 3 s.h.
Experience working on a two-semester project involving a current planning issue, usually for a client. Requirements: urban and regional planning graduate standing.

URP:6210 Field Problems in Planning II 3 s.h.
Continuation of URP:6209. Prerequisites: URP:6209. Requirements: urban and regional planning graduate standing.

URP:6211 Community Outreach Practicum 1-3 s.h.
Application of planning skills to community work by non-profit organizations in local area; urban planners contributing to their communities; community outreach.

URP:6216 Conflict, Negotiation, and Planning 3 s.h.
Conflict within communities, and planners' responses; networking, negotiating, mediating, coalition building, consensus building; case studies, role playing.

URP:6222 Urban Design for Non-Designers 3 s.h.
Principles of urban design and the importance of good, well thought out urban design; background in urban design for policy planners and non-designers; past, present, and future of urban design.

URP:6225 Applied GIS for Planners 3 s.h.
Analysis of Census of Population data using GIS software; data and analytical needs of urban planners; coverage of GIS topics to plan functions of GIS and spatial analysis, varied GIS software in a planning organization; structure of the Census.

URP:6227 Spatial Analysis in Planning 3 s.h.
Data bases, GIS, planning support systems; spatial model building and use of spatial statistics; applications to substantive problems in transportation, environment, housing, economic development. Prerequisites: URP:6225.

URP:6228 GIS for Local Government 1 s.h.
Development, maintenance, and operation of an enterprise-wide Geographic Information System (GIS); implementation of a parcel-based data system model common to government entities; practical experience using data for land-use planning analysis.

URP:6229 Practicum 5 s.h.
Full-time internship of at least five months with a planning-related organization. Requirements: urban and regional planning graduate standing.

URP:6230 Virtual Reality and Urban Development 3 s.h.
Creation of terrain models from DEMs and CAD-based site plans, panoramas, incorporation of existing and proposed buildings into virtual reality models; use of VRML and presentation strategies, including digital movies.

**URP:6233 Financing Local Government** 3 s.h.
Financing of local government infrastructure through property taxes, bonding, impact fees, pricing, tax increment financing; institutional alternatives—downtown improvement districts, special districts, homeowners’ associations; fiscal disparities and regional finance; case studies. Prerequisites: URP:6205.

**URP:6235 Geodatabases and GIS** 1 s.h.
Geodatabase implementation in the management of large GIS data sets. Prerequisites: URP:6225.

**URP:6242 Planning and City Administration** 1 s.h.
Relationship of planners and other local government personnel; how planning fits into city management; city management view of local political process, provision of city services, finance and budgeting, human resources, intergovernmental relations, how meetings are run, dealing with the public.

**URP:6243 The Land Development Process** 3 s.h.
How land is developed; analysis of site suitability, preparation of subdivision plan, site plan review, development approval process, infrastructure and site preparation, negotiating local development politics; field trips. Prerequisites: URP:6202.

**URP:6245 Growth Management** 3 s.h.
Causes and consequences of urban sprawl, shortfalls in conventional land use planning; local and state growth management policies, techniques of policy implementation, positive and negative impacts of such policies; Smart Growth; emerging challenges. Prerequisites: URP:6202.

**URP:6249 Sustainability Seminar** 1 s.h.
Focus of increasing interest for planning students and practicing planners; involves environmental effects, economy, social justice; discussion and investigation of sustainability practice applied to local and regional efforts of public and private entities; greater awareness and understanding of the effectiveness and resource requirements of local activities addressing sustainability; presentations by the instructor, local tours, guest lectures.

**URP:6253 Healthy Cities and the Environment** 3 s.h.
Foundations of environmental planning for healthy cities and communities; how urban form, air and water quality, and natural hazards affect environmental planning and health.

**URP:6256 Environmental Policy** 3 s.h.
Environmental policy formation and politics; comparative international perspective on the United States’ experience.

**URP:6257 Environmental Management** 3 s.h.
Environmental best management practices for sustainable management of natural resources; open space and habitat protection, prairie and wetland restoration, water supplies management, natural hazard mitigation, farmland protection.

**URP:6258 Modeling Dynamic Systems** 3 s.h.
Nonlinear dynamics in human-environment relationships; quantitative modeling of global environment processes; environment modeling for policy and land use planning; introduction to fundamentals of linked global-scale environment processes from a systems perspective, focus on historical and contemporary role of human activities in altering flows of energy and mass within the Earth system; hands-on simulation and group games to understand feedback loops in complex systems, with applications to land use, water, climate, ecosystems, and nutrient cycles across time and spatial scales; emphasis on quantifying effects of policies and planning on environmental change.

**URP:6260 Transportation Policy and Planning** 3 s.h.
Institutional setting for transportation planning, evolution of domestic transportation policy, international influences, transportation modes and markets, current sources of transportation planning information, emerging policy issues.

**URP:6264 Transportation Planning Process** 2-3 s.h.
Technical issues, political interface, citizen involvement, intermodal questions, public versus private roles; review and critique of transportation plans.

**URP:6265 Planning Sustainable Transportation** 2-4 s.h.
Theories and methods of exerting public control over passenger and freight transportation; social and environmental regulation; effects of changing finance, regulation, and pricing policies, including privatization, tolls, impact fees. Same as GEOG:6264.

**URP:6266 Transportation and Land Use Planning** 3 s.h.
Policies and interactions between transportation and land use; location theories and practices; transportation infrastructure, land use, travel behavior modeling; current policies that influence travel behavior and urban form.

**URP:6268 Freight Transportation Planning** 3-4 s.h.
Freight transportation planning in the United States; surface modes, primarily trucking and rail, as well as trade-offs in bulk movements by inland waterways and pipelines; comparison with recent developments in policy, planning, and practice for surface transportation in other developed economies (e.g., Europe).

**URP:6269 Transportation Program Seminar** 1 s.h.
Transportation finance, safety and economic regulation, planning processes, management, government policy issues at federal, state, and local levels.

**URP:6271 Housing Policy** 3 s.h.
Recent housing policy initiatives at federal, state, and local levels.
URP:6273 Community Development
Community Development Corporation involvement in housing and neighborhood revitalization; infill housing development and preservation; comprehensive community development initiatives.

URP:6277 Affordable Housing Finance
Financing development or rehabilitation of affordable housing; low-income housing tax credits, the housing finance system and current regulatory issues, mortgage discrimination, improving financing for rental housing.

URP:6278 Nonprofit Organizational Effectiveness I

URP:6279 Nonprofit Organizational Effectiveness II

URP:6280 Planning for Disaster Mitigation and Recovery
Types of disasters that communities face; what role planners play, what role should they play; importance of hazard mitigation and planning for post-disaster recovery; where planners' unique skills play the most significant roles in aiding a community to redesign a safer future.

URP:6282 Grant Writing
Same as SSW:6282.

URP:6284 Green Building and LEED
Preparation to earn LEED Green Associate professional credential; introduction to green building concepts and strategies as they relate to the United States Green Building Council's (USGBC) Leadership in Energy and Environmental Design (LEED) rating system.

URP:6290 Economic Impact Assessment
Economic impact and growth analysis, including economic base, income expenditure, input-output analysis; use of economic impact analysis in a cost-benefit context; industrial location and mobility theory with statistics applications. Prerequisites: URP:6205.

URP:6295 Economic Development Policy
Analysis of policies and programs at national, regional, state, and local levels that address problems of economic growth, development, decline.

URP:6297 Community Development Finance
Financial statements and small business finance; local revolving loan funds for small businesses; evaluation of loan proposals; community development agency financing of commercial redevelopment; case studies of community development lending. Prerequisites: URP:6205.

URP:6305 Readings

URP:6315 Independent Study in Planning
Research and analysis of a special planning problem; opportunity to apply knowledge in area of specialization.

URP:6320 Introduction to Graphic Communications
Visual communication techniques through use of print and digital media; how to graphically convey concepts and information to a variety of audiences; basic design principles to build a foundation in graphic communication; relationships between various software packages; advantages and shortcomings of various digital tools; development of professional graphic media that is beautiful and effective.

URP:6325 Thesis: Urban and Regional Planning

URP:6335 Internship
Work in a planning or related agency or nonprofit organization.

URP:6337 Poverty, Planning, and Public Policy
Interconnectedness of causes of poverty; operation and outcomes of federal and state antipoverty programs; impact of local planning policies and programs on low income population; ways in which planners in public agencies or advocacy organizations can work to alleviate poverty.

URP:6400 Eco-Sensitive, Low-Cost Housing: The Kerala Experience
Though quality housing is a basic human need, families worldwide don't have it; significant socioeconomic, physical, and financial problems; scale of housing shortage greater in developing countries where governments and nonprofits are forced to devise ingenious, eco-sensitive, lower-cost development techniques; opportunity to visit India and learn about many such innovations; challenges of economic development, environmental protection, culture, politics, and uneven geography of opportunity in a developing country.
College of Law

Dean
- Gail B. Agrawal

Associate deans
- Eric G. Andersen, Arthur E. Bonfield, Carin N. Crain, Marcella David, Linda A. McGuire, Todd E. Pettys

Assistant deans
- Collins B. Byrd, Gordon S. Tribby

Executive librarian
- Katherine Hall

Undergraduate certificate: human rights
Professional degrees: J.D.; LL.M.; M.S.L.; S.J.D.
Faculty: http://law.uiowa.edu/faculty-and-scholarship/
faculty-bios-and-expertise
Web site: http://law.uiowa.edu/

The University of Iowa College of Law is the oldest law school west of the Mississippi River. Founded in 1865 as the Iowa Law School, the college is a charter member of the American Association of Law Schools and an American Bar Association-approved law school.

One of 11 colleges at the University of Iowa, the College of Law is part of Iowa City's unique cultural community. Students, faculty, and staff work together in a friendly, relaxed, and productive environment that puts students' needs first.

Longstanding commitment to inclusion and diversity is a source of pride for the College of Law, which was one of the first schools in the nation to grant a law degree to a woman (1873) and to an African-American (1879). Diversity is central to the college's educational philosophy and to its core mission of preparing culturally proficient graduates who are capable of intellectual inquiry, critical and reflective thinking, and engagement.

Learn more about the College of Law's history and its commitment to diversity and inclusion by visiting About Us, Milestones, and Diversity at Iowa Law on the college's web site.

The college is at home in the Boyd Law Building, whose facilities were designed specifically for the school's essential activities and services: classes and meetings, study and research, student-faculty interactions, clinical law and cocurricular programs, student organizations, writing resources, career consultation, and more. The University of Iowa Law Library has one of the largest collections of legal materials in the country, with an exceptional research collection of print and electronic resources relating to U.S. domestic law as well as international, foreign, and comparative law. Ample study space and wireless Internet access are available throughout the library. See "Boyd Law Building" and "University of Iowa Law Library" under "Facilities and Resources" later in this Catalog section.

Iowa's challenging law school curriculum carefully balances substantive courses, perspective offerings, examination of ethical values and professionalism, and skills-training programs, including a highly active in-house legal clinic. The college's 8.4-to-1 student-faculty ratio and the faculty's open-door policy ensure that students have opportunities for interaction and collaboration with their law professors.

The college's writing program—one of the strongest among law schools nationwide—is integral to all students' academic experience. During both semesters of their first year, students take a small-section course in legal analysis, writing, and research. During the second and third years, they complete four additional writing units. Among opportunities for completing the writing requirement is work on one of the law school's four student-run scholarly journals: Iowa Law Review, Journal of Corporation Law, Journal of Gender, Race & Justice, and Transnational Law & Contemporary Problems.

The Writing Resource Center supports and builds upon classroom writing instruction and assists students with a broad range of writing tasks. The center and the writing program as a whole exemplify the law school's personalized attention and dedication to individual learning.

The College of Law offers a strong program of study in the rapidly expanding fields of international and comparative law. In addition to promoting broad social awareness and technical professional competence, the study of international and comparative law provides a theoretical foundation essential for all lawyers by affording unique insight into the nature of law and legal process. It is crucial preparation for lawyers who engage in formulating public policy at all levels of society. It also provides a solid understanding of international law and foreign legal systems, which is fundamental for effective lawyers in an era of global interdependence.

Highlights of the college's international and comparative law program are the Master of Laws (LL.M.) degree program (see "Master of Laws" later in this Catalog section), work on the Journal Transnational Law & Contemporary Problems, and participation in the Philip C. Jessup International Moot Court Competition. Students also have opportunities for work related to international and comparative law at the University of Iowa Center for Human Rights and in student groups such as the International Law Society.

Over the years, the college has enjoyed great success in preparing women and men to be professional and civic leaders. In the 20th century, Iowa graduates served as U.S. senators and representatives; state governors; federal and state judges; and presidents of the American Bar Association, major universities, and some of the country's largest corporations. Iowa also has been a leader in preparing American law teachers. The college is resolved to continue its traditional role of training future lawyers for positions of professional and community leadership in the 21st century.

Undergraduate Program of Study

The undergraduate Certificate in Human Rights is administered and awarded by the College of Law. For a description of the program, see University of Iowa Center for Human Rights (p. 1003) in the Catalog.

Professional Programs of Study
- Juris Doctor
- Master of Laws
The College of Law collaborates with a variety of University of Iowa graduate programs to offer joint J.D./graduate degree programs. See "Joint J.D./Graduate Degrees" later in this section.

Juris Doctor
The Juris Doctor (J.D.) degree requires 84 s.h. of credit. Entering first-year students must take all first-year courses and may not register for different courses or fewer semester hours without the dean of students' permission. No student may enroll during any fall or spring semester for more than 15 s.h., or during any two adjacent summer sessions for more than 12 s.h., of credit that will be applied to the J.D. degree.

To be eligible for a J.D. degree, a student must:
- receive course credit for 84 s.h., including no more than 6 s.h. earned in cocurricular or non-law courses or activities;
- take and complete all required courses;
- satisfy the writing requirement;
- complete the course of study required for the degree in no fewer than 27 months and no more than 84 months after beginning law study at the College of Law or at a law school from which transfer credit has been accepted;
- achieve a cumulative g.p.a. of at least 2.10; and
- satisfy the requirement of receiving "substantial instruction in other professional skills generally regarded as necessary for effective and responsible participation in the legal profession," as set forth in the American Bar Association's Accreditation Standard 302(a)(4) and Standard Interpretations 302-2 and 302-3.

Receiving credit in a course is dependent upon successful completion of a final examination and any assigned work. Students must satisfy all requirements established by the instructor for class attendance, written work, special readings, oral reports, and so forth in order to take the final exam.

Full-time policy: The faculty believes that students receive a better legal education when they devote substantially all of their time to educational pursuits. For this reason, students are expected to pursue their law training on a full-time basis. This policy is consistent with the accreditation standards of the American Bar Association and the Association of American Law Schools. In extraordinary circumstances, it may be possible for students to enroll for fewer than 10 s.h. per semester. Students who believe they may be unable to attend full time should contact the dean of students before registering for classes.

Entrance date: Students enroll in late August, at the beginning of the fall semester. All students attend courses full time during fall and spring semesters and may attend the summer term at any point during their academic careers. Entrants may expect to graduate no earlier than 27 months after beginning law study.

Admission to the Iowa Bar: A rule adopted by the Iowa Supreme Court requires each individual who intends to apply for admission to the Iowa Bar by examination to register with the Iowa Board of Law Examiners and to pay related fees. See Filing Fees and Deadlines on the Iowa Bar Exam web site. Additional details are available from the College of Law registrar or the clerk of the Iowa Supreme Court.

FIRST-YEAR CURRICULUM
The first-year curriculum emphasizes development of analytical skills, a sense of the role of legal institutions in society, and essential writing skills. Each course in the first-year curriculum shares these emphases and conveys substantive knowledge about a particular area of the law. Four courses during the first year are small-section courses. Two of the four (one each semester) cover traditional first-year subjects—civil procedure, constitutional law, contracts, criminal law, property, torts; they usually enroll no more than 40 students each. The other two are LAW:8032 Legal Analysis Writing and Research I (first semester) and LAW:8033 Legal Analysis Writing and Research II (second semester), which usually have an enrollment of approximately 20 students each.

First-year students take the following courses.

<table>
<thead>
<tr>
<th>Fall semester</th>
<th>Spring semester</th>
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</thead>
<tbody>
<tr>
<td>LAW:8017 Contracts</td>
<td>LAW:8006 Civil Procedure</td>
</tr>
<tr>
<td>LAW:8026 Introduction to Law and Legal Reasoning</td>
<td>LAW:8010 Constitutional Law I</td>
</tr>
<tr>
<td>LAW:8032 Legal Analysis Writing and Research I</td>
<td>LAW:8022 Criminal Law</td>
</tr>
<tr>
<td>LAW:8037 Property</td>
<td>LAW:8033 Legal Analysis Writing and Research II</td>
</tr>
<tr>
<td>LAW:8046 Torts</td>
<td>Elective</td>
</tr>
</tbody>
</table>

The two-semester sequence LAW:8032 and LAW:8033, called Legal Analysis Writing and Research (LAWR), is designed to equip students with effective skills in legal analysis, writing, and oral communication (oral advocacy), and research.

LAWR develops students' legal analysis skills throughout the year in connection with every assignment. Analytical skills include the ability to spot legal issues in a fact pattern; to identify legally relevant facts; to synthesize legal rules, principles, policies, and purposes found in the legal materials (e.g., precedents and statutes); and to understand and formulate legal arguments of different kinds.

LAWR develops students' legal writing and oral advocacy skills. Legal writing centers on effectively communicating the legal analysis of a practical problem, whether the purpose is to predict what a court or other decision maker will do, to persuade someone to agree with the writer's conclusions, or to decide a case and explain the decision. Oral advocacy skills center on using legal analysis to persuade someone, such as a judge, to reach a particular conclusion.
LAWR develops legal research skills. Legal research supports legal analysis primarily by identifying the legal materials, especially legal authorities, that form the basis of effective legal arguments and legal conclusions.

Students are expected to achieve the following objectives during the two-semester LAWR sequence:

- acquire the fundamentals of legal reasoning and analysis, including case analysis, fact analysis, application of law to facts, case synthesis, and analogizing and distinguishing cases;
- learn how to identify a legal problem and resolve it, as well as how to determine which facts in a fact pattern are legally significant;
- learn how to generate arguments and counterarguments;
- develop and employ basic research skills within a limited universe of research tools in order to locate cases and statutes from citations, to find cases on a given subject, to determine the present status of a case, and to exercise judgment in selecting the most appropriate cases from a larger pool of cases (first semester);
- develop and employ a full range of research skills through assignments that place no limitations on the type of research necessary for their completion (second semester);
- develop the ability to write legal documents, including objective memorandums and persuasive briefs, that are clear, concise, analytically sound, and well organized;
- become familiar with how to cite legal authorities properly and learn the appropriate style, tone, and diction for legal writing, depending on the audience;
- write an appellate brief;
- learn argumentative and persuasive legal writing; and
- craft and present a persuasive oral argument.

SECOND- AND THIRD-YEAR CURRICULUM

All students complete three specific required courses plus required writing units during the second and third years. Beyond that, they plan their own course of study for the two years, drawing from a rich menu of mainstream, specialized, clinical, and perspective courses. Second- and third-year courses, most of which can be completed in courses (including seminars and clinical programs) or through independent research in which there is direct, ongoing faculty supervision.

Juris Doctor 3 + 3

The College of Law 3 Plus 3 Program allows eligible undergraduates at partner institutions to apply to law school in their junior year. Students admitted under the program fulfill their senior year of undergraduate work through the successful completion of their first year law school courses, allowing them to graduate with both a bachelor's degree and a law degree in just six years, which amounts to a year of tuition and related cost savings.

APPLICATION REQUIREMENTS

Applicants must be in their junior year at an undergraduate institution with which the College of Law has a 3 Plus 3 agreement, and must meet their undergraduate institution's criteria for eligibility. Each undergraduate institution determines which majors and programs are eligible for participation.

In addition to being an eligible junior at one of the College of Law's partner institutions, applicants must take the Law School Admissions Test (LSAT), complete the law school application, and submit a Certificate of Eligibility Form from their current institution. Candidates are considered alongside the University of Iowa College of Law's regular pool of applicants.

Applicants to the 3 Plus 3 program are encouraged to take the LSAT in October or December and apply in January after their fall grades are available. Later applications, including those who took the LSAT in June, also will be considered.

International Juris Doctor

The University of Iowa College of Law offers a two-year J.D. program for foreign-trained lawyers.

This program gives students who have successfully completed a legal education outside the United States the opportunity to obtain the same degree in two years for which American students are required to complete in three years. Moreover, if foreign-trained law students are eligible for a research assistant position during the second year of the program, the total tuition costs amount to almost half of the tuition paid by American out-of-state students.

Compared to the one-year Master of Laws (LL.M.) program, the two-year Juris Doctor program offers the following advantages:

- eligibility to take the bar exam in any state of the United States;
- first-rate training in legal writing and legal research;
- complete integration with American students and total immersion into a foreign language for two years; and
- the first-year of the curriculum provides students with a firm foundation in American law (property, torts, contracts, constitutional law, criminal law, civil procedure), including legal writing and research, while the second year provides an opportunity to focus on elective course work relevant to their personal and practical interests.

REQUIREMENTS

Applicants can are eligible apply to the program if they are a lawyer, with a degree allowing them to practice law, or if
they have completed at least three years of legal studies before matriculating at Iowa. Applicants must be from an institution where their degree has accreditation within their country similar to accreditation by the American Bar Association.

**Course of Study Options for J.D. Students**

The College of Law offers numerous programs and opportunities that students may draw upon when planning their course of study.

**INTERNATIONAL AND COMPARATIVE LAW**

The college's international and comparative law program is supported by more than a dozen faculty members who maintain significant teaching and research interests in the field. The program features an extensive selection of courses and related academic opportunities; opportunities for study abroad; an innovative journal edited by students and faculty members; and several centers where research in international and comparative law is conducted. The Master of Laws (LL.M.) program draws scholars and visiting professors from around the world.

Additional resources include the Law Library, which maintains holdings of more than 280,000 volumes of international, comparative, and foreign law and a complete United Nations document collection on microfiche; and programming offered across the University by the UI International Programs office.

To learn more, see “Master of Laws” below and visit International and Comparative Law Program on the college's web site.

**INNOVATION, BUSINESS, AND LAW**

The innovation, business, and law program integrates intellectual property, antitrust, and corporate law to provide a range of academic opportunities for students interested in those disciplines. Visit Innovation, Business, and Law Center to learn more. Not all courses listed on the site are offered every year.

**CONCENTRATED AREAS OF STUDY**

Students may pursue their interest in a particular subject area by selecting appropriate coursework and independent research projects. For example, students interested in intellectual property and competition law may choose from the following courses.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>LAW:8146</td>
<td>Antitrust Law</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>LAW:8301</td>
<td>Copyrights</td>
<td>3-4 s.h.</td>
</tr>
<tr>
<td>LAW:8331</td>
<td>Business Associations</td>
<td>3-4 s.h.</td>
</tr>
<tr>
<td>LAW:8643</td>
<td>Introduction to Intellectual Property</td>
<td>3-4 s.h.</td>
</tr>
<tr>
<td>LAW:8647</td>
<td>Competition Policy and Innovation</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>LAW:8763</td>
<td>Patent Law</td>
<td>2-4 s.h.</td>
</tr>
<tr>
<td>LAW:8856</td>
<td>Securities Regulation</td>
<td>arr.</td>
</tr>
<tr>
<td>LAW:8954</td>
<td>Trademarks and Unfair Competition</td>
<td>2-4 s.h.</td>
</tr>
<tr>
<td>LAW:9429</td>
<td>Intellectual Property Advocacy</td>
<td>1-3 s.h.</td>
</tr>
<tr>
<td>LAW:9573</td>
<td>Cultural Property/Heritage</td>
<td>arr.</td>
</tr>
<tr>
<td>LAW:9863</td>
<td>Patent Prosecution Seminar</td>
<td>3-4 s.h.</td>
</tr>
</tbody>
</table>

**COLLEGE OF LAW SEMINARS**

Seminars may be available for up to 4 s.h., of credit. Seminar credit includes two writing units, but students may complete three writing units with the instructor's approval. Seminar formats vary widely; students should check the course descriptions and consult with the instructor before registering.

Many seminars last two semesters. The first semester (usually fall) is the class portion of the seminar; students earn 2 s.h. for a workload equivalent to that of a 2 s.h. course. During the second semester of the seminar (usually spring), students write their papers, earning the remaining credit for the seminar.

Some instructors offer seminars that do not follow the fall-class/spring-writing format. Students may be convened for the seminar as if they were a legislative drafting committee, or they may be required to complete substantial research, drafting, and writing work over the entire year. The amount of credit for the seminar may be flexible or determined by the class as a whole. Seminars using this format may have required attendance and no-drop policies; students are strongly encouraged to learn what will be expected of them before registering for these seminars.

Papers produced for seminars or independent research may be eligible for entry in competitions, sometimes with cash prizes. Competition announcements are posted at the Writing Resource Center.

**CLINICAL LAW PROGRAMS**

Students who have completed the equivalent of three semesters toward the J.D. (at least 39 s.h.) are eligible to apply their theoretical knowledge to real cases and projects under the supervision of faculty members and other attorneys through participation in the College of Law's Clinical Law Programs. Clinical law programs reflect the richness and diversity of modern law practice and the College of Law's commitment to clinical education. The clinical programs operate as areas of a law firm within the Boyd Law Building, giving students the opportunity to put their legal skills to use in a variety of practice areas and venues.

Student interns work on cases supervised by full-time faculty members in the in-house clinic. The interns have primary responsibility for representing their clients at all stages of the legal process, including interviewing and counseling, negotiation, fact investigation, depositions, drafting and briefing, and courtroom appearances. Each semester, most interns have an opportunity to argue cases before various state and federal trial or appellate courts or before administrative agencies. Students also provide basic estate planning, document drafting, and other transactional services to clients. In some projects, interns partner with grassroots organizations, nonprofits, businesses, and public officials to solve recurring and systemic problems that cannot be addressed adequately through litigation or traditional legal methods.

Practice areas include consumer rights, criminal defense, disability rights and policy, domestic violence, immigration, international human rights, juvenile court matters, and workers’ rights; see Practice Areas on the Clinical Law Programs web site.

**FIELD PLACEMENT PROGRAMS**

Iowa’s Field Placement Program offers high-quality educational experiences that involve students in the performance of legal work in government or nonprofit agencies, criminal prosecution or defense offices, state and federal judges’ chambers, international law offices
and agencies, and a limited number of private practice and corporate settings. In addition to earning credit for their fieldwork, students in field placements participate in a seminar or tutorial led by a faculty member, where they maximize the learning that they gain from the field experience.

Students may earn a total of 30 s.h. for field placement work, cocurricular course work (e.g., work on a journal, moot court, or other student-organized activity), and courses taken outside the College of Law (see ABA Standard 304, interpretation 304-B). The 30 s.h. total may include a maximum of 14 s.h. earned in field placements.

Students may apply a maximum of 20 s.h. earned in clinic, field placements, and non-College of Law courses, combined, toward the J.D. degree. They may apply a maximum of 15 s.h. earned in clinic and field placements, combined, toward graduation.

The College of Law also is involved in programs that do not offer academic credit. Each summer it participates in the County Attorney Internship Program, through which students work as paid employees for county attorneys throughout the state. The college also helps place students in a variety of unpaid clerkships and internships nationwide that provide insight into the workings of the legal system.

STUDY ABROAD

The College of Law administers a consortium of American law schools that offers a study abroad program at Florida State University’s London study center. Students spend spring semester at the center studying American and English law with faculty members from Iowa’s College of Law and the University of London. They may earn up to 15 s.h.: options include courses and an externship placement opportunity. Learn more about the program and how to apply at London Law Consortium.

Students may earn up to 8 s.h. of College of Law credit for intensive course work in Arcachon, France, for around four weeks in May and June. Courses are taught in English by College of Law professors and French instructors. Visit Summer Program in Arcachon, France to learn more about the program and how to apply.

The college participates in three exchange programs that permit students to earn 12-15 s.h. of credit through courses taught in English. Two students may attend the Universidade Católica Portuguesa School of Law (Lisbon campus) each fall semester; three students may attend Radboud University in Nijmegen, the Netherlands, during fall and spring semesters; and two students may attend the Peking University School of Transnational Law in Shenzhen, China. Learn more at the Católica University, Radboud University, and Peking University School of Transnational Law pages on the College’s Study Abroad web site.

LEARNING BEYOND THE CLASSROOM

In addition to the course of study options listed above, J.D. students have numerous opportunities to enhance and supplement their legal, learning, and professional skills outside the classroom setting. They may participate in the college’s cocurricular activities, which include four student-produced journals, Moot Court, and the Trial Advocacy Program. They also have access to opportunities and resources provided through the Academic Achievement Program, the Citizen Lawyer Program, and the Writing Resource Center. See "Academic Achievement Program," "Citizen Lawyer Program," and "Cocurricular Programs" below; see "Writing Resource Center" under "Facilities and Resources" toward the end of this Catalog section.

ACADEMIC ACHIEVEMENT PROGRAM

The College of Law Academic Achievement Program (AAP) helps students make the most of their potential by developing the academic skills they will need in order to succeed in law school. AAP services are open to all law students, with a special emphasis on helping first-year students as they make the transition from successful undergraduate careers to the unique challenges of law study. AAP counselors are available to meet one-on-one with students to discuss academic skills and strategies. AAP coordinates programs on legal study skills and exam taking as part of the 1L Core Series. In the spring semester, AAP convenes a voluntary small-group workshop series for first-year students. AAP also coordinates the First Year at Iowa (FYI) program, which connects incoming students with upperclass student leaders during orientation and throughout the first year.

CITIZEN LAWYER PROGRAM

The Citizen Lawyer Program (CLP) advances the College of Law’s teaching and service missions. CLP is a teaching platform that enables students to advance their development of knowledge, values, and skills central to law as a professional calling. By offering a wide variety of opportunities each year for pro bono work, community service, and programs focusing on the issues, skills, and values that are critical to personal and professional success, CLP extends legal education beyond classrooms and clinical programs while engaging students directly in serving the college’s mission of public service.

Cocurricular Programs

Students enrich their course of study by participating in the college’s cocurricular programs, which include Moot Court, the Trial Advocacy Program, and four student-produced journals. Students may apply a maximum of 6 s.h. earned in cocurricular programs and/or non-law classes toward the J.D. degree.

MOOT COURT

The Moot Court appellate advocacy programs familiarize students with writing appellate briefs, acquaints them with citation form, develops research skills, and strengthens persuasive ability in oral argument at the appellate court level.

Each academic year, the Moot Court office administers LAW:9010 Appellate Advocacy I in the fall semester and two Moot Court competitions in the spring semester. Students who rank in the top scoring positions of LAW:9010 are eligible for the advanced competitions in the spring semester. Advanced competitions include LAW:9021 Van Oosterhout Baskerville Moot Court Competition and LAW:9038 Jessup International Moot Court Competition.

The appellate advocacy program is administered by the Moot Court Board, which consists of student judges and an executive board.

TRIAL ADVOCACY

The Trial Advocacy Program is a student-run, faculty-supervised program in which students develop and refine skills used to prepare and try civil and criminal cases.
The heart of the program is LAW:9060 Trial Advocacy, a 2 s.h. course taught by law school faculty, and experienced trial attorneys. Students are on their feet during most class sessions, practicing the arts of jury selection, opening statement, direct and cross examination, introduction of exhibits, use of expert testimony, and closing argument. The course culminates with a full-scale trial—from the filing of pretrial motions to the rendering of a jury verdict—conducted by student cocounsel before a visiting judge and a jury of laypersons. The Stephenson Competition is named after Judge Roy L. Stephenson, a U.S. District Court and Eighth Circuit Court of Appeals judge and a 1940 graduate of the College of Law. Students who demonstrate superior ability in advocacy skills during the trial advocacy courses participate in a series of mock trials judged by local members of the bench and bar. Individuals selected from the competition represent the University of Iowa in the national trial competition.

**IOWA LAW REVIEW**

Since its inception in 1915, the *Iowa Law Review* has served as a scholarly legal journal, noting and analyzing developments in the law and suggesting future paths for the law to follow. Students have managed the review since 1935, editing and publishing articles by professors and students. The *Iowa Law Review* is published five times annually and is staffed by second-year student writers and third-year editors. Its subscribers include legal practitioners and law libraries throughout the world. The review also publishes the *Iowa Law Review Bulletin*, an online companion that features responses to the pieces published in the review. To learn more, visit the Iowa Law Review web site.

**JOURNAL OF CORPORATION LAW**

The *Journal of Corporation Law* is the nation’s oldest and most cited student-published legal periodical specializing in corporate law. The journal’s scope includes antitrust, intellectual property, labor law, securities, taxation, employment discrimination, insurance, products liability, and regulated industries, as well as traditional corporate topics. Selected articles submitted by practitioners and academics are published in each of four annual issues. Several student articles also are selected for publication. The journal enjoys a worldwide audience.

All students who have completed two semesters of class work are eligible to write for the journal. Students who have achieved third-year standing at the College of Law are eligible for selection to the journal’s editorial board and may receive additional academic credit. They also may be eligible for a monetary stipend. See the Journal of Corporation Law web site.

**JOURNAL OF GENDER, RACE & JUSTICE**

The *Journal of Gender, Race & Justice* pushes the boundaries of legal scholarship and theory in its focus on social justice issues. The journal hosts a symposium at the College of Law every other year, bringing together nationally renowned legal scholars and practitioners to discuss the relationships among the law and race, gender, sex, sexual identity, economic class, ability, and other identity characteristics. The journal publishes an annual volume of legal works that includes symposium papers, papers from conferences outside the college, and articles written by Iowa law students. It also maintains a blog to promote discussion of issues related to its mission.

All students who have completed two semesters of law school, including transfer students, are eligible to write for the journal. Students who have completed the journal’s student writer program or who have third-year standing at the College of Law are eligible to apply for a position on the journal’s editorial board, which may provide a monetary stipend and academic credit. To learn more, visit the Journal of Gender, Race & Justice web site.

**TRANSNATIONAL LAW & CONTEMPORARY PROBLEMS**

*Transnational Law & Contemporary Problems (TLCP)* is published twice a year and is edited by Iowa law students. *TLCP* addresses issues and problems that transcend traditional political boundaries, that are of interest to the international and comparative law community, and that are not commonly found in other journals and reviews. One issue takes the form of a symposium addressing specific topics; this issue has a guest editor who is a legal scholar noted for his or her work on the symposium topic. The second issue is submission based. Every other year the journal organizes and sponsors a symposium on a contemporary international issue; past topics include climate change, the European Union’s sovereign debt crisis, and war crimes.

Law students who have completed at least two semesters of law school may earn up to 2 s.h. of credit by writing for *TLCP*. Highly qualified students who complete the writing and secondary hour requirements may be chosen to fill an editorial position, for which they earn additional credit. They also may be eligible for a monetary stipend. For more information, visit the Transnational Law & Contemporary Problems web site.

**Joint J.D./Graduate Degrees**

The College of Law and the Graduate College offer several joint degree programs in which students work toward the J.D. degree and a graduate degree concurrently. The College of Law may allow students to count up to 12 s.h. of applicable credit earned in the graduate degree program toward both the graduate degree and the J.D. degree, providing that students earn the graduate credit after they enroll in the College of Law. The individual graduate programs determine how much credit earned for the J.D. degree may be applied to the graduate degree. Contact the College of Law dean of students or registrar to learn more.

Separate application to each degree program is required. Applicants must be admitted to both programs before they may be admitted to the joint degree program. Applicants to graduate programs must meet the admission requirements of the Graduate College; see the Manual of Rules and Regulations of the Graduate College.

The following academic units and programs have collaborated with the College of Law to offer joint J.D./graduate degree programs: the Tippie College of Business (p. 642) and its Departments of Accounting (p. 648), Economics (p. 664), and Management and Organizations (p. 682) and Master of Business Administration Program (p. 696); the Schools of Journalism and Mass Communication (p. 433) and Social Work (p. 572) and the Departments of American Studies (p. 44), Anthropology (p. 55), Chemistry (p. 135), English (p. 244),...
History (p. 377), Philosophy (p. 500), Political Science (p. 520), Religious Studies (p. 548), Sociology (p. 585), and Spanish and Portuguese (p. 596) (College of Liberal Arts and Sciences); the Departments of Educational Policy and Leadership Studies (p. 744) and Rehabilitation and Counselor Education (p. 774) (College of Education); the Schools of Library and Information Science (p. 946) and Urban and Regional Planning (p. 963) (Graduate College); the Carver College of Medicine (p. 1005); and the Department of Health Management and Policy (p. 1166) and the Master of Public Health Program (p. 1173) (College of Public Health). Other joint programs may be possible.

Many departments have advisors for their joint programs. For more information, consult the College of Law dean of students and the individual graduate programs.

Students in joint J.D./graduate degree programs pay tuition at the College of Law rate if the tuition is higher for the J.D. program than for the graduate program. An exception is made for students who are not enrolled in College of Law courses or in other courses that will be applied to the J.D. degree during a fall or spring semester or a summer session. Joint J.D./graduate degree students are charged tuition at the College of Law rate for at least six semesters.

Master of Laws

The Master of Law (LL.M.) is one degree program, but designed for two types of students:

Foreign-trained jurists who seek a comparative introduction to, and specific training in, aspects of United States law and legal institutions and a path to state bar admission. Students benefit from the College of Law’s legal analysis, writing, and research course, and core courses including contracts, property, torts, and professional responsibility. An extended orientation provides an introduction to United States law.

Foreign-trained jurists or graduates of J.D. programs in the United States who wish to deepen their understanding of law and are interested in research. The program encourages close collaboration with renowned experts in comparative law; anti-competition law; law and economics; law and society; international law, including the law pertaining to international business transactions and/or human rights; and business and innovation.

The LL.M. program admits fewer applicants so students receive substantial attention from the faculty; thus, admission is competitive. All applicants must present evidence of high academic potential and strong recommendations, especially from law professors who supervised their work in classes or seminars.

Degree Requirements

The LL.M. degree requires that students successfully complete a minimum of 24 s.h. of credit, as approved by their faculty advisor. The 24 s.h. are selected from the College of Law’s general course offerings and from LL.M.-specific courses.

LEGAL PRACTICE TRACK

This track is open to foreign-trained lawyers who do not have a J.D. earned in the United States. Students enroll in the LL.M. orientation to the U.S. legal system course taken in August before the start of the fall semester (2 s.h.); a course in professional legal writing, specifically designed for foreign-trained lawyers (2 s.h.); a course in professional responsibility (3 s.h.); and at least 6 s.h. of basic bar exam courses, such as contracts, torts, or constitutional law.

This track is designed to qualify students to take the bar exam in states such as New York, Wisconsin, and California that allow a number of foreign lawyers to complete the bar exam.

RESEARCH TRACK

This track is open to both foreign-trained students with a J.D. degree and students who hold a J.D. degree earned in the United States. LL.M. students without a J.D. degree must take the LL.M. orientation to the U.S. legal system course in August before the start of the fall semester (2 s.h.). Students take the LL.M. seminar, a research and writing course in which they write a research paper on a topic chosen with the approval of their advisor (for at least 1 s.h.). This track is especially suitable for those seeking to enter into an academic career or one that primarily involves policy formulation or research.

Students who earned a J.D. in the United States and international students who have been trained in another common-law jurisdiction, whose English competence is sufficiently high, and who choose the research track are required to undertake a more ambitious research project (4 s.h.) intended to lead to the production of a publishable paper. Others suitably qualified also may attempt the longer research paper with their advisor’s approval.

With the exception of the LL.M. orientation course and the LL.M. writing courses (professional writing or research seminar), courses are taken with other J.D. students from law course offerings, especially offerings on U.S., international, and comparative law. This method of instruction ensures a very effective comparative experience through broad contact with U.S. law students and professors, and U.S.-trained students similarly benefit from close contact with foreign-trained lawyers.

Master of Studies in Law

The Master of Studies in Law (M.S.L.) degree is primarily intended to educate students and professionals in other fields who do not wish to practice law but who need to recognize and respond effectively to legal issues arising in their work. Individuals who have completed their B.A. or B.S. degree may choose to better position themselves in the job market. Others may be on an established career path but seek to increase their skill set and enhance mobility and promotion opportunities.

The degree program is flexible in content and structure to accommodate all students. Students may choose to pursue courses within a designated specialty track or to build their own customized track. Two specialty tracks include a business and innovation track and a law and public policy track. Alternatively, a student may choose, with law school approval, a customized track relating to a different area of substantive knowledge.

The M.S.L. program provides professionals with an overview of the legal system as a whole, as well as an introduction to some of the legal issues that they are likely to confront in their fields. Students take existing courses in the College of Law alongside J.D. students.

The degree may be completed in as little as one year of full-time study or in not more than four years of part-time
study. The M.S.L. program does not qualify graduates to practice law.

**Degree Requirements**

The Master of Studies in Law program requires 30 s.h. of credit. With law school approval, M.S.L. students may take up to 9 s.h. in related disciplines from other colleges across campus.

**COMMON REQUIREMENTS**

All students must take:

- LAW:8026 Introduction to Law and Legal Reasoning: 1 s.h.
- One or more College of Law writing seminars, independent studies, or tutorials: 2 s.h.
- Two of these (8 s.h.):
  - LAW:8017 Contracts: 4 s.h.
  - LAW:8037 Property: 4 s.h.
  - LAW:8046 Torts: 4 s.h.

**BUSINESS AND INNOVATION TRACK**

This track provides invaluable education to those who work in science, technology, engineering, math, or business fields. It offers legal knowledge regarding patenting of technology, products, and other innovations; trademark branding and marketing strategies; and business formation and management. Students will be able to identify legal issues regarding intellectual property and business; avoid infringement liability, and know when to seek professional legal advice.

Business and innovation track students can select from these or other courses (consult with M.S.L. program director).

- LAW:8105 Administrative Law: 3 s.h.
- LAW:8146 Antitrust Law: 3 s.h.
- LAW:8301 Copyrights: 3-4 s.h.
- LAW:8307 Corporate Finance: 3-4 s.h.
- LAW:8331 Business Associations: 3-4 s.h.
- LAW:8643 Introduction to Intellectual Property: 2-3 s.h.
- LAW:8643 Trademarks and Unfair Competition Law: 2-4 s.h.
- LAW:8954 Trademarks and Unfair Competition Law: 2-4 s.h.

**LAW AND PUBLIC POLICY TRACK**

This track serves students interested in criminal justice, sociology, race issues, constitutional law, international law, and related fields.

Law and public policy track students can select from these or other courses (consult with M.S.L. program director).

- LAW:8010 Constitutional Law I: 3 s.h.
- LAW:8022 Criminal Law: 3 s.h.
- LAW:8105 Administrative Law: 3 s.h.
- LAW:8280 Constitutional Law II: 3 s.h.
- LAW:8362 Critical Race Theory: 2-4 s.h.
- LAW:8570 Human Rights in the World Community: 1-3 s.h.
- LAW:8751 Nonprofit Organizational Effectiveness I: 3 s.h.

- LAW:8752 Nonprofit Organizational Effectiveness II: 3 s.h.
- LAW:9528 Advanced Topics in International Law: arr.
- LAW:9656 Topics in 19th-Century American Legal History: arr.

**CUSTOM TRACK**

This track allows students the flexibility to design a curriculum that fits their needs.

Custom track students select from these or other courses (consult with M.S.L. program director).

- LAW:8105 Administrative Law: 3 s.h.
- LAW:8158 Arbitration Principles and Practice: 3 s.h.
- LAW:8159 Arbitration: Law and Theory: 2-3 s.h.
- LAW:8186 Bankruptcy: 3-4 s.h.
- LAW:8194 Basic Federal Income Taxation: 3-4 s.h.
- LAW:8331 Business Associations: 3-4 s.h.
- LAW:8421 Employment Law: 2-3 s.h.
- LAW:8562 Health Law: 2-3 s.h.
- LAW:8643 Introduction to Intellectual Property: 3-4 s.h.
- LAW:8742 Negotiations: 2-4 s.h.

**Admission**

Applicants must submit an application for admission; a short statement detailing their reasons for pursuing the M.S.L. degree; a current resume; official transcripts from all institutions students have attended; two letters of recommendation; and an official ACT, SAT, Graduate Record (GRE) General Test, Graduate Management Admission Test (GMAT), or Law School Admission Test (LSAT) score. International students whose first language is not English also must demonstrate English language proficiency by obtaining a satisfactory score on the Test of English as a Foreign Language (TOEFL).

Application materials are reviewed by the M.S.L. Faculty Oversight Committee.

**Doctor of Juridical Science**

The Doctor of Juridical Science (S.J.D.) program is intended for students who wish to conduct original and advanced legal research under faculty supervision. S.J.D. students are expected to write a dissertation of publishable quality making a significant and original contribution to legal scholarship. The dissertation should be a book-length manuscript or a series of related articles of equivalent intellectual ambition and scope.

Admission to the S.J.D. program will be granted only if a tenured member of the faculty of the College of Law is available and agrees to serve as the student’s dissertation committee. The S.J.D. chair and other members of the dissertation committee supervise and evaluate a student’s research and writing on the dissertation topic. S.J.D. candidates are responsible for maintaining contact with the S.J.D. chair and other members of the dissertation committee throughout the S.J.D. program with respect to the progress of their work.

In order to be admitted to the S.J.D. program, students typically first complete the LL.M. degree at the University of Iowa or a similar masters-level degree at another law school, either in the United States or at an English-language law school with academic standards equivalent...
to those of highly-ranked U.S. LL.M. programs. In appropriate circumstances, however, the admissions committee will consider applications from excellent students without an English-language master’s-level degree who wish to proceed directly to work on their S.J.D. degree.

Degree Requirements
Once students are admitted to the S.J.D. program, there are five requirements for earning the degree.

YEAR OF RESIDENCY
Doctor of Juridical Science students must spend at least one academic year (two semesters) in residence in the S.J.D. program at the College of Law. The course of study in that year differs depending on whether a student already has an LL.M. or an equivalent master’s-level degree.

Students who already have an LL.M. or equivalent master’s-level degree must complete 18 s.h. of credit during their first year of residency. They must enroll in the S.J.D. tutorial (5 s.h. each semester; 10 s.h. total) to conduct research and writing under the supervision of their S.J.D. dissertation committee. The work in the S.J.D. tutorial focuses on formulating a detailed dissertation proposal, beginning research for and writing of portions of the dissertation, and completing one or more chapters.

The balance of the required 18 s.h. will be earned on an honors/pass/fail basis through research and writing related to a student’s dissertation, supervised by the student’s S.J.D. chair. However, at the discretion of a student’s S.J.D. committee, some of the semester hours may be allocated to courses or seminars that the committee feels a student needs to strengthen his or her ability to write a successful dissertation. Those courses must be taken on a graded basis, if other students taking those courses are enrolled for the courses on a graded basis.

S.J.D. students who have not earned an LL.M. or J.D. degree or equivalent in a U.S. law school, but whose dissertation work may include U.S. law, may be required to take the College’s orientation course for foreign-trained lawyers. A student’s work in these honors/pass/fail courses shall be awarded as honors for all 18 s.h. if the work is judged by the student’s S.J.D. committee to be of a quality and quantity sufficient to justify promotion to S.J.D candidacy. If it is not sufficient for promotion, but a student’s S.J.D. committee judges it to be of sufficient quality and quantity to justify the award of graduate credit, the student shall receive a pass for the 18 s.h. If a student’s S.J.D. committee does not find that the work meets that standard, the student shall receive a failing grade on all 18 s.h.

Students who do not already have an LL.M. or equivalent master’s-level degree must complete 24 s.h. of credit during their first year of residency. Students must complete 18 s.h. as indicated above. An additional 2 s.h. will apply for completion of an orientation to the U.S. legal system course for foreign-trained lawyers, unless a student has already earned a J.D. degree from a U.S. law school. A student also must enroll in the LL.M. seminar, a research and writing course during which a student writes a research paper on a topic distinct from S.J.D. thesis topic. At least 2 s.h. of credit is awarded; 4 s.h. if the student is a native speaker of English or has a J.D. degree from a U.S. law school. A student takes additional S.J.D. research and writing course work with the student’s S.J.D. chair as necessary so the student is registered for 12 s.h. each semester. The S.J.D. tutorial and independent research and writing credits are all be graded on the same honors/pass/fail basis as described above. Any other course work taken for credit is subject to the normal rules of the College of Law with respect to grading.

ADMISSION TO CANDIDACY FOR THE S.J.D.
Admission to S.J.D. candidacy is a formal step that must be achieved before a student has the right to continue in the S.J.D. program to complete a dissertation. The decision about admission to candidacy is determined by the student’s committee on the basis of the work done during the student’s year of residency in the program. In order to admit a student to candidacy, the committee must determine that the student’s work on the dissertation topic during the semesters of residency is of sufficiently high quality that it is reasonable to believe that the student is able to complete a publishable dissertation on the topic.

As part of the assessment process, the S.J.D. committee will hold an oral examination of the candidate. The oral examination is normally held toward the end of the student’s year of residency and focuses on the work that the candidate has completed on the dissertation, the candidate’s general knowledge and understanding relating to the subject matter of the dissertation, and the candidate’s further plans for completing the dissertation. If the committee is not able to admit the student to S.J.D. candidacy at the conclusion of the first year of residency, the committee may give an extension of up to one calendar year if it finds a sufficient basis to believe that the student likely will be able to satisfy the foregoing standard within that time. As part of that extension of time for further assessment, the committee may require the student to submit additional writing and/or to participate in a second oral examination.

PRESENTATION OF DISSERTATION WORK
Each S.J.D. student is required to make at least one substantive presentation of his or her dissertation work at a meeting of the S.J.D. tutorial to a specially constituted group of faculty, or in a public meeting, as arranged with the student’s S.J.D. committee.

COMPLETION OF THE DISSERTATION
Students admitted to S.J.D. candidacy are encouraged to apply for permission to continue their research and writing in the College’s Law Library if they can continue to stay in Iowa City, and such applications will normally be granted. However, students admitted to S.J.D. candidacy are free to complete the dissertation wherever they wish. In any event, they must continue to coordinate with their S.J.D. committee and continue to register each fall and spring semester as an S.J.D. candidate in the College.

Within five calendar years from the date of admission to S.J.D. candidacy, a student must complete the dissertation and have it approved by the S.J.D. committee. In order to approve the dissertation, the committee must determine that the dissertation is of publishable quality. If the committee believes that the work needs revisions or additions to bring it to the requisite level of quality, the committee may give the student an extension of time and the student must meet the deadlines set by the committee for the revisions.
ORAL DEFENSE OF THE DISSERTATION
Before the student’s S.J.D. committee decides whether to approve a student’s completed dissertation for award of the S.J.D. degree, the student must successfully defend the dissertation in an oral defense led by the student’s S.J.D. committee.

Academic Recognition
Order of the Coif
The Order of the Coif, a national legal honor society, has a chapter at the University of Iowa. The order is dedicated to scholarship and advancement of high ethical standards in the legal profession. Membership is drawn from the top 10 percent of the graduating class. Initiates are selected by the faculty after graduation.

Prizes and Awards
Hancher-Finkbine Medallions are awarded each year by the University to outstanding graduates; honorees are chosen from nominations made by University departments and colleges based on learning, leadership, and loyalty.

The Philip G. Hubbard Human Rights Award is presented each year by the University to recognize outstanding contributions to human rights and equal opportunity, as described in the University’s Human Rights Policy.

The Willard L. "Sandy" Boyd Prize is presented to a student who has demonstrated outstanding ability and creativity in the development of written legal scholarship.

The Alan I. Widiss Faculty Scholar Award is presented to a student who has made an especially outstanding and distinctive contribution to the development of written legal scholarship.

The Randy J. Holland Award for Corporate Scholarships is presented to a student who has written an outstanding scholarly paper in the area of corporate law.

The Robert S. Hunt Legal History Award is presented to a student who has written an outstanding scholarly paper in the field of legal history.

The Judge William C. Stuart Award is presented to a third-year student who ranks in the top 10 percent of his or her class and is recommended based on integrity and constitutional principles.

The Innovation, Business, and Law Excellence Award is given to two graduating students who have shown interest and excellence across disciplines of intellectual property, business law, antitrust and competition law, and health law and technology; or have done outstanding work in one innovation, business, and law subject matter area.

The Donald P. Lay Faculty Recognition Award is presented to a student who has made distinctive contributions to the College of Law’s cocurricular, community, or education programs.

The Iowa State Bar Association Prize is presented to a student who possesses the attitude, ability, and other qualities that indicate success as a future leader of the bar association.

The Antonia "D.J." Miller Award for Advancement of Human Rights recognizes outstanding contributions by a student to the advancement of human rights in the law school community.

The Dean’s Achievement Award is presented each year to a student, who, through his or her achievements, has exemplified, promoted, or contributed to cultural, racial, or ethnic diversity in the law school.

The National Association of Women Lawyers Award is presented to a student who contributes to the advancement of women in society and women in the legal profession and who also has attained high academic achievement.

The Erich D. Mathias Award for International Social Justice is presented to a student who has made an outstanding contribution or demonstrated commitment to attaining international social justice.

The John F. Murray Award recognizes the student with the highest academic standing in the graduating class.

The Russell Goldman Award recognizes the student who has demonstrated the most improved academic performance after the first year.

The Iowa College of Law Appellate Advocacy Award is presented to a student for outstanding achievement in and service to the appellate advocacy program.

The Iowa Academy of Trial Lawyers Award is presented to a student for outstanding achievement in the Roy L. Stephenson Trial Advocacy Competition.

The International Academy of Trial Lawyers Award is presented to a student who has demonstrated distinction in trial advocacy skills.

The Michelle R. Bennett Client Representation Award recognizes outstanding service in the college’s clinical law programs.

The ABA/BNA Award for Excellence in the Study of Intellectual Property is presented to a student who has demonstrated excellence in the study of intellectual property law.

The American Bankruptcy Institute Medal for Excellence in Bankruptcy Studies is presented to a student who has demonstrated excellence in the field of bankruptcy.

The Awards for Outstanding Scholastic Achievement is awarded to four students for outstanding performance in both the academic and cocurricular programs of the College.

Student Organizations
Link to the student organizations’ web sites on the college’s Journals & Student Groups web page.

The American Constitution Society (ACS) is a nonpartisan organization whose goal is to foster discussion of important issues of law and policy.

The American Health Lawyers Association is dedicated to improving health care law.

The Asian Pacific American Lawyers Association (APALSA) seeks to promote the field of law among Asians and encourage Asians to enter the field; to improve legal services to Asians; to assist Asians in legal matters; and to educate Asians in the social and ethical obligations of the law.
The Iowa chapter of the **Black Law Students Association** (BLSA) focuses on the relationship of black attorneys to the American legal structure and works to foster an attitude of professional competence. BLSA strives to promote the needs and goals of black law students, instill a greater awareness among law students of the needs of the black community, and encourage a greater commitment toward meeting those needs. The chapter seeks involvement in the local community and in recruitment programs. Membership is open to all students who support the association’s goals.

The **Christian Legal Society** maintains a Christian law fellowship at the College of Law whose mission is to enable its members to love their Lord and to love their neighbors as themselves.

The **Environmental Law Society** provides an educational forum for environmental law topics. During spring semester, the organization sponsors a lecture series featuring professors and experts in environmental law. The group also provides limited legal research and counseling services for attorneys, organizations, and citizens who have questions concerning environmental law. Membership is open to all College of Law students.

The **Equal Justice Foundation** (EJF) supports public interest law concerns, with emphasis on promoting equal access and adequate representation in the courts and other forums for citizens and citizens’ groups. The University of Iowa chapter’s professional activities are aligned with those of the national organization. They include work in varied legal activities statewide; College of Law activities, including coordination with other student organizations to provide the college with a better public interest support base; promotion of public interest career opportunities; and provision of information about public interest activities and concerns. Membership is open to all College of Law students.

The **Federalist Society** fosters critical thought and debate about the application of conservative and libertarian principles to the law. Its mission is to promote, advocate, and defend its founding principles and further their application through its activities, which are aimed at reordering the legal system’s priorities to place a premium on individual liberty and the rule of law, and restoring recognition of those principles among law students, faculty members, lawyers, and judges.

The **Intellectual Property Law Society** (IPLS) promotes exploration of traditional areas of intellectual property law (patent, trademark, copyright) and related areas such as antitrust and entertainment law. The society provides a forum for faculty and student discussion of contemporary issues relating to intellectual property law and its practice; fosters interaction between law students and intellectual property law practitioners through a mentor program that pairs members with intellectual property law practitioners; and offers symposia. All members of the University community are welcome to attend a Society meeting or symposium.

The **International Law Society** aims to increase student and faculty awareness of international law and related issues. The society's brown bag lunch lecture series and annual spring conference expose students and faculty to a wide variety of contemporary legal issues surrounding the study and practice of international law. Members also work to support the activities of the University of Iowa Center for Human Rights; promote the Iowa-Arcachon, France, summer program in comparative and international law; participate in the annual Philip C. Jessup International Moot Court Competition; and bring together faculty members and students who share an interest in international affairs.

The **Iowa Student Bar Association** (ISBA) acts as the College of Law’s student government. Governed by an executive council, the association provides a collective voice for the student body and a source of organization and funding for a variety of college activities and programs. Law students may get involved with the association by serving as class representatives or on faculty-student committees, which deal with admissions, curriculum, financial aid, placement, and so forth. The association presents speakers, sponsors events with other organizations, publishes a newsletter, and sponsors social events. Its legal guardian program assigns entering law students to upperclass students, who provide encouragement and information.

The **J. Reuben Clark Law Society** emphasizes three basic values and attitudes toward the practice of law and the place of law in modern society: public service, loyalty to the rule of the law and the Constitution of the United States, and appreciation for the religious dimension in American society and in lawyers’ personal lives.

The **Jewish Law School Association** (JLSA) strives to foster an attitude of professional competence, produce competent and effective Jewish law students, and utilize available resources — activities necessary to safeguard and advance the rights and opportunities of oppressed peoples. To achieve these goals, LLSA recruits for the law school. LLSA’s philosophy is that national unity is fundamental for the collective awareness needed to bring about progressive policies in legal education. The association welcomes all students.

The **Latino/a Law Student Association** (LLSA) promotes viable changes within existing legal institutions in order to develop constructive legal and community programs, produce competent and effective Latino and Latina attorneys, and utilize available resources — activities necessary to safeguard and advance the rights and opportunities of oppressed peoples. To achieve these goals, LLSA recruits for the law school. LLSA’s philosophy is that national unity is fundamental for the collective awareness needed to bring about progressive policies in legal education. The association welcomes all students.

The **Middle Eastern Legal Student Association** (MELSA) aims to increase student and faculty awareness of issues pertaining to the Middle East and how they affect the legal profession.

The **Military and National Security Law Society** educates and informs Iowa law students about the practice of military and national security law.

The **Native American Law Students Association** (NALSA) promotes awareness of legal, political, cultural, and social issues that affect Native Americans, Alaskan Natives, Native Hawaiians, and other indigenous peoples. NALSA also seeks to promote the study of federal Indian law and provides a forum for the exploration of issues in tribal sovereignty, natural resources, family law, trust obligations, and cultural identity.

The **Organization for Women Law Students and Staff** (OWLSS) aims to address the changing needs and problems of women in the legal profession and to develop, recommend, and implement new programs, especially those that meet the needs of women at the
College of Law. It also sponsors programs of interest to the
general law school community. OWLSS has sponsored
fall recruitment of prospective women law students, a
safety-in-numbers program, brown bag lunches with guest
speakers, sponsorship of members to the annual National
Women and the Law Conference, a support network,
a regular newsletter, and joint programs with women
student groups in medicine and dentistry. Membership is
open to all College of Law students, faculty members, and
staff members.

The Outlaws provides a common forum for gay, lesbian,
bisexual, and transgendered persons interested in the law,
and promotes a climate of mutual support, protection,
and professional advancement. Membership is open to all
College of Law students and faculty members.

Founded in 1902, Phi Alpha Delta (PADS) is the nation's
oldest and largest law fraternity. It was the first law
fraternity to remove membership restrictions based on
race, color, creed, national origin, and grade-point
average. Iowa's Hammond Chapter was established
in 1908 and became the first PADS chapter to accept
students of all races and religions. It participates in fund-
raisers and other service projects to benefit local and
national service organizations. Membership is open to all
College of Law students.

Phi Delta Phi (PHIDS) promotes the highest standards
of ethics and professionalism in law schools and the
legal profession. Since its establishment in 1869, the
fraternity has initiated more than 200,000 members.
It has more judges, American presidents, governors,
senators, representatives, and cabinet members among its
membership than does any other legal fraternity.

The Pro Bono Society exists to reinforce the value of
public service and volunteerism in the legal profession.
Membership in the Pro Bono Society is earned through
objectively measured activities during the academic year.
Iowa law students who complete and report 15 hours
of voluntary public service in each of two consecutive
semesters are considered for membership. Time donated
to a charitable or public service cause, which may be law-
related or not, is considered voluntary public service; the
requirement is interpreted broadly, so that students may
volunteer in an area of interest to them. Members receive
a certificate of membership and are invited to attend the
annual recognition dinner. The society is a project of the
Iowa Student Bar Association.

The Sports Law Society connects College of Law
students interested in sports law with professionals in the
sports industry. Membership is open to all College of Law
students.

Admission

Undergraduate Education and Law School

Applicants for admission to the University of Iowa
College of Law must complete all requirements for the
baccalaureate degree before beginning law school (except
students participating in the college's early admission
program; see "Undergraduate 3+3 Admission" below).
In addition, the baccalaureate degree must be earned
from an undergraduate institution that is accredited by
an accrediting agency recognized by the U.S. Department
of Education. This is in line with standards set by
the American Bar Association, the college's primary
accrediting agency.

Fulfillment of the basic requirements does not guarantee
admission. The College of Law Admissions Committee
selects applicants it deems best able to help the college
fulfill its primary mission of providing a high quality legal
education in a diverse and stimulating environment and
preparing students to serve as leaders in their professional
and civic communities. Some additional consideration is
given to applicants who are residents of Iowa.

The services that College of Law graduates are called
upon to perform are so varied, and the possible fields of
endeavor so broad and diverse, that the college prescribes
no uniform undergraduate program for those planning to
take law school. With the assistance of faculty advisors,
each student should develop an undergraduate program
that explores and develops that student's particular
intellectual interests. Reading, writing, research, public
speaking, critical thinking, and a healthy respect for the
historical perspective are important academic skills for
students considering law school.

Iowa strongly endorses the three basic objectives
recommended by a committee of the Association of
American Law Schools: education for comprehension and
expression in words; education for a critical understanding
of the human institutions and values with which the
law deals; and education for greater power in thinking.
Anyone thinking of attending law school should keep these
objectives in mind while planning an undergraduate course
of study.

The association's recommendations emphasize that
undergraduate education of students for a full life through
liberal education is far more important than education
directed too pointedly toward later professional training
and practice. Students are urged not to sacrifice broad
perspective for detailed specialization.

Undergraduate 3+3 Admission

The college has approved a "3+3" admissions program in
which undergraduate students enrolled at participating
academic institutions and departments in Iowa may
enter law school after their junior year of undergraduate
study, with the first year of law school completing the
requirements of the baccalaureate degree. Contact the
College of Law Office of Admissions for more information.

Selection of Applicants

The college uses multiple criteria in evaluating applicants
for admission. Part of the entering class is admitted under a
"presumptive admit" process, in which the faculty
admissions committee admits students primarily, but
not solely, on the strength of their numbers, namely the
cumulative undergraduate grade-point average and LSAT
score (see "Law School Admission Test" below). Before
admission offers are made, each applicant's complete file
is reviewed to ensure that the overall record suggests the
applicant's suitability for admission, in keeping with the
primary mission of the law school.

Although undergraduate academic record and
performance on the LSAT are both important admission
criteria, the college recognizes that in some circumstances
they do not accurately reflect an applicant's potential to
succeed in the study of law, develop skills as a leader,
enrich the learning environment of his or her fellow
students, and serve the public interest as a lawyer.
To evaluate applicants' total suitability for admission, the college has developed a "numbers-plus" admissions policy, under which each entering class is admitted. Under the "numbers-plus" policy, undergraduate record and LSAT scores are supplemented by nonquantifiable factors that may provide insight to an applicant's overall potential for success in the study and practice of law.

For example, an applicant who can substantiate that his or her standardized test scores are not predictive of academic performance in law school may receive proportionately greater consideration from the committee for his or her grade-point average. Other factors the committee may consider include special academic or professional abilities not reflected in the grade-point average, disability or serious health factors that affected prior academic performance, extracurricular activities, exceptional school-year work commitments due to family financial circumstances, postbaccalaureate academic success (including graduate study), law-related employment experience, public service commitment, leadership in groups historically underrepresented in the legal profession, educational or socioeconomic disadvantage, native language other than English, unusual motivation or perseverance in overcoming obstacles to law study, and any other information the committee considers relevant to the applicant's potential for law study.

Candidates who wish to bring such factors to the committee's attention may do so by including addenda and other documentation with their applications.

Entrance Date
Admission is for fall semester classes, which begin in August. Applications are accepted beginning September 1 of the year before admission, with an application deadline of April 1 in the year of admission. Because the college has a rolling admissions process, applicants are encouraged to submit their applications as early as possible. There is no application fee.

For additional information, visit the College of Law Office of Admissions web site, which provides the office's e-mail address and other contact information, and see the Iowa Graduate Admissions web site.

Application Process
CAS REPORT AND TRANSCRIPTS
The University of Iowa College of Law participates in the Credential Assembly Service (CAS). Applicants must register for this service through the Law School Admission Council (LSAC); foreign-educated applicants are exempt from this requirement. Prospective law applicants can find the information they need to complete their application for admission to the law school in the council's free annual publication, Law School Admission Information Book, and on LSAC's web site. It takes approximately one week from the time the College of Law requests the CAS report until it arrives.

Applicants whose fall course work does not appear on the Credential Assembly Service report should send an official transcript of that course work to CAS.

Applicants are responsible for submitting an official transcript from each college or university they have attended to Law School Admission Council, Box 2000, Newtown, PA 18940-0998.

Each applicant's undergraduate institution must forward the applicant's class rank or the grade distribution for the applicant's class to the College of Law, if such information is available. Information about class rank is helpful in the application process, but not required. Currently enrolled or former University of Iowa students need not provide this information.

Before classes begin, every applicant who accepts admission to the College of Law must file official transcripts showing conferral of degree with the University's Office of Admissions.

LETTERS OF RECOMMENDATION
The college requires applicants to submit at least two, but not more than three, letters of recommendation. Recommendations from professors or others who can comment on the candidate's critical thinking, writing skills, and potential for success in law school are particularly welcome.

The college participates in the Letter of Recommendation Service offered by the Law School Admission Council. A letter of recommendation form can be downloaded on the council's web site. Individuals writing letters of recommendation should send their letters, with the required forms, to Law School Admission Council, P.O. Box 8508, Newtown, PA 18940-8508.

LAW SCHOOL ADMISSION TEST
Applicants for admission must take the Law School Admission Test (LSAT). The test is given several times each year and may be taken at numerous locations in the United States and abroad. Test application forms may be obtained from the Law School Admission Council.

Applicants are urged to take the test no later than the February preceding the fall semester for which they are applying. Applicants' LSAT scores may not be available until approximately four weeks after their test date.

The June test date is the last one that the admissions committee can consider for applicants requesting admission the following fall. Scores more than five years old are not accepted.

Applicants whose first language is not English must take the Test of English as a Foreign Language (TOEFL) or the International English Testing System (IELTS) exam.

DEFERRALS
Admission is for the year of application; deferrals are granted only in extraordinary circumstances.

DEPOSIT UPON ACCEPTANCE
All applicants accepting an offer of admission must make a nonrefundable deposit of $250 (U.S.). Fall entrants accepted before March 15 must submit the deposit by April 1; those accepted after March 15 have two weeks to submit the deposit.

Fall entrants must pay a second nonrefundable deposit of $150 (U.S.) by June 1.

For those who enroll, the deposit is credited toward tuition and fees. All accepted applicants, including recipients of scholarships, fellowships, and loans, are required to pay the deposit. Applicants who fail to make the deposit by the specified time forfeit their place in the entering class.
Financial Support
The College of Law administers its substantial scholarships and fellowships to advance the goals of its selective admission policy and to provide access to legal education for the talented and diverse students admitted to the college. Inquiries regarding financial aid should be directed either to the College of Law Office of Financial Aid or the University of Iowa Office of Student Financial Aid (financial-aid@uiowa.edu). Information is subject to change without notice.

Application for Financial Aid
Eligibility for federal loans is based on need established by completion of the Free Application for Federal Student Aid (FAFSA) and the required supporting documents. The University of Iowa School Code is 001892. It is important to complete the FAFSA as soon as possible after January 1, since some financial aid is subject to the availability of funds.

Although scholarship and fellowship awards are not made until after applicants are admitted to the College of Law, applicants should not wait for the notice of admission before filing the FAFSA. Admitted students who provide the required documents (see Financial Aid Checklist) receive an e-mail instructing them to access their award notification on ISIS.

Applicants are urged to investigate other sources of aid. The UI Office of Student Financial Aid lists some scholarship sites on its Scholarships page.

MERIT SCHOLARSHIPS
These awards are based on academic achievement. Awards range from $500 to full tuition, with a research-assistantship component in upper-level years. Renewal for the second and third year of merit scholarships requires that the scholarship recipient remain in good academic and professional standing at the College of Law. Good academic standing requires a cumulative g.p.a. of at least 2.10. Good professional standing requires ethical and responsible conduct as a member of the law school community in accordance with University and law school policies.

IOWA LAW SCHOOL FOUNDATION SCHOLARSHIPS
The College of Law enjoys a robust scholarship program due in part to the Iowa Law School Foundation. Recipients of UI Law Foundation scholarships learn about the people and funds behind their scholarships and are asked to write a letter of thanks to donors.

LAW OPPORTUNITY FELLOWSHIPS
The College of Law is committed to affording opportunities for legal careers to persons historically underrepresented in the legal profession. The Law Opportunity Fellowship Program (LOF) was established by the University to provide access to law school for students from groups and backgrounds historically underrepresented within the legal community. Among the criteria considered in awarding the fellowships are educationally and/or socioeconomically disadvantaged backgrounds, leadership potential, academic merit, and need. Awards may be up to full nonresident tuition for three years and the opportunity to hold a research assistant position for the second and third years. To receive LOF awards, students must apply for financial aid each academic year and submit all of the required forms as soon as possible after January 1 for the next academic year. Good academic standing requires a cumulative g.p.a. of at least 2.10. Good professional standing requires ethical and responsible conduct as a member of the law school community, in accordance with University of Iowa and College of Law policies.

RESEARCH ASSISTANT POSITIONS
Research assistantships are available with many faculty members; eligibility is limited to second- and third-year students. Quarter-time research assistantships (10 hours per week) affect the tuition rate of a nonresident student, so that assessment is at the resident tuition rate, altering the student’s financial aid package. Visit Research Assistantships on the college’s web site for more information.

UI PART-TIME EMPLOYMENT
The University offers a variety of part-time employment positions for students. These part-time jobs do not require an application for financial aid. For more information, visit Part-Time Hourly University Employment on the UI Office of Student Financial Aid web site.

FEDERAL WORK-STUDY PROGRAM
The federal Work-Study Program provides need-based employment opportunities for a limited number of students in their second and/or third year at the College of Law. Participation in the Work-Study Program reduces a student’s William D. Ford Federal Direct Loan eligibility. Students must demonstrate financial eligibility for the Work-Study Program through the FAFSA and its required documents. See Work-Study Employment on the UI Student Financial Aid web site.

Loans
All admitted students who file the FAFSA and required supporting documents are considered for the Federal Perkins Loan and the William D. Ford Federal Direct Loans.

FEDERAL PERKINS LOAN
The Federal Perkins Loan is a low-interest loan based on exceptional financial need. Interest does not accrue and payments are not required until the student is no longer enrolled at least half-time in school.

FEDERAL DIRECT FORD/STAFFORD LOANS, FEDERAL GRADUATE/PROFESSIONAL PLUS LOANS
The Federal Direct Ford/Stafford Loans (unsubsidized) and the Federal Graduate/Professional PLUS Loans are funded by the federal government. The two loan programs have different interest rates and interest subsidies based on annual maximum loan amounts. Interest on the Unsubsidized Direct Stafford Loan and Graduate/Professional PLUS Loan accrues while a student is in school, but principal and interest payments may be deferred while a student is in school. Eligibility for the Graduate/Professional PLUS Loan also includes a determination that the applicant does not have adverse credit history. See Loans on the College of Law web site.

The College of Law administers substantial scholarships and fellowships to advance the goals of its selective admission policy and to provide access to legal education for the talented and diverse students admitted to the college. Inquiries regarding financial aid should be
directed to the College of Law Office of Financial Aid or the University of Iowa Office of Student Financial Aid. Information is subject to change without notice.

**Academic Rules and Procedures**

**Academic Advising**
The senior associate dean works with the dean on academic programs and issues of the law school.

The associate dean for student affairs provides academic advice and counseling to students; advocates for student concerns; offers information and makes referrals for students with professional, personal, or family problems; facilitates operation of the student discipline system; and arranges reasonable accommodations for disabled students. The associate dean for student affairs also advises law students pursuing combined degrees in University of Iowa graduate programs and serves as the liaison with those programs.

Each year one or two tenured faculty members are selected by the Iowa Student Bar Association to serve as College of Law ombudspersons. Students who have a problem or grievance should seek an ombudsperson's help. All complaints are handled in strict confidence.

The College of Law registrar is in charge of student record keeping and should be students' first recourse for information about course enrollment, scheduling, joint degree program status, registration, grades, student certification for state bar applications, and progress toward graduation.

A faculty committee reviews and makes proposals for policies affecting students. It considers the college's efforts to recruit and provide services for students, including nontraditional students and those from disadvantaged backgrounds. It provides policy guidance and general oversight for the college's career services and its Academic Achievement Program, and it coordinates and reviews the college's methods for providing academic and curricular counseling to students. The committee also advises the dean on curricular counseling for students.

**Transfer Credit**
No more than 28 s.h. may be transferred to Iowa from another law school. To qualify for transfer credit, courses must have been completed at a law school accredited by the American Bar Association. Grades received at another law school are not counted in calculating the cumulative grade-point average.

**Courses Taken Before Admission to the College of Law**
Students may not count toward the J.D. any credit they earned in courses they took before matriculating at the College of Law, with the exception of transfer students from other law schools.

**Courses Taken Outside the College of Law**
Students who take courses outside the College of Law must first obtain permission from the dean of students. If a course is restricted on ISIS (Iowa Student Information Services web site), a student also must obtain the instructor's permission.

Students not enrolled in a joint degree program may apply toward the J.D. a maximum of 6 s.h. earned in courses outside the College of Law and/or through cocurricular work. Such courses are approved only if they contribute directly to the professional competence of an attorney or broaden a student's understanding of law, the legal process, or any particular legal subject. More information about limitations on accreditation of non-College of Law courses is available from the dean of students.

**Transfer of Credit after Admission**
With the permission of the associate dean, enrolled students may receive credit for courses taken and passed at other law schools accredited by the American Bar Association, up to a maximum of 34 s.h. Courses are shown on a student's transcript as credit for the designated semester hours. Grades received at another law school are not counted in a student's weighted cumulative grade-point average.

**Grading Policy**
The College of Law uses a numbering system for grading. A numerical grade is assigned to each student in each course, except as otherwise provided (e.g., for courses graded pass/fail, for courses that continue the following term, for grades of incomplete). Grades are recorded in the University's permanent record.

The highest grade awarded at the College of Law is 4.3, the lowest 1.5. No academic credit is given for grades below 1.8 or for grades of "fail."

Numerical grades may be translated into a letter grade as follows:

- 4.3–4.2 = A+
- 4.1–3.9 = A
- 3.8–3.6 = A-
- 3.5–3.3 = B+
- 3.2–3.0 = B
- 2.9–2.7 = B-
- 2.6–2.4 = C
- 2.3–2.1 = C-
- 2.0–1.8 = D
- 1.7–1.5 = F

Professors may disenroll students for cause or reduce grades for inappropriate academic conduct, for example, plagiarism. Such measures are subject to appropriate due process.

A student who fails a required course must repeat the course, with a different professor if possible. Both enrollments and both final grades earned in the course will appear on the student's transcript and will be included in the calculation of the student's grade-point average. A student who earns a grade lower than 2.1 in the retaken course is referred to the Retention Committee.

A student who fails a nonrequired course may repeat the course with the permission of the associate dean. The grade on the retaken course is recorded as pass (P) or fail (F) and is not used in computing the student's cumulative grade-point average. To receive a P in a course that is retaken, the student must earn a grade of 2.1 or higher.
Pass/Fail Grades
Credit for certain courses is offered only on a pass/fail (P/F) basis. In the case of a failing academic performance in a pass/fail course, the faculty supervisor or instructor may assign a failing numerical grade, i.e., between 1.7 and 1.5. Individual faculty members may allow students to withdraw from a course rather than receive a failing grade.

Miscellaneous Grading Marks
Marks other than pass, fail, and numerical grades are as follows.
Registered (R) indicates that a student has completed the first half of a year-long program, such as a seminar or journal, for which a grade cannot be assigned until the second half of the program has been completed.
Withdrawn (W) carries no course credit and is not used in computing the cumulative grade-point average.
Incomplete (I) carries no course credit toward a degree until it is changed, nor is it used in computing the cumulative grade-point average. A mark of I may be reported only in exceptional cases and only if the unfinished part of the work is small and is unfinished for reasons acceptable to the instructor, and if a student's standing in the course is satisfactory. Students remove an incomplete by completing the unfinished work during their next period of residence.

Class Ranking
Students in the top 10 percent in each class may be informed of their exact rank; grade-point averages at the 12.5 percentile and 37.5 percentile are posted. Students are ranked following the fall semester and spring semester each year. Final class standing is determined each August and is available in September. It includes students who completed all graduation requirements in August, May, and the previous December. For purposes of ranking underclass students, the same system is used, based on the expected graduation date.

Release of Transcripts
A student's grades are not given to persons outside the College of Law, including prospective employers, without written permission of the student.

Class Attendance and Preparation
Students must attend classes regularly and punctually. They must be prepared to participate in class discussions. A student may be dropped from a course or failed, at the discretion of the instructor, for excessive absence or for repeated lack of adequate preparation. In addition, students are expected to attend special class meetings and be punctual in submitting course assignments, in accordance with ABA Standard 304(d).

Examination Policy
One examination is given in each course, with few exceptions. Before taking exams, each student is assigned an identification number to ensure anonymity in grading. Students must write their examination number on any materials that are distributed at the start of the examination and collected at its conclusion. The instructor submits a grade for each identification number, which is kept on file for two years at the College of Law.

To preserve anonymous grading, students must not identify themselves and must not place their name on the examination answer or other materials that the instructor might see. They also may not discuss the examination with the instructor until the exam has been graded and the grades released. Students who have questions should pose them to a proctor during the examination or to the College of Law dean of students or registrar after the exam.

Students may be offered the option of taking some exams on their personal laptops. Each course's instructor determines whether this option is available for his or her specific course. Students who choose this option must purchase and use special exam-taking software available through the College of Law.

Students who have more than one examination scheduled for the same day, two consecutive exams (i.e. Wednesday afternoon, Thursday morning), or exams four days in a row may schedule a make-up time for one of the exams. Students who have exams three days in a row may reschedule one only with permission of the instructor.

Students are expected to take the exam on the next regularly scheduled makeup date immediately following the regularly scheduled exam. Whenever possible, the dean sets aside one to three days as an upperclass study period between the end of regular classes and the first regularly scheduled upperclass exam. See the College of Law Student Handbook for all policies related to examinations.

Exam Accommodations for English Language, Physical, or Medical Reasons
A student who is at a substantial disadvantage in taking an exam within the specified time limit because he or she does not have English as a primary language or because he or she has a physical or recognized medical disability may be granted additional time to complete the exam commensurate with the extent of the disadvantage. A student seeking such additional time must make a request to the dean of students by the deadline announced each semester, unless the disability comes into existence after that deadline has passed, stating the nature of the disability and the examination(s) for which the student seeks additional time.

An undergraduate degree from an English-language college or University is considered prima facie evidence that the student is not qualified to be granted extra exam time due to not having English as a primary language. When additional time is granted, it generally is reduced each semester as the student becomes more proficient in English.

Program Accommodations for Students with Disabilities
The College of Law is committed to making all of its programs, activities, and services accessible to students with disabilities. In compliance with the Americans with Disabilities Act of 1990 and Section 504 of the Rehabilitation Act of 1973, it strives to provide equal access to all academically qualified students and does not discriminate against students on the basis of disability. The college provides reasonable accommodations to students with disabilities, commensurate with the nature and extent of the disability and consistent with federal law, state law, and policies of the University of Iowa and the
College of Law. Students may request accommodations for any University of Iowa sponsored curricular, cocurricular, or extracurricular program, including those in the College of Law.

The College of Law’s cocurricular and extracurricular programs include, but are not limited to, Appellate Advocacy I, Trial Advocacy Board, the Iowa Law Review and its editorial board, Moot Court Board, Advanced Moot Court Competition, Van Oosterhout-Baskerville Moot Court Competition, National Moot Court Competition, The Journal of Corporation Law and its editorial board, Transnational Law & Contemporary Problems and its editorial board, The Journal of Gender Race & Justice and its editorial board, Jessup International Moot Court Competition, and Jessup International Law Moot Court team.

Withdrawal and Leave of Absence
First-year students who withdraw during the academic year or who fail to reenroll for the second semester must apply for reentry to the College of Law. They must compete with other applicants for a place in the first-year class for the year in which they wish to return. For each readmission application, the reason for the withdrawal and the quality of work done before withdrawal or failure to reenroll is considered. For admission purposes, individuals who have earned fewer than 27 s.h. of credit at the time of withdrawal or failure to reenroll are considered first-year students.

Second- and third-year students who fail to enroll for any semester during the academic year and who have not been granted a leave of absence by the dean of students must obtain permission from the Admissions Committee if they wish to reenroll. Requests for permission to reenroll must be submitted no later than 90 days before the beginning of classes for the semester or summer session in which a student seeks to reenroll.

The dean of students may grant a second- or third-year student a leave of absence for up to one year, if the student shows good cause. First-year students may be granted leaves of absence only under extraordinary circumstances, such as a medical or family emergency, or as a reasonable accommodation for a disability.

Students who withdraw from the College of Law after they have paid tuition are entitled to a pro rata refund of that tuition depending on the effective date of their withdrawal. Consult with the college’s Office of Financial Aid for details.

Student Conduct
Students are expected to act in a manner appropriate at a professional school. An act or omission that is dishonest or designed to take unfair advantage may subject a student to sanctions as serious as expulsion from school. Misconduct policies and procedures are published annually in the College of Law Student Handbook.

Research Centers and Programs
Participation in research centers and outreach programs is an important part of the College of Law’s service to professional and civic communities. The college was home to the nation’s first agricultural law center. Since that center’s closing, several new centers and institutes have been founded in diverse fields such as health law and policy, human rights law, not-for-profit entities, public affairs, and public international finance. These programs enjoy increasing national and international recognition for their specialized research projects and service activities. Several have enjoyed success in attracting competitive grants from state, federal, and private sources.

Innovation, Business, and Law Center
The Innovation, Business, and Law Center is an interdisciplinary teaching and research venture that brings together faculty members who teach and study problems of business, technology, innovation, regulation, and legal policy from diverse perspectives. The center’s purpose is twofold: first, it offers an innovative curriculum and outstanding legal training in areas pertaining to government regulation of entrepreneurship, innovation, and management of resources; second, it encourages creative individual and collaborative interdisciplinary research in these areas.

Institute of Public Affairs
The Institute of Public Affairs provides services and information to help maintain and strengthen the effectiveness of Iowa’s local governments. The institute facilitates goal setting and strategic planning, educational programs and information, professional development, and public management assistance, and offers information and publications, outreach, and linkage with other University programs and activities. The Institute provides training for newly elected mayors and council members through a municipal leadership academy and publishes the Iowa Municipal Policy Leader’s Handbook for city officials. It also holds the annual Iowa Municipal Management Institute, a professional development conference for city and county managers and administrators in Iowa.

Larned A. Waterman Iowa Nonprofit Resource Center
The Larned A. Waterman Iowa Nonprofit Resource Center offers information and assistance from across the University of Iowa to help Iowa’s charitable nonprofit organizations become more effective in building their communities.

Law, Health Policy & Disability Center
The Law, Health Policy & Disability Center is a leader in law, technology, education, and research focused on improving the quality of life for persons living with disabilities. Based at the University of Iowa College of Law, the center concentrates on public policy and its impact on persons with disabilities, emphasizing employment, self-determination, and self-sufficiency.

National Health Law and Policy Resource Center
The National Health Law and Policy Resource Center, founded in 1981, promotes laws and public policies that foster and facilitate accessible, affordable, and quality health services and related services for all Americans, particularly members of vulnerable and disadvantaged populations. The center provides a nonpartisan forum for informed dialogue between academics, practitioners, and public policy makers based on the best available data and information about important health law and policy issues.

University of Iowa Center for Human Rights
The University of Iowa Center for Human Rights was founded in 1999 as an outgrowth of the University's year-
long commemoration celebrating the 50th anniversary of the Universal Declaration of Human Rights. Based in the College of Law, the center engages in human rights teaching, scholarship, and public engagement.

Facilities and Resources

Boyd Law Building

The Willard L. Boyd Law Building, completed in 1986, exemplifies Iowa's continuing commitment to legal education and the legal profession. The building's large, circular structure reflects the special character of the Iowa law school and allows the college to operate in a physical environment in which every square foot of space is designed to promote the college's academic and professional programs.

Among the building's facilities are classrooms, the Levitt Auditorium, the Law Library, faculty and administrative offices, offices for the college's curricular programs, meeting rooms, a bookstore, and a cafeteria. The renovated suite for the college's clinical law programs functions as a teaching law firm, offering ease of access, usability, and visibility. Student and faculty lounges and faculty offices are located on the same floor, encouraging student-faculty interaction.

University of Iowa Law Library

The centerpiece of the Boyd Law Building is the University of Iowa Law Library. The Law Library has one of the most comprehensive collections of legal materials in the country, containing more than 1.3 million bound volumes and microform equivalents and more than one million separately cataloged titles as of July 2014. A particular strength of the library is its collection of U.S. legal materials. The Law Library also holds an exceptionally strong collection of materials in foreign, comparative, and international law, including a print collection comprising approximately 280,000 volumes and over 1,500 serials and subscriptions.

The library's extensive collection of electronic resources is accessible both on and off campus via its web site. The library provides access to numerous comprehensive legal databases, such as Westlaw, Lexis, and Bloomberg Law, in addition to many specialized legal databases. The Law Library's print and electronic legal collections are reflected in the University of Iowa Libraries' online catalog InfoHawk.

The Law Library is open 106 hours a week during the regular academic year. Study carrels, large tables, and casual seating are located throughout the library, in addition to wireless Internet access and electrical outlets. The Reference Desk is staffed seven days a week by experienced reference librarians, who assist with a wide range of questions.

Writing Resource Center

The Writing Resource Center serves as an extension of the classroom and of the required first-year LAW sequence, LAW:8032 Legal Analysis Writing and Research I and LAW:8033 Legal Analysis Writing and Research II. The center's director holds a Ph.D. focused on teaching of writing.

The center provides one-on-one tutorial assistance for writers working on course assignments, journal articles, writing samples, and so forth. Students come to the center through the recommendation of faculty members or through self-referral. They find help with rhetorical, stylistic, and grammatical concerns that arise in their writing. Center staff members also work with students on general writing improvement and on strategies for dealing with everything from overcoming writer's block to adapting material for varied audiences. More than two-thirds of all first-year law students and more than one-third of all law students make use of the Writing Resource Center in a typical year.

Career Services Office

The College of Law's Career Services Office provides personalized career and life planning, strategic networking, experiential learning programs, and job search assistance to law students and alumni. It assists approximately 100-150 firms, corporations, government agencies, and courts that visit the College of Law during a typical year to interview and hire Iowa law students. Visit the Career Services Office web site to learn about the office's wide range of services in detail.

Bookstore

The College of Law Bookstore carries all required legal texts and supplements. The bookstore stocks photocopied handouts and teaching materials assigned by course instructors. It also carries a variety of professionally prepared outlines, horn books, and other study aids as well as a limited selection of school supplies and merchandise, including pens, notebook paper, binders, computer disks, exam software, stamps, T-shirts, and sweatshirts. In addition, the bookstore can make change.

Students may charge costs for books, class materials, supplies, and merchandise directly to their University accounts. The bookstore does not accept credit cards.

Information Technology

Since electronic information technologies are vital in legal and business work, the College of Law encourages all law students to become proficient with computers. Access to word processing software also helps law students draft the many papers, articles, and other manuscripts that are a regular part of the law curriculum. The college has installed 41 personal computers attached to a local area network for use by its students. Students also are encouraged to purchase personal computers and Microsoft Windows software, if possible, and to use them in connection with their law school work.

The law college provides network and Internet access from all student library carrels. To participate, law students supply their own laptop computers, which must meet required specifications. Specifications are available from the Law Library computer support office. Wireless Internet access is available throughout the Boyd Law Building.

The college's computers are loaded with WordPerfect and Microsoft Office software, and the college provides training for and access to the two major online computer research databases, West Publishing Company's WESTLAW and Mead Data's LEXIS. Once students complete the training, they have unlimited free access to these services at home via their own PCs and on the student and public workstations in the Law Library.

The Law Library also provides CD-ROM workstations that allow access to databases in CD-ROM formats. Some of the titles available are United Nations documents, complete from 1945; Index to Legal Periodicals; TIARA, a database...
containing treaties; and numerous U.S. government documents published on CD-ROM.

The University provides free e-mail accounts to its students, faculty, and staff through its Information Technology Services office (ITS). Students can sign up for e-mail accounts online or at the ITS offices in University Capitol Centre (UCC). ITS advises University of Iowa students, faculty, and staff on computer hardware and software needs and can provide information about educational discounts on some purchases. ITS also offers a wide variety of free computer short courses throughout the year. For information on computing resources at the University, consult the Information Technology Services web site.

College of Law Events

The College of Law holds a number of events for its students each week; check the College of Law Event Calendar for current listings. Parents and Partners Day and Iowa Supreme Court Day are two time-honored events held each fall at the college.

Parents and Partners Day

Parents and Partners Day, held during fall semester, provides law students with the opportunity to give the people close to them a glimpse into law school life. The day's activities include a mock class, building tours, a cookout, and the annual Law School Auction, which helps provide support for law students who work in low-paying or unpaid summer positions in the public sector.

Iowa Supreme Court Day

The College of Law hosts the Iowa Supreme Court on the University of Iowa campus each fall. Supreme Court Day honors the state's top court and recognizes the college's origins in the court's chambers. During the day, four student advocates selected from the previous spring's Moot Court competition argue a case before the justices; the public is invited to attend the arguments. In the evening, faculty members host dinners in their homes for the justices and students.

Iowa Law School Foundation

The Iowa Law School Foundation (ILSF) is a nonprofit corporation established to solicit, manage, and grant gifts of money and/or property to the College of Law to support the college's research and educational activities. The ILSF Board of Directors includes alumni, faculty, and students.

Courses

The following courses are those offered by the College of Law during the past four academic years and those scheduled to be offered during the coming academic year. See College of Law Guide to Courses for a list of College of Law courses defined by Interpretation 509-1 of the American Bar Association Standards for the Approval of Law Schools.

First Year

LAW:8006 Civil Procedure 4 s.h.
Procedure before trial; commencement of a suit; subject matter jurisdiction; jurisdiction over the person and venue; pleadings, motion practice, including summary judgment, simple joinder of parties and claims in determining scope and size of the lawsuit; pretrial discovery procedures, the trial, claim and issue preclusion.

LAW:8010 Constitutional Law I 3 s.h.
Constitutional allocation of governmental powers; doctrine of judicial review and nature of judicial function in constitutional cases; relationships among several branches of national government; the federal system, including powers delegated to national government, powers reserved to states, and intergovernmental immunities; role of judicial process in structuring limits within which society operates; institutional development of legal system, relationship among institutions within the system.

LAW:8017 Contracts 4 s.h.
Law that governs the otherwise unregulated sector of the economy; making and enforcement of promises, usually as part of a bargain; formation of agreements, consideration, invalidating causes, parol evidence and interpretation, conditions, and remedies; roles of promises and promissory exchanges in a modern economy; the law's limitations on freedom of contract; brief introduction to Uniform Commercial Code, Article 2.

LAW:8022 Criminal Law 3 s.h.
Basic understanding of substantive criminal law; underlying premises of and justifications for criminal law; emphasis on general doctrines that dictate the minimum elements necessary to impose criminal liability, essential requirements of culpable conduct (an actus reus, or guilty act), blameworthy mental state (a mens rea or guilty mind); rape, homicide, causation, attempt, conspiracy, accomplice liability; various defenses to criminality, such as self-defense, duress, intoxication, insanity, diminished capacity.

LAW:8026 Introduction to Law and Legal Reasoning 1 s.h.
Basic concepts and intellectual skills necessary for understanding the first-year curriculum.

LAW:8032 Legal Analysis Writing and Research I 2 s.h.
Structured development of effective skills in legal analysis, writing, and research; first of a two-semester sequence.

LAW:8033 Legal Analysis Writing and Research II 2 s.h.
Structured development of effective skills in legal analysis, writing, and research; second of a two-semester sequence. Prerequisites: LAW:8032.
### Second and Third Years

#### LAW:8105 Administrative Law
3 s.h.
Formal and informal procedures, processes, and functions of state and federal administrative agencies; legislative, executive, and judicial control of their actions; nature and definition of administrative agencies; permissible delegation of authority to administrative agencies; scope of agency authority; agencies' right to obtain information from members of the public; citizens' right to obtain information in agencies' possession; definition and types of administrative rules; rule-making procedure; agency discretion to make law by rule or adjudication; right to a trial-type hearing before an agency; parties' specific rights in an administrative hearing, including notice, open or closed hearing, right to counsel, evidence, nature and exclusivity of the record; agency decision-making process, including role of hearing officers, separation of functions and bias of decision makers, nature of opinion required; judicial review of administrative action, including reviewability of agency action, primary jurisdiction of agencies, exhaustion of administrative remedies, standing, scope of judicial review, mechanics of judicial review.

#### LAW:8112 Advanced Civil Procedure
Arr.
Complex civil litigation; advanced civil procedure topics not taught in first year; essential aspects of civil procedure (e.g., personal and subject matter jurisdiction); joinder devices (intervention, necessary parties, interpleader, consolidation), discovery and confidentiality orders, appellate jurisdiction, mechanisms to structure the trial (e.g., bifurcation of issues); class. Prerequisites: LAW:8006.

#### LAW:8121 Advanced Legal Research Methods in Specialized Subjects
1 s.h.
Legal research methods in specific legal practice and research areas; specific topic rotates each year (litigation and ADR legal research, business and tax legal research, federal legislative history legal research, legal history research); students work with real-world examples to improve research skills related to a particular legal subject.

#### LAW:8123 Advanced Legal Research
2 s.h.
Builds on LAW:8032 and LAW:8033; in-depth exploration of American legal resources; current print and electronic resources that help students develop better, more efficient search techniques and select the most effective formats for their research; opportunity to review the basic sources of legal information, use varied techniques to access legal information, develop personal strategies for managing information; advanced training in LEXIS, WESTLAW, the Internet; nonlegal information sources important to the legal community, research resources of other legal jurisdictions and international law.

#### LAW:8125 State Legal Research
1 s.h.
Legal resources available for a particular state; exploration of current print and low-cost electronic resources (i.e., Internet) to develop better, more efficient search techniques; selection of the most effective formats for research; sources of legal information; techniques for accessing legal information.
LAW:8146 Antitrust Law 3 s.h.
Laws dealing with restraints of trade, monopolization and mergers; history of these laws and their development in the courts; current doctrine and its underlying legal and economic theories; analytical tools of trade: sufficiency of economic efficiency as the measure of justice.

LAW:8158 Arbitration Principles and Practice 3 s.h.
Introduction to law of arbitration and essential skills and procedures involved in its practice; role of arbitration in modern conflict resolution in various settings in which it is used; conceptual framework and explanatory theories for analysis of issues frequently encountered in arbitration; statutory and contractual grounds for arbitration (e.g., labor relations, employment, consumer, and commercial transactions); development of skills and understanding of procedure through use of problems and exercises simulating common arbitration scenarios in which students participate as lawyers, arbitrators, and parties.

LAW:8159 Arbitration: Law and Theory 2-3 s.h.
The law of arbitration and its role in modern conflict resolution, conceptual framework and explanatory theories for the analysis of issues frequently encountered; statutory and contractual grounds for arbitration, such as labor relations, employment, consumer, and commercial transactions; the decision to use arbitration; the role of lawyers; judicial enforcement of arbitration agreements and arbitration awards; contractual issues and defenses; federal preemption; arbitrability and separability; remedies; the relationship between arbitration and litigation and mediation and other non-adversary forms of dispute resolution.

LAW:8160 Arbitration: Practice and Advocacy 1-2 s.h.
Skill development to effectively participate in arbitration and related court proceedings; advise clients on various aspects of arbitration; opportunity to draft an arbitration agreement, a petition to compel arbitration, a prehearing arbitration booklet with legal authorities and supporting exhibits, and pleadings necessary for judicial review; examination of all aspects of the arbitration process; procedures for post-award remedies and judicial review; hybrid methods of arbitration, applicable rules, and ethics concepts.

LAW:8161 Arbitration Advocacy Competition 1-2 s.h.
Development and application of arbitration advocacy skills in preparation for the Iowa intramural and regional competitions; addresses arbitration presentation methodology, procedure, prehearing preparation, and advocacy skills; students who advance in the intramural Iowa Arbitration Tournament are selected to represent Iowa in the ABA Arbitration Competition the following fall.

LAW:8163 Art, Law, and Ethics 3 s.h.
How law and ethics apply to individuals and institutions concerned with the visual arts. Same as ARTH:4040.

LAW:8167 The American Legal Experience 3-4 s.h.
Historical role of law in American society and its engagement with politics, social and biological science, economics. Same as HIST:4287.

LAW:8169 The American Legal Experience 3 s.h.
Historical role of law in American social, political, and economic life from the 17th century through 1980s; legal issues involving religion and state, early national period and the Constitution, law of slavery, common law and economic development, changing legal status of women, law's engagement with the social sciences, race discrimination, crime, legal realism, and development of modern welfare and business policy.

LAW:8186 Bankruptcy 3-4 s.h.
Rights of individuals and entities under the federal bankruptcy laws, from perspectives of debtors and creditors; foundational topics from liquidation bankruptcy (chapter 7) to reorganization bankruptcy (chapters 11 and 13); consumer and business bankruptcies; advanced bankruptcy topics such as small business reorganizations, farm bankruptcies, ethical issues in bankruptcy law, international insolvencies. Prerequisites: LAW:8374.

LAW:8194 Basic Federal Income Taxation 3-4 s.h.
Operation, policies, principles of federal income tax, including gross income, deductions, property dispositions, tax accounting, assignment of income among family members, time value of money, leveraging.

LAW:8198 Building the State 2 s.h.
Examination of state building and deconstruction; taxing, spending, fiscal citizenship, theories about state building; topics may include statelessness, legibility and state building, utopian tax regimes, revolutionary tax systems (French, U.S.A., Confederate States of America, potential Scottish state), voluntary taxation and non-state "tax" regimes (ISIS, organized crime).

LAW:8216 Civil Procedure in Pre-Trial Theory and Practice arr.
The law of pleadings and other pretrial matters presented in LAW:8006; hypothetical case developed from interview to pleading to early pretrial stages; experience drafting relevant pleadings and motions. Prerequisites: LAW:8006.

LAW:8263 Comparative Law 2-3 s.h.
Comparative study of origins, development, and principal features of the world’s main legal systems; common and civil law traditions; historical development of the main legal systems, their sources, ideologies, techniques; subjects important to international legal practice (e.g., international judicial assistance, application of foreign law in American courts; in-depth study of modern legal systems of the United States, Britain, France, Germany, Japan, Russia; introduction to other legal traditions, including preliterate tribal law, traditional Chinese and Islamic law.

LAW:8272 Conflict of Laws 2-3 s.h.
Problems created when a transaction or relationship has associations with more than one jurisdiction; emphasis on selection of appropriate rules where there are differences in laws of various jurisdiction and on recognition of judgments of other states; current evolution in theoretical approaches to these problems; limitations on American state courts by the federal constitution.
LAW:8280 Constitutional Law II  3 s.h.
Limits on governmental power imposed by the national constitution for protection of individuals; protection of life, liberty, and property by due process and equal protection; freedom of expression and association; religious freedom and the guarantee against establishment of religion; 1st and 14th Amendments.

LAW:8301 Copyrights  3-4 s.h.
Federal law of copyrights, primarily the Copyright Act of 1976; emphasis on copyright protections affecting new technologies, such as videotape, computer hardware and software, electronic data transfer, cable television rebroadcast; ability of legal concepts to keep pace with technological developments. Recommendations: LAW:8643.

LAW:8307 Corporate Finance  1-3 s.h.
Introduction to fundamental principles of corporate finance, including financial statement analysis, valuation of corporate securities and of businesses, capital structure decisions, portfolio theory, and efficient capital markets hypothesis; focus on financial and accounting aspects of corporate decisions than with any particular body of law. Prerequisites: LAW:8331.

LAW:8318 Corporate Governance and Control  1-3 s.h.
Principal issues in creation of appropriate governance and control systems for large publicly-held corporations; questions of corporate structure, shareholder voting rights, duties of directors, derivative suits, indemnification and transfers of control viewed from perspective of Delaware's statutory and common law. Recommendations: LAW:8331.

LAW:8322 Corporate Taxation  3 s.h.
Influence of tax considerations on the structure of corporate transaction, from a merger to a restructuring to a securities offering; examination of primary Internal Revenue Code provisions that affect corporations and their shareholders; corporate formations, dividends, redemptions, liquidations, taxable asset and stock acquisitions, tax-free reorganizations; analysis of statutory and regulatory materials; tax reform proposals. Prerequisites: LAW:8194. Corequisites: LAW:8331.

LAW:8331 Business Associations  3-4 s.h.
Structure, characteristics of both large publicly and closely held corporations; distribution of powers among management, directors, shareholders; fiduciary duties that limit those powers; enforcement of such duties by shareholder suits; may include basic principles of agency, partnership, and limited partnership law.

LAW:8342 Topics in Criminal Law Practice  1-3 s.h.
Substantive and procedural aspects of criminal law not covered in regular College of Law criminal law and criminal procedure courses; students divided into teams (prosecutors and defense attorneys); hands-on exercises designed to reflect substantive criminal law and procedure discussion; jury selection, jury instructions, pretrial motions, client and witness interviews, depositions, investigation; ethical considerations for prosecutors and defense attorneys, including prosecutorial discretion in charging decisions and conflicts of interest. Prerequisites: LAW:8022.

LAW:8348 Criminal Procedure: Adjudication  3-4 s.h.
Adjudicatory phases of the criminal justice system: indictments and the charging process, preliminary hearings, applications for release on bail and pretrial detention, processes of discovery, guilty pleas, jury selection, conduct of criminal trials, sentencing proceedings and post-trial motions, appellate review, collateral remedies; focus on constitutional rights, specifically the Fifth, Sixth, Eighth, and Fourteenth Amendments; statutory provisions, rules of criminal procedure.

LAW:8350 Criminal Procedure: Investigation  3-4 s.h.
Guarantees and rights of the Fourth, Fifth, and Sixth Amendments to the U.S. Constitution against police and prosecutorial practices designed to investigate and prove criminal cases; protection against unreasonable searches and seizures, guarantee against extraction of involuntary confessions, privilege against self-incrimination constraints upon securing confessions (i.e., Miranda doctrine), due process protection against unreliably suggestive identification procedures, right to counsel, protection against inculpatory admissions and identification practices; exclusionary rules and remedies that enforce constitutional guarantees.

LAW:8362 Critical Race Theory  arr.
Race relations and racial discrimination in America from perspectives of the Critical Race Theory movement (CRT); affirmative action, hate speech, queer theory, voting rights, postmodernism, liberalism, Asian-critical theory, Latin-critical theory, federal Indian law, critical white studies; critical race feminism—essentialism, motherhood, lawbreaking, employment law, sexual harassment, global issues.

LAW:8374 Debt Transactions  4 s.h.
Laws and practices of modern lending; procedures for collection of unsecured debts, including enforcement of judgments, exemptions, prejudgment remedies, fraudulent conveyances, statutory liens; secured transactions that involve real property (mortgages) and personal property (security interests governed by Uniform Commercial Code, Article 9); consumer and commercial transactions, counseling hypothetical creditor or debtor clients, understanding realities that shape enforcement of credit agreements.
LAW:8384 Law of Disability Discrimination 1-3 s.h.
Survey of various laws that govern the field of disability discrimination; particular attention to Americans with Disabilities Act, Section 504 of the Rehabilitation Act, The Individuals with Disabilities Education Act, and Fair Housing Act Amendments; emphasis on field of education law, including higher education; how to conduct an accessibility audit.

LAW:8399 Election Law 3 s.h.
The Supreme Court has long declared that the right to vote is fundamental, because it is preservative of all other rights; the right to vote in theory and practice, with focus on its relationship to racial and economic justice; what has been done and what should be done to move us closer to the ideal of political equality; proper role of unelected judges in our democracy; history of the right to vote, "one person, one vote" principle, Voting Rights Act, partisan gerrymandering, voter identification, voter registration, political parties, and campaign finance.

LAW:8407 Topics in Employee Benefits 1-3 s.h.
Survey of major topics in employee benefits law; overview of the plans that are subject to the Internal Revenue Code, ERISA, or both; tax-qualification rules for retirement plans focusing on 401(k) plans; disclosure owed and relief available to plan participants under ERISA; fiduciary responsibility for investment decisions under 401(k) plans; and whether ERISA preempts state and local initiatives to expand health care coverage.

LAW:8415 Employment Discrimination 2-3 s.h.
Legal prohibitions against discrimination in employment on the basis of race, sex, national origin, age; focus on Title VII of the Civil Rights Act of 1964; procedural and remedial problems, elementary issues of proof.

LAW:8421 Employment Law 2-3 s.h.
Rights of employers, employees in unorganized workplaces; legal issues that arise between employers and employees in nonunionized settings; hiring, discipline, termination, minimum wage, covenants not to compete, employment-related intellectual property issues, occupational safety and health, unemployment.

LAW:8428 English Legal System 1 s.h.
Taught in spring London Law Consortium.

LAW:8433 Environmental Law 2-3 s.h.
Role of the legal system in addressing problems of environmental disruption, with special emphasis on air, water, hazardous waste pollution.

LAW:8444 Estate Planning 2-3 s.h.
Introduction to will drafting, use of powers of attorney, and advance directives (topics frequently taught in courses on trusts and estates); taxes that can be imposed upon the transfer of money or other property by gift (the gift tax), at death (the estate tax), and by certain generation skipping transfers (the generation-skipping tax); interrelationship of these taxes with each other and with the income tax. Prerequisites: LAW:8194. Recommendations: LAW:8981.

LAW:8452 European Union Law 2-3 s.h.
Law of the European Union; EU legal and institutional structure; role of the European Court of Justice in elaborating constitutional and administrative law for the EU on the basis of treaties and legislation; principle of free movement; progress of European integration.

LAW:8460 Evidence 3 s.h.
Rules of evidence developed in common-law courts and under statutes; judicial notice; examination of witnesses; privilege and competence; remote and prejudicial evidence; hearsay; burden of proof and presumptions; roles of judge and jury.

LAW:8467 Family Law 3-4 s.h.
Creation, dissolution of marriage and parent-child relationships; lawyer's practical approach to family law problems combined with a broader view of how the law might treat those problems in light of findings from social and behavioral sciences.

LAW:8481 Federal Courts 3 s.h.
Role of the federal courts in our federal system of government; the federal courts' original and appellate jurisdiction; Supreme Court review of state courts' judgments; Congress' power to strip the federal courts of jurisdiction; development of federal common law; federal writ of habeas corpus; abstention doctrines; state sovereign immunity; federal remedies against state and local action; and Congress' power to create non-Article III adjudicative tribunals. Prerequisites: LAW:8006 and LAW:8010.

LAW:8487 Federal Government Contracting 1 s.h.
Specialized litigation forums created by the federal government to remedy contract disputes over federal contracts for goods, services, and construction; similarities and differences between the federal litigation system and the common law of contracts and UCC Article 2 law; assessment of whether the federal litigation forums and policy goals work; related issues most attorneys encounter during their practices.

LAW:8497 Federal Criminal Practice 2 s.h.
Introduction to each step in the criminal process together with instruction in advocacy skills required for the effective practice of law; complete chronology of a typical federal criminal case, from grand jury investigation through post-trial motions; importance of strategic thinking. Prerequisites: LAW:8350.

LAW:8504 Federal White Collar Criminal Law 1-3 s.h.
How corporations and their officers, directors, employees, and agents can violate criminal law; liability imposed under state and federal laws in the United States, criminal liability under laws of other countries; fundamentals of U.S. law; case studies of recent prosecutions involving American corporations.
LAW:8509 Food and Drug Law 3 s.h.
Food and Drug Administration (FDA) as gatekeeper for permission to market prescription drugs and devices; key role in creation and analysis of information on these products; focus on prescription drugs and devices; five theoretical issues—autonomy, trust/agency costs, information, insurance, and markets in health care; substantive legal doctrines including IP, tort, administrative law, health law, and commercial speech; applied administrative law course.

LAW:8513 Foreign Comparative and International Legal Research 1-2 s.h.
Treaty research, locating and identifying documents from international organizations and tribunals, legal research in selected jurisdictions outside the United States; variety of print and electronic sources; research methods in foreign and international law.

LAW:8527 Foreign Relations Law arr.
Introduction to law of foreign relations in the United States; impact of constitutional distribution of powers on conduct of U.S. foreign relations; influence of separation of powers doctrines on conduct of foreign relations, status of international law in U.S. legal system, role of courts in adjudicating issues affecting foreign relations, and controversy over distribution of war powers between President and Congress.

LAW:8533 Forms of Argument/Systems of Belief 2-3 s.h.
Major theories of law relevant to study and practice of law in contemporary America; six distinct operating systems, including legal formalism, legal realism, the legal process school, law and economics, the legal positivist/analytic tradition, and critical legal theory (including legal studies, feminist legal theory, critical race theory); diverse forms of legal argument, including those associated with particular theories of law.

LAW:8551 Family, Gender, and Constitutional History 3 s.h.
Same as HIST:4285.

LAW:8562 Health Law 2-3 s.h.
Major areas of concern in health law; tension between quality, access, costs: may include malpractice, quality control, health care financing, access (insurance, Medicare, and Medicaid), licensing, bioethics (end-of-life decisions, informed consent, surrogacy, organ transplantation).

LAW:8570 Human Rights in the World Community 1-3 s.h.
Introduction to established and developing legal rules, procedures, and enforcement mechanisms that govern protection of international human rights; liberal western and developing world notions of human rights, recent examples of human rights controversies worldwide; international human rights of women.

LAW:8577 Immigration Law and Policy 1-3 s.h.
Legal, historical, social, philosophical, and policy foundations of immigration control; modern debate over immigration; criteria and procedures that govern admission of non-U.S. citizens to the United States for permanent residence and temporary visits; deportation criteria and processes; national security and civil liberties implications of immigration policy; refugees and political asylum; undocumented migrants; acquisition, loss, and significance of U.S. citizenship; focus on U.S. law with introduction to perspectives from comparative and international law; experience analyzing varied fact problems that require strategic decision making and interpretation of complex statutory provisions.

LAW:8584 Insurance 1-3 s.h.
Legal principles of insurance; applicability of general principles of contract formation; principles involved in determining which persons and interests are protected, which risks are transferred, and when rights are at variance with insurance policy provisions; claims process, disposition of disputed claims; adoption of tort principles and statutes to alter common law approach to insurance contracts.

LAW:8593 Federal Indian Law arr.
Specialized body of law allocating power and authority in Indian country that has grown up around native American peoples and their reservations; sovereignty, jurisdiction, federal Indian policy, tribal self-government.

LAW:8594 Interest-Based Negotiation for Lawyers 2-3 s.h.
Theory and practice of interest-based or problem-solving negotiation; acquisition and enhancement of the skills for this approach to negotiation; negotiation exercises.

LAW:8599 International and Comparative Inequality Law 3 s.h.

LAW:8600 International Business Transactions 1-3 s.h.
Legal and practical issues in international trade and investment; typical private transactions, such as the sale of goods (documentary sales transaction, INCOTERMS, letters of credit, agency, distribution), transfer of technology (franchising, licensing), and direct investment across national borders; how private international sales, investment, and licensing transactions are structured to permit private businesses to minimize and plan for the risks associated with conducting business on a global scale.

LAW:8615 International Commercial Arbitration arr.
Formation and enforcement of agreements to enter arbitration in order to settle international business disputes; recognition and enforcement of arbitral awards, process of arbitrating an international business dispute; role-playing exercises to hone advocacy and decision-making skills.

LAW:8618 International and Comparative Family Law 1-3 s.h.

LAW:8620 International Intellectual Property Law
Overview of international intellectual property law; comparison of U.S. and foreign law relating to patents, copyrights, trademarks; principal multinational agreements relating to intellectual property, including Paris Convention, Berne Convention, TRIPs Agreement; implementation of these agreements within domestic law of United States and other countries. Recommendations: at least one other intellectual property course.

LAW:8622 International Environmental Law
Laws and institutions developed by the international community to deal with international environmental problems, including those of the atmosphere (acid rain, ozone depletion, radioactive fallout, climate change), hydrosphere (land-based sea pollution, sea-based vessel pollution, transboundary groundwater diversion), lithosphere (hazardous waste disposal, toxic pollutants, decertification), biosphere (driftnet fishing, endangered elephants, loss of tropical rainforests).

LAW:8626 International Humanitarian Law
Examination of modern international law of war (referred to as law of armed conflict or international humanitarian law); purposes, sources, and principles of this body of law; specific provisions; emphasis on responding to terrorism and other forms of asymmetrical warfare, use of weapons of mass destruction and chemical and biological weapons, and intersection between international humanitarian law and international human rights; legal and policy issues related to international humanitarian responses to natural disasters. Recommendations: LAW:8570 or LAW:8649.

LAW:8629 Taxation of International Business Transactions
Introduction to U.S. aspects of international taxation and international tax policy issues; how the United States taxes foreign persons on income they derive from U.S. sources; taxation of U.S. persons on their worldwide income; United States bilateral tax treaty network, under which many of the statutory rules regarding the taxation of foreigners are modified or supplanted; solving problems that illustrate the operation of the Code and regulations. Prerequisites: LAW:8194. Corequisites: LAW:8331.

LAW:8631 International Trade Law: Basic Norms and Regulations
Basic norms and legal framework of international trade as expressed in the GATT/WTO regime and U.S. trade laws; issues raised by regional trade blocs such as NAFTA; controversies such as the economic and philosophical justifications for, and objections to, free trade from a variety of perspectives.

LAW:8634 International Transacting Skills
Key negotiation concepts and skills necessary to successfully negotiate international deals through a series of role simulations involving cross-border joint ventures, international project finance deals, and deal-making in developing countries; students engage in one or more simulated negotiations each session, followed by debrief—discussion of how negotiation concepts and features of international transactions, introduced in readings, played out in negotiation dynamics.

LAW:8643 Introduction to Intellectual Property
Introduction to some of the most important intellectual property rules; goals and theories underlying these rules; common ways in which ideas may be protected—from basic form of protection (secrecy and trace secrecy) to exclusive rights granted over inventions (patents) and creative works (copyright), and concluding with rights related to market-based identities (trade and service marks); brief exploration of ways in which debates over intellectual property rights have permeated modern culture.

LAW:8647 Competition Policy and Innovation
Important issues at intersection of federal competition policy and intellectual property law; competition policy referenced as antitrust laws; competition policies that emanate from intellectual property laws or other regulatory provisions; exclusionary practices, collusion and joint ventures, vertical integration, and procedural issues.

LAW:8649 Foundations of International Law
Introduction to fundamentals of international law; focus on aspects of international law that concern interests in the United States; survey of sources, methodology, and major doctrines of international law within framework of understanding diverse jurisprudential approaches; international law’s relationship to U.S. domestic law and institutions; procedural aspects of international law involving international institutions, including the International Court of Justice; foundation course for students interested in international trade, business, family law, human rights, environmental law, and an interest in European Union law.

LAW:8658 Jurisprudence
Exploration of questions central to jurisprudence by looking at positions that have been adopted by legal positivist, natural law theory, and sociological models of jurisprudence (i.e., is there more to legal argument than the strategic battle for a favorable judicial ruling? How would one have to conceive of legal reasoning if one were a judge? Are there right answers to legal questions? Do they presuppose a necessary connection between law and morality? Is any exchange of pros and cons merely a spectacle created in order to hide from the dumbfounded public that legal reasoning does not really matter?); comparative dimension provided in readings with background in civil law.
LAW:8666 Law and Development 2-3 s.h.
Origin of development law and institutions that were created in order to advance it, including the World Bank and International Monetary Fund.

LAW:8670 Labor Law 3-4 s.h.
How national labor law regulates labor relations in the private sector; law relating to unionized employees and firms; right of employees to organize into unions; limits of concerted activities by employees; scope and provisions of collective bargaining; enforcement of the collective bargaining agreement; rights of individual employees in collective units and in labor organizations; lawyer's role in dealing with judicial, administrative, and arbitral tribunals involved in enforcing labor law; lawyer's role in complex interrelationships between policy, statute, judicial, and administrative decisions.

LAW:8680 Law and Economics 3 s.h.
Introduction to economics analysis of law; how economic reasoning is used to explain and predict the effects of legal rules; fundamental areas of American law (e.g., property, contracts, torts, criminal law); use of economic efficiency as a normative criterion for evaluating legal rules; efficiency compared to various moral concepts to evaluate such rules.

LAW:8698 Law in the Muslim World 2-3 s.h.
International and comparative law issues relevant to countries in the Muslim world: legal cultures, institutions, rules, actors, processes of several jurisdictions including Afghanistan, Saudi Arabia, Iran, Iraq, Algeria, Nigeria, Palestine, Pakistan; Islamic sharia law as practiced in Sunni and Shiite countries; the role of church versus state, fundamentalism versus secularism, as manifested in the legal system; tension between communitarianism and individualism in modern constitutionalism; intertwining of customary and religious legal practices; first, second, and third generations of human rights; international law on issues such as terrorism, self-determination; women's rights, including polygamy, divorce, child custody, inheritance. Requirements: junior or senior standing.

LAW:8709 Introduction to French Law 2-3 s.h.
Introduction to laws of France, characteristic features, and role of main institutions; civil law, contacts, tort, family law, commercial law, criminal law, labor law; visits to a French law school, Paris Court, and Ecole of Magistrature National (ENM), the National Judge School in Bordeaux. Summer abroad program.

LAW:8711 The Legal Profession 1-3 s.h.
Exploration of various aspects of history, structure, organization and function of legal profession; effective practice strategies; ethical and practical challenges of legal practice in different settings (i.e., working for judges, small and big firms, solo practice, corporations, non-profit organizations, public sector, internationally); readings, interviews, and discussion sessions with practicing attorneys; development of professional portfolios; practice of professional skills including effective communication, professional legal writing, and interviewing.

LAW:8712 Legislation 2-3 s.h.
Issues related to legislation and legislative process at state and federal level; introduction to legislation, legislative process, legislative advocacy, statutory drafting, statutory interpretation, and constitutional issues; role of lawyers in legislative process and formation of public policy.

LAW:8720 Mediation: Theory and Practice 3-4 s.h.
Essential characteristics; comparison of mediation with litigation and other alternative dispute resolution processes; stages of mediation: confidentiality; enforceability of agreement; ethical problems, particularly lawyer-mediator; student role playing; short writing assignments.

LAW:8726 Mergers and Acquisitions 3 s.h.
Significant legal and financial aspects of business combination transactions; transaction documents (e.g., stock purchase agreements, asset purchase agreements, merger agreements); valuation of companies and pricing of deals; legal and financial considerations affecting the structuring of deals; tender offers and their regulation under the Williams Act, tender offer rules; fiduciary duties of target board, including Revlon duties and the Unocal standard; anti-takeover devices (e.g., poison pills and staggered boards, deal protection devices, freezeout transactions); state anti-takeover statutes. Prerequisites: LAW:8331.

LAW:8733 Narrative Strategies for Lawyers 1-3 s.h.
Fiction writing; narrative nonfiction writing techniques; use of narrative in the legal context; workshop format to read and critique stories, published works, and works students have written.

LAW:8736 Natural Resource Law 2-3 s.h.
Survey of federal natural resources law; emphasis on current legal issues and focus on judicial resolution of disputes; history of public land law, constitutional issues in federal control of natural resources, environmental planning, wildlife protection, public land management, fisheries and marine resources, onshore and offshore minerals; history and politics of natural resources law, aspects of practicing in this area; various resources that pose different sorts of problems, regulatory responses to these problems used to build a toolkit of regulatory models that can be helpful in solving any resource problem.

LAW:8742 Negotiations 2-4 s.h.
Nature and theory of negotiations, diverse rhetorics (including the rhetoric of legal argument) relevant to conduct of negotiations, conflict between ethics and effectiveness; readings from game theory, social psychology, anthropology, rhetoric and ethics.

LAW:8751 Nonprofit Organizational Effectiveness I 3 s.h.
LAW:8752 Nonprofit Organizational Effectiveness II

LAW:8763 Patent Law
All aspects of U.S. patent law; patent claims, adequacy of disclosure, statutory subject matter, validity, inequitable conduct, infringement, remedies, varied specialized doctrines; focus on recent pronouncements from the Court of Appeals for the Federal Circuit. Recommendations: LAW:8615.

LAW:8770 Payment Law
Law that governs methods by which businesses and consumers typically pay for goods and services in modern economy; legal rules applicable to traditional paper-based payment system, including negotiable instruments (checks and notes) and bank collection of checks; modern payment methods (credit cards, debit cards, wire transfers); focus on Articles 3, 4, and 4A of the Uniform Commercial Code and related federal law and regulations.

LAW:8771 International Finance
International banking and securities transactions; major national markets of the United States, Europe, and Japan, and offshore markets; major areas of international regulation and policy, such as capital adequacy, clearance, and settlement.

LAW:8789 Professional Firms
Structure and substance of modern professional firm through in-depth studies of law firms, physician groups, and similar associations; topics include choice of organizational form, firm governance (e.g., expulsion, grabbing and leaving, and covenants not to compete), and basic business planning.

LAW:8791 Professional Responsibility
Public and private professional responsibility of lawyers; organization of the profession; its economics, ethics, and sociology.

LAW:8793 Products Liability
In-depth liability for defective products based on negligence, warranty, and strict tort theories.

LAW:8796 Property II
Continuation of LAW:8037; limits on landowner’s use of property by private agreements, judicial actions, public regulations; problem areas (servitutes, nuisance, eminent domain); constitutional limits on government activities adversely affecting private property, community planning, zoning, other forms of local land use control; discrimination related to land development, housing; effectiveness of private ordering, judicial decisions, legislative enactments, administrative processes for resolving conflicts over use of land resources; relationships between law and other disciplines in forging solutions to land use issues; law as instrument for achieving societal objectives regarding land use.

LAW:8819 Remedies
Legal and equitable remedies by which the law corrects injustice and redresses legal wrongs; remedies for tortious wrongs, including damages and injunctive relief; remedies for breaches of contract, including damages, specific performance, recession, reformation; law of restitution, with emphasis on restitutious remedies (quasi-contract, constructive trust, equitable lien).

LAW:8825 Roman Law
Case-based introduction to Roman law; principles of Roman law ranging from standards of evidence to trial procedures to various topics in civil and criminal law, including family law and the law of delict. Recommendations: some background in Roman history. Same as CLSA:3151, HIST:3451.

LAW:8856 Securities Regulation
Regulation and sale of securities to the public under the Securities Act of 1933 and state blue-sky laws; remedies provided through the Securities Act; regulation and litigation under the Securities Exchange Act of 1934, which focuses on companies with publicly-traded securities. Prerequisites: LAW:8331.

LAW:8877 Sex-Based Discrimination
Survey of sex-based discrimination and legal responses in the United States and worldwide; American context — constitutional guarantees and various statutory guarantees, including Title VII of the Civil Rights Act of 1964 and Title IX of the Education Amendments of 1972; global context — examination of various regions of the world, emphasis on France, South Africa, and countries with majority Muslim populations; issues involving customary law, affirmative action/quotas, and constitutional reform.

LAW:8879 Sports Law
Exploration and understanding of the many ways in which law and lawyers intersect and impact the multi-billion-dollar industry that is high school, collegiate, and professional sports; basic legal foundation for those who are merely curious as well as those considering legal representation for players, coaches, teams, leagues, schools, media, or other sports related institutions and individuals; common contractual processes and provisions, judicial oversight of institutional self-governance and commissioner enforcement, antitrust implications of leagues, labor law, gender issues, intellectual property, criminal and torts law.
LAW:8877 State and Local Government 1-3 s.h.
Allocation of decision-making authority in society; allocation between public and private decision makers; allocation among governmental units, and among public institutions; principles and policies that underlie legal doctrines and the relationship of those principles and policies.

LAW:8891 State and Local Taxation 3 s.h.
Limitations on state taxing powers under the United States Constitution, including Commerce, Due Process, and Privileges and Immunities Clauses; subnational jurisdictions, particularly states with an emphasis on sales tax and corporate income taxes, gross receipts taxes, and excise taxes; issues relating to e-commerce.

LAW:8917 Substitute Decision Making for Incapacitated Individuals 1-2 s.h.
Types and forms of substitute decision making for individuals whose decision making capacity is impaired due to conditions such as dementia, mental disabilities, or mental illnesses and who need a surrogate (or substitute decision maker) to make decisions about matters such as finances; health care, personal care, living arrangements; financial powers of attorney; guardianships; conservatorships; advance directives including living wills, health care powers of attorney, out-of-hospital do-not-resuscitate orders (OOH-DNR); representative payees; introduction to probate court procedures and processes.

LAW:8919 Survey of Work Law 2-3 s.h.
Introductory survey of four types of legal regulation of the workplace: labor law, employment discrimination, law of private employment, and law of public employment.

LAW:8929 Taxation of Partnerships 2-3 s.h.
Introduction to federal tax treatment of partnerships and limited liability companies, the most common business entities in use in the United States today; classification of entities as partnerships for federal tax purposes; formation of partnership and subsequent contributions to partnership capital; flow-through tax treatment of partnership operations; tax-sensitive allocations of items of partnership income, deduction, credit and loss; partnership distributions and related tax-sheltering strategies, liquidation or sale of partnership interests; death or retirement of partners, tax treatment of partnerships compared with S corporations. Prerequisites: LAW:8194.

LAW:8936 Estate and Gift Tax 1-3 s.h.
Justification for wealth taxation, effectiveness of current law, and alternative methods of wealth taxation; two key wealth transfer taxes—estate tax and gift tax; emphasis on identification of tax base and taxpaying unit; may include income tax effects which flow from an individual's death, income taxation of grantor trusts, and related income tax issues. Corequisites: LAW:8194.

LAW:8939 Title Examination and Selected Real Estate Transactions 2 s.h.
Examination of abstracts of title to real property and preparation of resulting title opinion; drafting and interpretation of legal description to real property; subdivision of real property; negotiating and drafting basic contractual and transfer documents involved in typical real estate transactions.

LAW:8954 Trademarks and Unfair Competition Law 2-4 s.h.
Law of unfair competition with primary emphasis on trademarks; policies underlying unfair competition law, creation and establishment of trademark and trademark-like rights, enforcement of those rights, non-trademark concepts of false advertising, rights in one's persona; traditional doctrinal components and skill-based exercises; for students interested in trademark and unfair competition law, specifically and as part of a broader business law practice. Recommendations: LAW:8643.

LAW:8961 Select Issues in Transnational Litigation 1-2 s.h.
Transnational litigation as any litigation involving a foreign element (usually an American party in a foreign court or a foreign party in an American court); litigation that seems completely domestic and turns into a transnational one (when discovery, interim measures, or enforcement are sought overseas); encountering elements of transnational litigation in today's global economy; in-depth study of a few representative topics; emphasis on all relevant aspects of transnational litigation (practice, doctrine, policy, theory).

LAW:8977 Advanced Trusts and Estates Practice 2 s.h.
Wide range of current issues in modern family estate planning; difficult non-tax issues in family estate planning, difficult tax-sensitive planning issues affecting clients of modest means, difficult complex tax planning issues affecting wealthy clients. Prerequisites: LAW:8981.

LAW:8979 Trusts and Estates II arr.
Substantive provisions of wills and trust instruments; recurring construction problems and pitfalls in drafting; powers of appointment; future interests and how they operate in complex trusts; impact of rules of policy restricting the disposition of property, including the rule against perpetuities. Corequisites: LAW:8981.

LAW:8981 Trusts and Estates I 1-4 s.h.
Transmittal of wealth within the family; policy of donative freedom, with focus on property law, including intestate succession, wills, lifetime transfers in trust or otherwise, powers of appointment, future interests; experience drafting a will, trust, or other estate planning document; for 4 s.h., additional classes on federal estate, gift, generation shipping transfer taxes, their effect on wealth transfer.
LAW:8987 Veterans Benefits Law  
Theory of veterans’ benefits law and introduction to skills necessary to represent veteran clients at every stage of the U.S. Department of Veterans Affairs’ adjudication process; how many veterans struggle to navigate the complex VA benefits system without assistance of counsel; law that governs administration and adjudication of these benefits; fundamental law of the VA’s claims adjudication process; dispute resolution and federal agency litigation practice; what is required to effectively represent veterans in their appeals for much needed benefits. Recommendations: completion of administrative law.

LAW:8992 Water Law  
Legal schemes for securing and using water rights in surface water and groundwater for private and public uses in the United States; riparian and prior appropriation doctrines of water allocation, groundwater management regimes, federal water management and regulation, and interstate and transboundary allocation devices; evolving role of science, economics, and policy in water allocation law; does not address issues of water quality, which are covered in environmental law.

LAW:9010 Appellate Advocacy I  
Experience based on an assigned fictitious case: writing an appellate brief asserting the client’s position, and arguing the case before a panel of students, faculty, community attorneys.

LAW:9021 Van Oosterhout Baskerville Moot Court Competition  
Single-elimination tournament culminating in the final four advocates arguing before a panel of judges; advocates write a portion of the brief, argue for and against the issue they briefed. Prerequisites: LAW:9010.

LAW:9028 Jessup Moot Court Competition Team  
Participation as team member in Jessup International Moot Court Competition; preparation of memorials in fall, travel to February regional rounds; travel to international competition in Washington, D.C., for top two teams. Prerequisites: LAW:9010.

LAW:9033 National Moot Court Competition  
Participation by third-year students as law school’s representatives in the regional Moot Court competition (fall semester), and in judging intramural Moot Court competitions (spring semester). Requirements: placement as one of four finalists in LAW:9021.

LAW:9037 Advanced Moot Court Competition Team  
Advanced Moot court team; members are top advocates from previous year’s Van Oosterhout/Baskerville competition. Fall of third year.

LAW:9038 Jessup International Moot Court Competition  
Participation by second-year students in intramural regional- and national-level moot court competition in international law; intensive criticism in appellate brief writing and oral argument. Prerequisites: LAW:9010.

LAW:9046 Moot Court Board  
Experience as member of the Moot Court Board administering the Appellate Advocacy Program, researching appellate cases used in the program, judging appellate arguments. Requirements: membership based on performance in LAW:9010.

LAW:9051 National Arbitration Competition Team  
Eight finalists from spring intramural arbitration competition represent the College of Law at the National Arbitration Competition in fall of second or third year.

LAW:9060 Trial Advocacy  
Training in basic skills of trial advocacy; focus on particular aspects of trial technique (direct examination, cross-examination, handling documents, making objections, expert witnesses, jury selection, opening statements, closing arguments); pedagogical emphasis on learning by doing with immediate feedback by classmates, faculty, and outside attorneys or judges with subsequent videotape critiques; full-scale trial, from filing of pretrial motions to rendering of a jury verdict conducted by student co-counsel before a visiting Iowa judge and jury of lay people. Prerequisites: LAW:8460.

LAW:9061 Advanced Trial Advocacy - Stephenson Competition  
Review and expansion of topics presented in the initial trial advocacy course; preparation and application of these principles in the Stephenson trials; introduction to additional advanced problems such as the evidentiary issues raised in the trial problem. Corequisites: LAW:9060.

LAW:9062 Trial Advocacy Board  
Administration of Trial Advocacy Program and Stephenson Competition; research and writing in connection with trial problems and readings used in program; critique of performances of trial problems. Prerequisites: LAW:8460 and LAW:9060.

LAW:9066 Stephenson Trial Advocacy Team  
Student participation as College of Law representatives in Stephenson Trial Advocacy Competition. Prerequisites: LAW:8460.

LAW:9115 Law Review  
Performance of substantive tasks to produce a first-rate scholarly journal; writing a substantial note; comprehensive legal research experience; analysis of complex legal issues with enhanced critical-reasoning skills and command of the legal standard, The Bluebook citation system; selection of students that transfer to UI College of Law after their first year and rising second-year students is based on the Write-On Competition.

LAW:9118 Student Journal Editor—Law Review  
Experience on the Iowa Law Review editorial staff: managing production, overseeing business operations, administering student writing program, selecting and editing articles for publication, supervising student research and writing. Eligibility based on previous writing for the journal. Prerequisites: LAW:9115.
LAW:9124 Journal of Corporation Law 1-2 s.h.
Experience editing articles and writing commentaries for The Journal of Corporation Law, a student-operated scholarly publication that examines subjects of current importance to businesses and the bar.

LAW:9127 Student Journal Editor—Journal of Corporate Law
Experience on The Journal of Corporation Law editorial staff: managing production, overseeing business operations, administering student writing program, selecting and editing articles for publication, supervising student research and writing. Eligibility based on previous writing for the journal. Prerequisites: LAW:9124.

LAW:9142 Transnational Law and Contemporary Problems Journal 1-2 s.h.
Experience researching and writing on issues in international and comparative law for the journal Transnational Law & Contemporary Problems. Requirements: second- or third-year law standing.

LAW:9145 Student Journal Editor—TLCP Journal arr.
Experience researching, writing, and editing on issues in international and comparative law for the journal Transnational Law & Contemporary Problems. Requirements: second- or third-year law standing.

LAW:9163 Journal of Gender, Race and Justice 1-2 s.h.
Academic year experience on The Journal of Gender, Race & Justice: writing two journal pieces, including a recent development and a note or a comment, and performing office duties. Requirements: second- or third-year law standing.

LAW:9166 Student Journal Editor—Gender, Race and Justice arr.
Experience on The Journal of Gender, Race & Justice editorial staff: managing student writing program, overseeing business operations and production, selecting symposium topic and participants, selecting and editing all publications pieces; eligibility based on writing and editing experience.

LAW:9251 Legal Practice Capstone 3-7 s.h.
Preparation for professional settings in which junior attorneys are expected to manage assignments from several different supervisors at once and execute projects in areas of law not formally studied in law school; variety of legal projects covering an array of doctrinal areas; identities of participating faculty members and nature of assigned projects revealed when course commences (e.g., junior attorneys in large and mid-sized law firms often discover day-to-day who their next supervisors are and what their next projects will be). Requirements: J.D. standing and in final year of study.

LAW:9302 Clinical Law Program—Internship arr.
Experience working directly with faculty members on cases and in-house program; full participation in interviewing, fact investigation, negotiation, courtroom proceedings.

LAW:9307 Clinical Law Program—Externship arr.
Experience representing clients through legal assistance offices in eastern Iowa, under supervision of faculty members and staff attorneys.

LAW:9322 Field Placement: Judicial arr.
Close work with a federal district court judge or state appellate judge conducting research and drafting a wide variety of legal memoranda, orders, and opinions; assist in hearings and perform other duties generally associated with a judicial clerkship; weekly meetings with a faculty supervisor to discuss student's work in chambers; participation in biweekly classroom discussions.

LAW:9331 Field Placement: General arr.
Experience in nonprofit organizations, government agencies; unpaid.

LAW:9335 Summer Legal Placement 1-3 s.h.
Externship opportunities for direct involvement in activities characteristically performed by attorneys (e.g., research and writing, document drafting, client interviewing and counseling, fact investigation, negotiations, court appearances); in-depth exposure to as many facets of the actual practice of law as practicable in each externship.

LAW:9346 British Legal Methods Clinical Program 3 s.h.
British Law externship; placement in London law office under guidance of barrister or solicitor; seminar and enrollment in course on English legal system taught by faculty of King's College, University of London.

LAW:9380 Courts Colloquium 1 s.h.
Opportunity to learn about inner workings of American judicial system through the lens of many judges; each semester centered on a theme (i.e., Iowa Courts, State Supreme Courts); sessions led by judges who, based on their positions, fit within selected theme.

LAW:9404 Field Placement: Corporate Law arr.
One-semester placement at a Delaware court; students typically assigned to many of the same tasks required of judicial clerks, may include corporate law issues. Prerequisites: LAW:8331.

LAW:9413 Health and Elder Law Practicum 1-6 s.h.
Opportunity to participate in research involving current health and elder law and policy issues, in collaboration with public health agencies, legislators, professional organizations, and advocacy organizations.

LAW:9423 Tutorial arr.
Different types of pedagogical techniques.

LAW:9424 Tutorial 1-4 s.h.
Work under faculty supervision; may involve substantive area of the law of jurisprudential ideas as they appear in various intellectual spheres; tutorials.
LAW:9429 Intellectual Property Advocacy  1-4 s.h.  Integrates teaching of substantive intellectual property law with development of oral and written advocacy skills in intellectual property field; builds on earlier learning in preparation for practice of law.


LAW:9444 LL.M. Tutorial  1 s.h.  Requirements: LL.M. candidate.


LAW:9455 Medical Tutorial for Law Students  arr.  Participation on medical and/or surgical rounds under supervision of attending physician; didactic sessions on legal, medical, and ethical issues arising from the clinical experience, and issues such as peer review, credentialing, quality assurance, cost containment, AIDS, reproductive technology; recent developments in medical technologies. Cosponsored by Carver College of Medicine. Prerequisites: LAW:8562.

LAW:9460 SJD Tutorial  5 s.h.  Thesis work under supervision of Doctor of Juridical Science (S.J.D.) committees; dissertation committee chairs conduct an irregular series of meetings to learn about and discuss issues common to research and writing of each thesis involved; students develop full thesis proposals and draft individual chapters; forum provided for workshopping student work and development of students' abilities to discuss and critique legal scholarship; for all S.J.D. students during their two semesters of residency at the College of Law.

LAW:9473 Writing Tutorial  arr.  Writing project on a subject or topical area specified by the supervising faculty member; group meetings; writing tutorial.

LAW:9481 Supplementary Writing  arr.  Supplemental writing project that is related to a student's course, but goes beyond the requirements for the course, and is supervised by the faculty member who teaches the course.

LAW:9486 Directed Research and Writing  arr.  Research and writing project unrelated to any substantive course, supervised by a faculty member.

LAW:9490 Independent Research Project  arr.  Work under faculty supervision; research.


LAW:9503 Advanced Immigration Law and Policy  1 s.h.  Examination of issues arising out of contemporary problems of immigration law and policy; topics vary, may include critical analysis of initiatives for national, state, and local immigration reform; traditional class-based component, experiential component, advanced legal research component, and rigorous writing requirement. Requirements: LAW:8577 or legal clinic experience.

LAW:9511 Advanced Problems in International Law and Policy  arr.  Relationships between international law and several political visions of a world order; the United Nations Charter; other visions that have historically characterized United States, Western European, Russian, Chinese, Islamic, and other perspectives; how several of these historical perspectives appear to be at work in current conflicts involving U.N. Security Council, ISIS and other terrorist organizations, Ukraine, South China Sea, European Union, Eurozone; conflicts and potential for international law to aid in their resolution.

LAW:9518 Advanced Topics in Corporate Law  arr.  Wide range of topics; theory of the firm, fiduciary duties, corporate counseling issues, history of corporate law, and so forth. Requirements: one law or business course in corporate law.

LAW:9528 Advanced Topics in International Law  arr.  Contemporary problems of public international law and policy; issues arising from armed conflict, use of force, pacific settlement of disputes; human rights law and policy (individual civil, political, economic, social, and cultural rights; group rights such as self-determination, development, environment, peace); trade and development; environmental law and policy (e.g., climate change, species extinction, pollution).

LAW:9537 Appellate Adjudication Seminar  3-4 s.h.  Introduction to skill and art of writing appellate judicial opinions; brief, preliminary study of appellate jurisdiction and procedure; group responsibility for deciding a number of cases pending before regional appellate courts (e.g., the Iowa Supreme Court, the United States Court of Appeals for the Eighth Circuit); students study briefs and conduct additional research as appropriate, conference cases sitting as a mock appellate court, assign and prepare opinions, solicit votes, and write one or two opinions.

LAW:9549 Capital Punishment  arr.  Overview of the death penalty as presently applied in America; moral issues; long-term trends limiting the use of the death penalty in the United States and abroad; legal issues and Eighth Amendment jurisprudence that has developed since the 1960s regarding limits on the exercise of juror discretion, jury selection, proportionality, the execution of minors, racial discrimination, mens rea requirements, capital appeals and collateral attacks, and death penalty lawyering; critique of death penalty bills proposed in recent years for Iowa.
LAW:9550 Capitalism
Economic and moral aspects of capitalism as a system for organizing a society's economic activity; major topics including the beginnings of capitalist theory in Smith, Marxist critiques of capitalism in 19th century, capitalism and its critics in the Gilded Age and Progressive Era, the Great Depression and Keynesianism, modern defenses and criticisms of capitalism in Hayek, Habermas, Friedman, Rawls, and others.

LAW:9552 Child Maltreatment and Child Welfare System
Coercive state intervention through child welfare system to protect children from maltreatment by parents and other caretakers; definitions of child abuse and neglect as defined by statutes and case law, reporting laws, civil child abuse and neglect proceedings, foster care and out-of-home placement of children, termination of parental rights, role of attorneys and guardians ad litem in child abuse and neglect proceedings.

LAW:9557 Constitutional Interpretation Seminar
How the United States Supreme Court interprets the Constitution; particular emphasis on substantive due process and equal protection doctrine. Corequisites: LAW:8260.

LAW:9559 Corporate Ethics
Examination of ethical issues that businesses and their attorneys confront in multiple contexts; particular emphasis on analyzing the meaning of ethical behavior, approaches to ethical decision making, issues of sustainability, development of social enterprise business models, and attorney's role in counseling corporate clients on ethical issues. Prerequisites: LAW:8331.

LAW:9563 Topics in Criminal Procedure
In-depth look at criminal procedure topics not addressed or discussed briefly in basic criminal procedure courses, including jury selection, trial strategies, bond hearings, litigating suppression motions, sentencing advocacy, inner workings of courtrooms, and mass incarceration.

LAW:9573 Cultural Property/Heritage
Concept of cultural property, measures for its protection, impact of these measures on the transfer of cultural items; traditional art and architecture, biological and fossil material, human remains; contexts in which issues have arisen, such as stolen cultural property, property acquired during armed conflict and in colonial settings, and property collected in the field or excavated; international, national, and state law, including UNESCO convention on illicit transfer of cultural property, U.S. Archaeological Resources Protection Act, Native American Graves Protection and Repatriation Act; how developing professional ethics codes affect the concept of cultural property.

LAW:9582 Deals
Economic structure of complex commercial transactions as memorialized in agreements including bank credit facilities, indentures, underwriting agreements, other documents governing equity financings and financings involving convertible or preferred securities, venture capital agreements, securitization documents, business combination agreements, joint venture and shareholders agreements, limited liability company operating agreements, project finance documents; commercial agreements and how sophisticated parties order their private relationships to achieve efficient results. Prerequisites: LAW:8331.

LAW:9616 Seminar on the First Amendment
Issues decided in the Supreme Court's unfolding jurisprudence under the First Amendment; varied topics from year to year.

LAW:9631 Higher Education and the Law
Practice of law in and for a complex institution; problems confronting attorneys in higher education, doctrinal issues prevalent in a university setting; focus on real or hypothetical problems considered in light of background reading rather than doctrinal analysis.

LAW:9639 History of Regulation of Smoking and Tobacco
Regulation of smoking and tobacco use; history, beginning with 19th and early-20th centuries; state statutes and case law; OSHA, EPA, and FDA regulations; class action litigation, involvement of law firms in formulating tobacco company strategies, use of medical studies, economic history of the tobacco industry.

LAW:9650 Capitalism
Economic and moral aspects of capitalism as a system for organizing a society's economic activity; major topics including the beginnings of capitalist theory in Smith, Marxist critiques of capitalism in 19th century, capitalism and its critics in the Gilded Age and Progressive Era, the Great Depression and Keynesianism, modern defenses and criticisms of capitalism in Hayek, Habermas, Friedman, Rawls, and others.

LAW:9656 Topics in 19th-Century American Legal History
Exploration of selected focus topics, may include developments in the law of the home and the law of the workplace (free labor, worker immigration, apprenticeship, indentured labor, slavery); women's legal history; land issues and various Homestead Acts; Blackstone in America; Reconstruction of the Constitution after the Civil War; The National Archives—which houses American legal historical documents—displays the phrase, "What is past is prologue;" legal history that explains how we got to the legal present and to understand what is the law, you have to know how something got to be the law. Same as HIST:7256.

LAW:9681 Elder Law
Qualification for Medicaid, elder abuse and neglect, discrimination in employment and elsewhere, retirement pension planning and taxation, elderly patients' rights in nursing homes; conservatorships and guardianships.

LAW:9692 Innovation, Business, and Law Colloquium
Varied topics; antitrust, intellectual property, corporate and securities law, and the interfaces between those disciplines; readings, discussion.
LAW:9701 International Criminal Law
Law of genocide, war crimes (including gender crimes), crimes against humanity, terrorism, human trafficking, money laundering, the International Criminal Court, alternatives to prosecution including national truth commissions, civil compensation, official apologies, selective amnesties; strengths and weaknesses of international criminal law in response to mass atrocity; practical considerations that limit and permit effective functioning of international criminal law.

How does the law seek to restrain use of force in armed conflict? When may sovereign states lawfully take up arms? Once war begins, what methods may states and soldiers employ? How does and should the law of war deal with non-state actors, notably terrorists and private military contractors? Must the world reassess its answers to these questions in light of geostrategic developments since 9/11? When and why is a soldier’s obedience to illegal orders an acceptable excuse? Is the Nuclear Non-Proliferation Treaty a success or failure?

LAW:9717 Iowa Medical Innovation Group Seminar
Team of law, medicine, engineering, and business students observe medical procedures, interview surgical and other medical personnel, and originate an idea for a medical device; design and produce figures or prototype, reports on patentability, and draft patent application; design business model for marketing with required legal documents, which may include entity documents and licensing documents; law students procure necessary intellectual property rights, business association documents, contracts, and licensing agreements.

LAW:9720 UI Center for International Finance & Development
Study of problems and issues in the complex world of international finance and development; focus on the International Monetary Fund and the World Bank; research and writing a new issue for the UICIFD web site.

LAW:9723 Seminar on Islamic Law and Government
Islamic legal and political legacy from formative period until modern time; critical analysis of logic and context of development; development of jurisprudential, legal, and political literature; overview of theories and practices of governance in Islam beginning with Caliphate system and ending with modern nation-state models. Same as RELS:6723.

LAW:9758 Law and Lawyers in Literature
Fundamental societal issues and ethical questions examined through discussion of literary works, including novels and plays by writers such as Camus, Coetzee, Dostoyevsky, Durrenmatt, Faulkner, Ibsen, Kafka, Melville, Schaffer, Thucydides.

LAW:9787 The Law of the Frontier: U.S. 1820-1870
How law really functioned at the edges of the nation's jurisdictional limits; earlier patterns of power, adjustments for environmental circumstances; difference between concepts of law and justice.

LAW:9803 Law and Social Science
Fundamental legal concepts and theories built on empirically testable assumptions about human behavior and decision making; testing common sense assumptions against relevant psychological and social neuroscience research; focus on domains of criminal law and criminal procedure.

LAW:9811 Law of War, Peace, and Military Affairs

LAW:9818 Legal Issues: Intercollegiate Athletics
Legal issues affecting college and university athletics and athletes; includes drug testing, recruitment, gender equity (Title IX), NCAA regulations, endorsement contracts, coaching contracts, trademark licensing, and broadcasting rights.

LAW:9826 LL.M. Seminar
Basic research and analytical methodologies for the international and comparative law fields; workshop approach to project proposals, drafts.

LAW:9838 Selected Topics in Comparative Law
Selected focus topics in different offerings.

LAW:9841 Notable American Trials: Trial Skills
Trial skills and strategy; real trial transcripts, contemporary accounts of the selected trials, secondary literature evaluating what actually happened in the courtroom and relevant history; skills of opening and closing argument, voir dire, direct and cross examination, witness selection, use of exhibits.

LAW:9849 Nonprofit and Philanthropic Organizations
Issues in law and policy relating to philanthropic and nonprofit institutions; creation, role, nature, and history of nonprofit entities; tax exemption, tax treatment (including property and donor tax issues); political and legislative activities; roles of members, directors, officers; problems of external regulation, accreditation, ethics; special issues for religious organizations, community foundations, private foundations, universities; development of philanthropic and nonprofit activity in foreign jurisdictions.

LAW:9855 Policy Lab Seminar
Application of legal skills to real world policy problems; work in teams to investigate a live issue, conduct necessary research, talk to stakeholders, prepare a legal work product (proposed legislation, regulation, doctrinal changes) and a policy justification for that proposal; focused instruction on a specific policy space, general instruction in tools and methods used to analyze policy and design solutions; independent research on particular issues within that space; presentations; working through challenges that arise during process.
LAW:9863 Patent Prosecution Seminar 3-4 s.h.
Drafting seminar on patent application preparation and prosecution; student drafting exercises and presentations on advanced patent law topics; administrative rules and procedures governing practice before the U.S. Patent and Trademark Office; for students who plan to practice patent law. Prerequisites: LAW:8643.

LAW:9877 The Future of Public Law
Addresses slowly developing sense of crisis in public law worldwide, arising from attempt to use a model of law as an autonomous force in society that arose in the development of Western legal traditions as a way of resolving private disputes and only later applied to resolution of disputes between private citizens and the state; how this model is called upon to resolve disputes of great political salience involving various state or supra-national actors increasingly in the modern world; can public law provide what is expected of it, and is public law an experiment that has run its course?

LAW:9882 Public Health Law
Introduction to scope, function, and history of governmental activities and programs encompassed by public health regimes (primarily in the United States); legal and constitutional powers and duties of states to create prerequisites for health of population as a whole; limitations on exercise of that power to restrict individuals interests (inter alia) in liberty, autonomy, privacy, and property; tensions and conflicts that arise when collective action on behalf of public/common good constrains what the state deems to be acceptable risks triggered by actions of private individuals.

LAW:9912 Selected Issues in Family Law
In-depth look at an issue or set of issues in family law; relevant cases, statutes, scholarship; class visits or on-the-job observations with community members who play roles in the family law process being examined.

LAW:9920 Federal Criminal Sentencing
Sentencing as a key stage of the criminal justice system; purposes of sentences, guilty pleas, and plea bargaining; procedural rights during the sentencing process; types of sentencing statutes, federal guidelines, and the federal death penalty; supervised release, probation, and revocation of supervised release and collateral; consequences and sanctions.

LAW:9941 State Constitutional Law
Power of state courts to independently interpret state constitutional provisions that are identical or similar to the federal counterparts; various approaches taken by state courts with respect to this issue; in-depth analysis of cases where a state court has departed from the federal interpretation. Prerequisites: LAW:8280.

LAW:9959 Supreme Court Seminar
Supreme Court practice, procedure, jurisdiction; the art of opinion writing; in-depth analysis of cases on the court’s pending docket; writing briefs, conducting research, conferencing cases sitting as a mock Supreme Court, assigning and preparing opinions, soliciting votes of colleagues; preparation of two opinions.

LAW:9990 Wrongful Convictions and the American Criminal Justice System
Over 300 innocent persons in the United States have been exonerated through DNA evidence after being convicted of crimes they did not commit since 1989; how wrongful convictions occur, how they are remedied, how future injustices can be prevented; introduction to criminal appeals and postconviction proceedings; examination of cases of wrongful convictions; common factors that contribute to conviction of innocent; challenges of proving innocence under statutory and constitutional law; how the system can be reformed to prevent wrongful convictions.

Law Study Abroad

LWAB:8230 Program in Comparative Law in Bordeaux, France
Intensive course work in France taught by professors from Iowa and France. Five-week courses in May and June.

LWAB:8240 London Law Consortium
Study abroad program for students from seven law schools (Iowa, Georgia, Utah, Kansas, Missouri-Columbia, Indiana-Bloomington, Chicago-Kent); American and British law taught by faculty drawn from the seven schools and British universities; clinical law program, work with British barristers and solicitors.

LWAB:8250 Law Study Abroad at Peking University School of Transnational Law
Exchange study program at Peking University of Transnational Law in China.

LWAB:8825 International and Comparative Study Abroad

LWAB:9220 Law Study Abroad at Bucerius University
Exchange student study at Bucerius Law School, Hamburg, Germany. Fall semester.

LWAB:9223 Law Study Abroad at Catolica University
Exchange student study at the University of Católica in Lisbon, Portugal.

LWAB:9226 Law Study Abroad at Radboud University Nijmegen
Exchange student study at Radboud University in Nijmegen, Netherlands.

Certificate Program
University of Iowa Center for Human Rights (p. 1003)
University of Iowa Center for Human Rights

**Director, Center for Human Rights**
- Adrien Wing

**Associate director, Center for Human Rights and director, human rights certificate program**
- Greg Hamot

**Assistant director, Center for Human Rights and associate director, human rights certificate program**
- Amy Weismann

**Undergraduate certificate: human rights**

**Web site:** [http://uichr.org](http://uichr.org)

Human rights concern the inherent dignity of all human beings and the promotion and protection of that dignity regardless of race, color, gender, sexual orientation, religion, culture, nationality, birth, or other status. The Certificate in Human Rights broadens students' understanding of human rights issues and helps them learn how to use an interdisciplinary approach to identify solutions.

Course work for the certificate is drawn from units across the University of Iowa. It prepares students to examine societal problems critically and to design specific solutions to human rights dilemmas in a wide range of areas, such as civil governance, the situations of women and racial and sexual minorities, child welfare, socioeconomic development and well-being, hunger and poverty, education, health, immigration, ecological sustainability, and mass violence.

The Certificate in Human Rights is administered and awarded by the College of Law (p. 969).

**Undergraduate Program of Study**

- **Certificate in Human Rights**

**Certificate**

The Certificate in Human Rights requires 18 s.h. of credit. The certificate program is open to current University of Iowa undergraduate students and to all individuals who hold a bachelor's degree and are not enrolled in a graduate or professional degree program. Students must maintain a g.p.a. of at least 2.00 in work for the certificate. They may count a maximum of 6 s.h. of transfer credit toward the certificate with approval from the certificate program's faculty advisory group.

Individuals must declare their intent to earn the certificate. They must consult with the Certificate in Human Rights advisor to complete a plan of study; see the Certificate in Human Rights web site for details.

The Certificate in Human Rights requires the following course work.

Philosophical foundations and contemporary issues in human rights—both of these (6 s.h.):

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>HRTS:2115</td>
<td>Introduction to Human Rights</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>PHIL:3430</td>
<td>Philosophy of Human Rights</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

Human rights in practice—all of these (total of 12 s.h.):

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>HRTS:3905</td>
<td>Topics in Human Rights</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>HRTS:3910</td>
<td>Human Rights Advocacy</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>HRTS:3920</td>
<td>Seminar in Human Rights Praxis: Supervised Internship</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

Contact the certificate program advisor to learn about additional University of Iowa courses that relate to human rights. Individual students who would like to make substitutions for required courses must meet with the certificate program advisor; then they must submit a petition form to the program's faculty advisory group.

**Courses**

**HRTS:2115 Introduction to Human Rights** 3 s.h.

Analysis and evaluation of the international human rights program; relationship between human rights and international law. Same as IS:2115.

**HRTS:3895 Human Rights and Community Development** 3 s.h.

Exploration of connections and tensions between human rights as defined by member states of the United Nations; meaning and practice of community development, especially but not exclusively, in the United States; focus on critical thinking, in-depth discussion of readings, group work, and individual writing.

**HRTS:3900 Child Labor and International Human Rights** 3 s.h.

Complexity of child labor in global, regional, national, and local contexts; international human rights system, current programs and strategies for reducing or eliminating abusive child labor. Same as IS:3900.

**HRTS:3905 Topics in Human Rights** 1-3 s.h.

Examination of emerging human rights issues from an interdisciplinary and international perspective. Same as IS:3905.

**HRTS:3906 Human Rights Systems: Institutions and Mechanisms Enforcing and Implementing Human Rights** 3 s.h.

Beginning of modern human rights era in 1948 and newly formed United Nations as one of the few institutions acting to protect human rights; present day aspiring advocates confronted by bewildering array of institutions to which they might bring human rights concerns; human rights enforcement mechanisms from an advocate's point of view; shortcomings of human rights enforcement and how it can be made better; broad definition of advocacy; legal and nonlegal conceptions of enforcement.

**HRTS:3910 Human Rights Advocacy** 3 s.h.

Theoretical foundations and critical issues for international human rights advocacy and international humanitarian movements. Same as IS:3910.
HRTS:3915 Human Rights and the Arts  3 s.h.
Ways in which violations of and struggle for human rights have affected and been affected by literary, musical, visual, architectural, and theatrical/dramatic arts in various countries past and present; art considered as expression, as market of identity, and as historical document.

HRTS:3920 Seminar in Human Rights  arr.
Praxis: Supervised Internship
Supervised internship in human rights praxis; focus on field-based advocacy and human rights frameworks.

HRTS:4283 U.S. Women's History as the History of Human Rights  3-4 s.h.
History of human rights in the United States traced through the perspective of women; aspects of women's experience (social, political, intellectual) related to fundamental human rights—right to a nationality, right to life, liberty and personal security, right to freedom of movement, right to take part in the government of their country, right to own property; these and other rights specified by the United Nations in the Universal Declaration of Human Rights, 1948; different history of men and women enjoying these rights; how human rights have been constructed and experienced in the United States from the era of colonial settlement to present. Same as HIST:4283, AMST:4283, GWSS:4283.
Carver College of Medicine

Dean
• Debra A. Schwinn

Executive associate dean
• Donna Hammond

Associate dean, clinical and translational science
• Patricia L. Winokur

Associate dean, student affairs and curriculum
• Christopher Cooper

Associate dean, faculty affairs and development
• Lois J. Geist

Associate dean, cultural affairs and diversity
• Sherree A. Wilson

Associate dean, information technology
• Boyd Knosp

Associate dean, graduate medical education
• Mark C. Wilson

Associate dean, clinical affairs
• Douglas Van Daele

Associate dean, graduate and postdoctoral studies
• Daniel Tranel

Assistant deans
• David Asprey, Steven Craig, Amy Lee, Denise Martinez, Greg Nelson, Nancy Rosenthal

Undergraduate majors: medical laboratory science (B.S.); nuclear medical technology (B.S.); radiation sciences (B.S.)

Professional degree: M.D.

Graduate degrees: M.A.; M.M.E.; M.P.A.S.; M.S.; D.P.T.; Ph.D.

Web site: http://www.medicine.uiowa.edu

The Roy J. and Lucille A. Carver College of Medicine is an integral part of the University of Iowa. It contributes to the education of thousands of University students, is home to ground-breaking research in a wide array of disciplines, and provides a statewide health care resource.

The Carver College of Medicine is the only college in Iowa that offers a curriculum leading to the Doctor of Medicine. It also offers a Bachelor of Science in medical laboratory science, nuclear medicine technology, and radiation sciences (see “Undergraduate Programs of Study” later in this Catalog section) as well as Master of Science and Doctor of Philosophy degrees in several disciplines; the Master in Medical Education; the Master of Physician Assistant Studies; and the Doctor of Physical Therapy (see “Graduate Programs of Study” later in this section).

Doctor of Medicine and other health sciences students have a number of opportunities to gain experience in medical clinics, community hospitals, and a major academic medical center. M.D. graduates may pursue further training in the specialties of family medicine, internal medicine, surgery, and pediatrics at one of 13 University of Iowa-affiliated residency programs in six Iowa cities.

The college also participates in the education of students in the Colleges of Dentistry, Nursing, Pharmacy, and Public Health and in the life-sciences and health-related programs of the College of Liberal Arts and Sciences, the College of Engineering, and the Graduate College.

Health professionals from throughout the Midwest take part in the college’s year-round continuing medical education programming, updating their knowledge and skills through refresher courses, clinics, and conferences. The college also offers a variety of services that support Iowa physicians and community hospitals.

In addition to providing education and resources for physicians and other health care organizations, the college addresses broad public issues of distribution and organization of health care services. Its faculty members advise and serve on national, state, and regional health planning councils, health boards, and various health agencies.

Accredited by the Liaison Committee on Medical Education of the American Medical Association and the Association of American Medical Colleges, the Carver College of Medicine meets the requirements of all state licensing boards. Its M.D. diploma admits the holder to all privileges granted to graduates of all medical colleges before such boards. All other professional programs administered by the college are accredited by their respective accrediting bodies.

Professional Program of Study
(M.D.)

The Doctor of Medicine is a four-year program that prepares students to practice primary care medicine and to pursue further education and training in specialized areas of medicine. For a description of the M.D. curriculum and information about admission to the program, financial support, and academic rules and procedures, see Doctor of Medicine (p. 1031) in the Catalog.

Undergraduate Programs of Study

The Carver College of Medicine offers a Bachelor of Science with majors in medical laboratory science, nuclear medicine technology, and radiation sciences. The medical laboratory science major is offered through a partnership with Allen College, in Waterloo, Iowa. See Medical Laboratory Science (p. 1046), Nuclear Medicine Technology (p. 1060), and Radiation Sciences (p. 1092) in the Catalog.

Undergraduate study in the Carver College of Medicine is guided by the following academic rules and procedures.
Health Insurance, Immunizations
All health professions students are required to provide proof of health insurance coverage annually. Contact the University Benefits Office or visit its web site.
All health sciences students must show proof of health examinations and screenings annually. For more information, contact Student Health & Wellness and see Requirements and Forms on its web site.

Application for Degree
Students who want to be considered for graduation must submit an Application for Degree with the Office of the Registrar through ISIS before the deadline for the session in which the degree is to be conferred. Students who have fulfilled the requirements for a minor must indicate this on the degree application form filed through ISIS so that completion of the requirements for the minor can be verified and noted on their transcript.

Academic Recognition
The University of Iowa and the Carver College of Medicine recognize academic achievement every fall and spring semester.

GRADUATION WITH DISTINCTION
Graduating students may be recognized for their scholastic achievement upon recommendation by their academic program and with the dean's approval. Graduation with distinction, high distinction, or highest distinction is determined by both the cumulative and the University of Iowa grade-point average. Highest distinction requires a g.p.a. of 3.85 or higher; high distinction requires a g.p.a. of 3.75 to 3.84; and distinction requires a g.p.a. of 3.65 to 3.74.

To graduate with distinction, students must have completed a minimum of 60 s.h. of graded course work at the University of Iowa. Both S (satisfactory) and A-F (letter) grades are included in the total semester hour total. However, S grades are not calculated into the grade-point average. Radiologic technology certificate course grades are not included in the grade-point average and are not considered graded course work.

Students graduating with distinction have a notation added to their transcript and diploma. To be recognized for distinction, students must have completed 45 of their final 60 s.h. and earned the required grade-point average before their final semester of graduation.

DEAN'S LIST
Undergraduate students who achieve a g.p.a. of 3.50 or higher on 12 s.h. or more of University of Iowa graded course work during a given semester or summer session and who have no semester hours of I (incomplete) or O (no grade reported) during the same semester are recognized by inclusion on the Dean's List for that semester. Students may qualify for the Dean's List with fewer than 12 s.h. of graded credit if deemed appropriate by the college.

PRESIDENT'S LIST
University of Iowa undergraduate students who achieve a g.p.a. of 4.00 on 12 s.h. or more of University of Iowa graded course work and who have no semester hours of I (incomplete) or O (no grade reported) for two consecutive semesters (excluding summer sessions) are recognized by inclusion on the President's List.

Financial Support
Students are eligible to apply for undergraduate financial aid. Scholarships, grants, loans, and part-time job placement are administered by the University's Office of Student Financial Aid. Part-time work in related areas is sometimes available.

Registration, Credit, Grading

REGISTRATION
Information about tuition and fees, registration, and deadlines is available from the Office of the Registrar. Students who add or drop a course after registration or who register late are assessed a fee. Each course dropped after the deadline results in a W (withdrawn) on the transcript (see Changes in Registration below). Students are not allowed to register for full-semester courses after the second week of the semester or the first week of the summer session. Students must register for off-cycle courses before the first day of the course.

The maximum permitted registration for fall and spring semesters is 18 s.h. per semester. The maximum registration for summer session varies: 4 s.h. for the four-week session; 9 s.h. for the eight-week session; 9 s.h. for the six- and eight-week sessions combined; 12 s.h. for the four-week session and the eight-week session; and 12 s.h. for the four-, six-, eight-, and twelve-week sessions combined. Students may register for a maximum of 16 s.h. of fall semester or spring semester course work during early registration. Students must obtain permission from the head of the division to register for more than the maximum semester hours allowed.

CHANGES IN REGISTRATION
Courses may be added with the signatures of the advisor and the course instructor at any time during the first one-fifth of the course. They may be dropped at any time during the first two-thirds of the course. Approval is required from the dean of the Carver College of Medicine for all other changes in registration and is granted only in extraordinary circumstances. Students are assigned a mark of W (withdrawn) for any course dropped after the first one-fifth of the course. Students whose drop of one or more courses results in a registration of 0 s.h. for the semester must follow the procedure for withdrawal from the University instead of the add/drop procedure.

Students who have registered for courses offered for variable or arranged credit may change the number of semester hours with the signatures of the instructor, the advisor, and the head of the division at any time before the end of the first two-thirds of the course.
Other changes in registration (such as to audit for zero credit) may be made only during the first one-fifth of the course.

It is a student's responsibility to see that the change of registration form is approved by the necessary individuals and is delivered to the Registrar's Service Center. Changes in registration become effective on the date the completed form is submitted to the Center.

Withdrawal of Registration
Students may withdraw their registration without academic penalty at any time before the end of the first four-fifths of the course, but no credit is subsequently given. Later withdrawal results in automatic assignment of
an F. Students who withdraw are not reinstated after the deadline for that session.

AUDITING COURSES

Students may register to audit a course with approval of the appropriate program director and course instructor. In addition to obtaining these signatures, students must register for zero credit in the course to be audited. The mark of AUS (audit successful) is assigned if a student's attendance and performance are satisfactory; if they are unsatisfactory, the mark of AUU (audit unsuccessful) is assigned. Courses completed with a mark of AUS do not meet any college requirement and carry no credit toward graduation. Auditing may not be used as a second-grade-only option.

COURSES OFFERED BY OTHER UNIVERSITY OF IOWA COLLEGES

Students who enroll in courses offered by other University of Iowa colleges are governed by those colleges' rules in matters regarding the courses. See Policy Governing Undergraduate and Professional Students Enrolled in Courses Outside Their Own College or Degree Program.

IN-RESIDENCE REQUIREMENT

The in-residence requirement may be met by earning the final consecutive 30 s.h. in residence at the University of Iowa, or 45 of the last 60 s.h. in residence, or an overall total of 90 s.h. in residence.

Nonresident instruction includes course work and correspondence study at other colleges, universities, and institutions. Undergraduate course work in other University of Iowa colleges counts toward in-residence requirements.

Because the Carver College of Medicine partners with Allen College for the medical laboratory science major, students are not held to the University of Iowa in-residence requirement.

DUPICATION AND REGRESSION

Duplication occurs when students take the same course more than once or when they take a course that duplicates the content of a course they already have completed satisfactorily. Regression occurs when students take a course that is less advanced or at a lower level than one in the same subject that they already have completed satisfactorily. Duplication and regression are assessed by the registrar. Semester hours earned by duplication or regression do not count toward graduation.

MINIMUM GRADE REQUIREMENT

Students must earn a g.p.a. of at least 2.00 each semester in all college work attempted, all work undertaken at the University of Iowa, and all graded work attempted after admission to the Carver College of Medicine. Students enrolled in a program that uses the pass/fail/honors grading system must pass all courses required to complete the program.

Students must earn a C or higher in professional specialty (modality) courses.

GRADING PROCEDURES

Grading procedures vary from program to program. Students should consult individual program policy statements for information.

PASS/NONPASS

Students have the option of taking elective courses pass/nonpass (P/N) with the permission of the course instructor and/or the department offering the course. Students may register for the P/N grading option from the first day of classes until the last day for undergraduates to add a course; see Academic Deadlines on the Office of the Registrar web site.

To register for a P/N course, the student must print the Grading Option Form, have it signed by the course instructor and the academic advisor, and submit the completed form to the Registrar's Service Center before the published deadline.

Semester hours graded P/N are not used in computing a student's grade-point average. Semester hours graded P count toward graduation; those graded N do not. The college accepts a maximum of 15 s.h. of University of Iowa credit graded P toward the bachelor's degree, and it accepts a maximum of 30 s.h. of credit graded P and/or S from all sources (UI and transfer credit) toward the bachelor's degree. Students must be in good academic standing to be eligible for the pass/nonpass option.

SATISFACTORY/FAIL OR SATISFACTORY/UNSATISFACTORY

A number of courses only use satisfactory/unsatisfactory (S/F) or satisfactory/unsatisfactory (S/U) grading. All students registered for these courses receive a grade of S, F, or U. Students do not need special forms or permission in order to register for S/F or S/U courses.

Semester hours graded S or U are not used in computing a student's grade-point average, but semester hours graded F are used in grade-point average computation. Semester hours graded S count toward graduation; semester hours graded F or U do not.

Students may use course work graded S to fulfill General Education Program requirements and/or the requirements of their major, a minor, or a certificate. The college accepts a maximum of 15 s.h. of University of Iowa credit graded S toward the bachelor's degree, and it accepts a maximum of 30 s.h. of credit graded P and/or S from all sources (UI and transfer credit) toward the bachelor's degree.

SECOND-GRADE-ONLY OPTION

Repeating courses for the second-grade-only option is allowed in extraordinary circumstances. To repeat a course for the second-grade-only option, students must obtain the signatures of the course instructor, the program director, and the dean on a form available from the dean's office; the signed form must be returned to the Registrar's Service Center before the end of the first one-fifth of the course. Both grades remain on the permanent record, but only the second one is used to calculate grade-point average and credit earned. Students using the second-grade-only option for courses that are not part of their major must follow the procedure for the college that offers the course.

INCOMPLETE

A grade of I (incomplete) may be reported if the reasons for inability to finish the course satisfactorily are acceptable to the program director and the course instructor. There also must be evidence that the course work will be finished within a reasonable length
of time, usually by the end of the next academic session. Incompletes not removed by the deadline for submission of final grades for the next session result in the assignment of a grade of F. A student must work with the instructor so that an incomplete grade may be rectified by official action.

REPORTS TO STUDENTS
Instructors notify any student whose work falls below the minimum acceptable level once the problem is recognized. Grades are reported on a student's transcript, following University protocol. No formal midterm reports are given.

Degrees and Minors
TWO BACHELOR'S DEGREES
Students who want to earn two bachelor's degrees, each from a different college, must contact the University's Office of Admissions. Interested students must complete the degree requirements for both majors, including the residency requirements.

SECOND BACHELOR'S DEGREE
Students who already hold a bachelor's degree and wish to earn an additional bachelor's degree must complete at least 30 s.h. consecutively in the Carver College of Medicine and must meet college and program degree requirements. Individuals interested in earning a second bachelor's degree must apply for admission to the degree program at the University's Office of Admissions.

MINORS
Students graduating from the Carver College of Medicine may earn a minor or minors in any degree-granting department or program in the college outside of their major department or in another college of the University by meeting that department's requirements for the minor.

Academic Progress, Probation, Dismissal
Students are expected to maintain satisfactory academic and professional standards and to demonstrate reasonable progress toward the Bachelor of Science and certificate of completion. Students who fail to maintain satisfactory academic progress or professional standards of behavior as determined by their program may be placed on probation or dismissed from the program. Probation serves as a warning that a student will not graduate unless his or her academic performance and/or professional behavior improves.

Students on probation are restored to good standing by the program director upon evidence that the problem has been corrected. Such action is usually taken at the end of a semester or session. Entering students may be admitted on probation if they fail to meet the minimum stated standards for admission.

Continued unsatisfactory scholarship or unprofessional behavior may result in dismissal from a program. Students dismissed from a program must reapply for admission through the regular, established program admissions process, following review by a faculty committee, at least four months before the requested date of readmission.

Students placed on probation or dismissed from a program are notified by e-mail; copies are placed in their files. An academic probation notation is placed on the transcript.

In order to be restored to good standing, students placed on academic probation during a semester or summer session must have a University of Iowa g.p.a. and a cumulative g.p.a. of at least 2.00 by the end of the next semester (for full-time students) or by the time they have earned the next 8 s.h. (for part-time students). Students on academic probation who fail to meet the grade-point average requirement in the designated time frame for restoration to good standing are subject to dismissal at the end of the semester.

Students are expected to attend classes regularly. Students who miss classes or examinations because of illness are expected to present evidence that they have been ill. Any other absences must be approved in advance by the course instructor.

Any offense against good order committed by a student in a classroom, clinical setting, or laboratory may be dealt with by the instructor or referred to the program director. The instructor reports in writing any disciplinary action taken against a student to the program director. Repeated or exceptional instances are reported to the dean.

Academic Misconduct
PLAGIARISM AND CHEATING
All cases of plagiarism and cheating in the Carver College of Medicine are reported to the dean with a statement of relevant facts. The program director and the instructor may submit recommendations for appropriate disciplinary action.

The individual instructor may reduce the student's grade, including assignment of the grade of F in the course. A report of this action is sent to the student, the program director, and the dean.

The dean, or a faculty committee appointed by the dean, may impose the following or other penalties, as the offense warrants: disciplinary probation, requirement of additional hours for the degree, suspension from the program for a period of time, or recommendation of expulsion from the program.

APPEALS PROCEDURE
Students who want to appeal a decision should appeal in writing to the dean within two weeks after the date of receipt of the decision in writing.

Graduate Programs of Study
The Carver College of Medicine offers graduate programs leading to the M.S. in pathology (p. 1068); the M.S. and Ph.D. in biochemistry (p. 1021), free radical and radiation biology (p. 1040), microbiology (p. 1050), molecular physiology and biophysics (p. 1055), and pharmacology (p. 1071); the Ph.D. in anatomy and cell biology (p. 1015) and physical rehabilitation science (p. 1074); the Master in Medical Education (p. 1044) (M.M.E.), the Master of Physician Assistant Studies (p. 1083) (M.P.A.S.); and the Doctor of Physical Therapy (p. 1074) (D.P.T.).

It also offers a joint M.D./Ph.D. degree through the Medical Scientist Training (p. 1048) Program; see "Joint M.D./Graduate Degrees" in the Doctor of Medicine (p. 1031) section of the Catalog.

Many of the college's faculty members participate in the Graduate College's interdisciplinary programs in genetics (p. 936), immunology (p. 940), molecular and cellular
The center's seven research units conduct the necessary picture of the illness with its underlying neurobiology. The center provides the facilities for research linking the clinical and research aspects of cancer. The Holden Comprehensive Cancer Center (HCCC) coordinates the efforts of University of Iowa faculty and staff in research, education, and clinical programs related to all aspects of cancer. The HCCC is recognized by the National Cancer Institute as an NCI-designated cancer center and has "comprehensive" status, a designation that recognizes the depth and breadth of interdisciplinary cancer research activity taking place at the University of Iowa.

**Iowa Mental Health Clinical Research Center**

The major emphasis of the Iowa Mental Health Clinical Research Center is the study of schizophrenia. The center provides the facilities for research linking the clinical picture of the illness with its underlying neurobiology. The center's seven research units conduct the necessary integrative and interdisciplinary research to advance knowledge about the disease.

**UI Heart and Vascular Center**

The UI Heart and Vascular Center coordinates research and training programs related to cardiovascular diseases. It encompasses several programs: Program Project Grant on Integrative Neurobiology of Cardiovascular Function, Program Project Grant on Cerebral Blood Vessels, Program Project Grant on Oxidative Mechanisms in Vascular Disease, Program Project Grant on Genetic and Signaling Mechanisms in the Central Regulation of Blood Pressure, Program Project Grant on Airway Physiology and Pathophysiology in a Porcine CF Model, Program Project Grant on Gene Therapy for Cystic Fibrosis Lung Disease, a Leducq Foundation Consortium grant, and a Cystic Fibrosis Foundation research and development program. It also coordinates several training programs and a program of other interdisciplinary research supported by a number of individual project grants. The center occupies two floors of cardiovascular research laboratories and administrative offices in the Medical Research Center.

**Facilities**

The Carver College of Medicine consists of twelve buildings containing 1.6 million square feet of space with one building (College of Medicine Administration Building) dedicated to administrative departments only. The other eleven buildings house research space, centers, programs and institutes including the Core Research Facilities which are a collection of centralized laboratories dedicated to developing and providing state-of-the-art research resources to facilitate biomedical research. They are available on a fee-for-service basis to the entire health sciences community as well as outside entities.

The Medical Education and Research Facility houses medical education space and research laboratories, including the Holden Cancer Research Laboratories and the Wynn Institute for Vision Research. It also contains the college's four learning communities. The communities group students who are at different stages in their medical education, encouraging peer-to-peer learning and emphasizing leadership and community service. Each learning community features small-group rooms, study and social spaces, computer workstations, a kitchen area, and staff offices. The Medical Education and Research Facility also houses the Performance-Based Assessment Program, which evaluates students' clinical and communications skills by reviewing simulated physician-patient encounters recorded in mock patient examination suites.

Students acquire clinical-skills experience at the 711-bed University of Iowa Hospitals and Clinics, the Iowa City Veterans Affairs Medical Center, and in affiliated hospitals and ambulatory care centers throughout Iowa. University of Iowa Hospitals and Clinics serves as a tertiary care center for Iowa and portions of adjoining states. Many patients are referred to UI Hospitals and Clinics for care and treatment not available in their home communities.

Eckstein Medical Research Building, currently in the planning stages for future renovations and upgrades, is the home of the Iowa Institute of Human Genetics Genomics Division, Viral Vector Core Facility, Flow Cytometry Facility, and the Biomedical Research Store.
The five basic science departments are housed in the Bowen Science Building and include the Departments of Anatomy and Cell Biology, Biochemistry, Microbiology, Molecular Physiology & Biophysics, and Pharmacology. The Medical Education Building houses research and educational space for the Department of Physical Therapy and Rehabilitation Science (p. 1074). It also houses research space for the Department of Psychiatry (p. 1089) and is the home of the Office of Consultation and Research in Medical Education (OCRME). OCRME is staffed by education specialists from a range of disciplines who serve the faculty; staff, and administrators in all Carver College of Medicine programs. The office provides educational consultation, initiates and cooperates in educational research endeavors, and conducts faculty development activities.

There are teaching laboratories located in the Medical Education Building, the Bowen Science Building, and the Medical Research Facility.

Other buildings that house a wide range of College of Medicine departments, administration, and research activities are the Carver Biomedical Research Building, Westlawn, Medical Laboratories, the Medical Research Facility, the Medical Research Center, and the Multi-Tenant Facility.

The newest building, completed in 2014, is the Pappajohn Biomedical Discovery Building. On the first floor is the Neurosciences Institute. Third and fourth floors house the Fraternal Order of Eagles Diabetes Research Center and the Abboud Cardiovascular Research Center, on the fifth floor is the Auditory Research Group, and on the sixth floor is the Lung Biology Center. The Iowa Institute for Biomedical Imaging is on the lower basement levels housing the 7 Tesla MRI scanner (one of 20 such devices in the U.S.), 3T along with several smaller devices, and a 3-D visualization lab. All researchers in this building are chosen by the Pappajohn Biomedical Institute in which scientists from across the University collaborate to explore high-risk/high-yield scientific questions in the life sciences with the goal of advancing treatments for a wide array of human diseases.

Nondepartmental Courses

Most Carver College of Medicine courses are offered by the college's departments and programs. They are listed and described in the corresponding General Catalog sections; see the links under "Index: Academic Programs" toward the top of this page. The college also offers the following nondepartmental courses.

**MED:3740 End-of-Life Care for Adults and Families** 2-4 s.h.

**MED:5300 Health Informatics I** 3 s.h.
Technological tools that support health care administration, management, and decision making. Requirements: graduate standing. Same as SLIS:5900, RSNM:3195, HMP:5370, IE:5860, IGPI:5200.

**MED:7205 Foundations of Clinical Practice for Physician Assistants** 5 s.h.
Practice and expansion of clinical skills; development of broad understanding of the practice of medicine in social context; strengthening of self-directed learning skills in clinical medicine. Prerequisites: PA:8209. Requirements: Physician Assistant Studies and Services enrollment.

**MED:7215 Foundations of Clinical Practice IV for Physician Assistants** arr.
Basic diagnostic considerations in each of medicine's clinical disciplines, as required of primary care providers.

**MED:8001 Medical Elective** arr.

**MED:8003 Clinical Clerkships** arr.

**MED:8005 Medical Student Research Fellowships**

**MED:8006 Doris Duke Clinical Research Fellowship** 0 s.h.
Clinical research projects under University of Iowa faculty mentorship. Requirements: leave of absence from Carver College of Medicine.

**MED:8010 Introduction to Medical Education at Iowa** 0 s.h.
Introduction to first-year fall courses; advanced concepts in anatomy, biochemistry, cell biology, and clinical reasoning skills; for M.D. students.

**MED:8021 Community Health Outreach I** 0-1 s.h.
Presentations and practical experience working with agencies that provide health care and wellness promotion to communities; substance abuse; child, adolescent, and adult health; aging; interpersonal violence; homelessness.

**MED:8022 Community Health Outreach II** 1-2 s.h.
Presentations, patient-based learning groups, readings, and practical experience working with agencies that provide health care and wellness promotion to communities; substance abuse; child, adolescent, and adult health; aging; interpersonal violence; homelessness.

**MED:8023 Community Health Outreach III** 1-2 s.h.
Presentations, patient-based learning groups, readings, and practical experience working with agencies that provide health care and wellness promotion to communities; substance abuse; child, adolescent, and adult health; aging; interpersonal violence; homelessness.

**MED:8028 Introduction to U.S. Health Care System** 1 s.h.
Structure, function, and finance of U.S. health care system; access, cost, quality, finance mechanisms, reform process.

**MED:8040 Teaching of Physical Exam Skills** 1-2 s.h.
Components of complete physical exam and educational techniques for teaching such skills: teaching of physical exam components to first-year students. Requirements: fourth-year M.D. enrollment.

**MED:8041 Facilitation of Patient-Centered Learning** 1-2 s.h.
Experience in facilitating patient-centered learning groups; case discussion, critique of student presentations and assignments, clinical insight, evaluation of student performances.

**MED:8070 The Examined Life: Writing and Medicine** 1 s.h.

Literature, essays, poetry; discussion of participants' writing; students prepare portfolios of their own writing.

**MED:8071 Career Life Planning** 1 s.h.

Students' individual interests, values, and decision-making processes important in selecting a specialty, engaging in the match process, and integrating oneself into the medical profession; personal career development, culture and climate in which physicians work and learn.

**MED:8072 Evidence-Based Medicine for Clinical Medicine** 1 s.h.

Evaluation of literature and development of critical thinking skills necessary for evidence-based medical practice.

**MED:8073 Biomedical Innovation** 1 s.h.

Introduction to all phases of medical device/technology development; development of knowledge of entire medical innovation process through didactic sessions, faculty, interactions, and interdisciplinary collaboration; interdisciplinary approach; research and development of a novel medical device, therapy, or model of care. Requirements: M.D. enrollment.

**MED:8076 Bioethics and Humanities Seminar** 1 s.h.

Broad range of topics in bioethics and medical humanities, including philosophical principles, clinical ethics, research ethics, medical professionalism, narrative ethics, and historical and cultural aspects of medicine. Requirements: Carver College of Medicine student in humanities distinction track.

**MED:8081 Global Health Issues I** 1 s.h.

Core issues in the current field of global health, including history of global health, health and development, social determinants of health, measuring health and disease, disparities in the American health care system, poverty and health, gender issues and reproductive health, child health, immigrant and migrant health issues, and introduction of major players in global health. Requirements: M.D. enrollment.

**MED:8082 Global Health Issues II** 1 s.h.

Core issues in the current field of global health, including health care as a human right, why the Third World is the Third World, communicable disease issues, outbreaks and pandemics, noncommunicable issues, malnutrition and obesity, cultural context of health care, violence as a health issue, and emergency response and transition to development. Prerequisites: MED:8081. Requirements: M.D. enrollment.

**MED:8083 Global Cross-Cultural Elective** arr.

Cross-cultural medical program with focus on health care problems of a domestic or international community; individually arranged.

**MED:8084 Global Health Seminar** 1 s.h.

Presentations by faculty members, University special guests, and alumni on their current work in global medicine/global health; implementation of global health concepts. Requirements: M.D. enrollment.

**MED:8102 Medical Cell Biology** 2 s.h.

**MED:8105 Foundations of Clinical Practice I** 5 s.h.

**MED:8112 Human Organ Systems I** 8 s.h.

Microscopic structure and function of major and specialized human organ systems; approach integrating normal microscopic anatomy and human physiology. Requirements: M.D. enrollment.

**MED:8115 Foundations of Clinical Practice II** 5 s.h.

**MED:8121 Clinical and Professional Skills I** 3 s.h.

Introduction to concepts of clinical reasoning, communication, physical examination, and evidence-based clinical practice; principles of biomedical ethics; early clinical interactions and placement of classroom experiences into context of patient care through the Longitudinal Clinical Mentor (LCM) program; interaction with students from other health sciences colleges to explore interprofessional approach to caring for patients. Requirements: M.D. enrollment.

**MED:8122 Medicine and Society I** 3 s.h.

Delivery of individual disease prevention/health promotion services; introduction to social determinants of health; influence and impact of culture and community on health care; community resources; application of health and risk assessment to individual patients and self. Requirements: M.D. enrollment.

**MED:8123 Foundations of Cellular Life** 5 s.h.

Genetics, embryology, molecular biology, biochemistry, cell biology and histology; molecular events required for cellular life; how cells grow and interact to form basic tissues of human body; necessary framework to explore six mechanisms of health and disease. Requirements: M.D. enrollment.

**MED:8124 Mechanisms of Health and Disease I** 5 s.h.

Normal and healthy processes within and among mechanisms of oxygenation, metabolism, and genetics/development; first in a series on multisystem mechanisms of health and disease. Requirements: M.D. enrollment.

**MED:8131 Clinical and Professional Skills II** 4 s.h.

Interpersonal skills, lifelong learning, interviewing skills, physical examination skills, ethical issues in patient care, and basic approach to patients in terms of prevention, treatment, and follow-up care. Second in a sequence during preclinical semesters of medical school and continuing as an integrated strand throughout curriculum. Requirements: M.D. enrollment.
MED:8132 Medicine and Society II  
Knowledge and skills related to health promotion and disease prevention from a medicine and society perspective, including impact of behavior, environment, culture, and socioeconomics; identification of major public health problems associated with mechanisms of health and disease. Second in a sequence during preclinical semesters of medical school and continuing as an integrated strand throughout curriculum. Requirements: M.D. enrollment.

MED:8133 Mechanisms of Health and Disease II  
Normal and healthy processes within and among mechanisms of Immunology/Inflammation, locomotion/integument, and neuropsychiatry; second in a series on mechanisms of health and disease. Requirements: M.D. enrollment.

MED:8134 Mechanisms of Health and Disease III  
Abnormalities or disruptions leading to disease within and among mechanisms of oxygenation, metabolism, and genetics/development; third in a series on multisystem mechanisms of health and disease. Requirements: M.D. enrollment.

MED:8199 First-Year Special Study  
First-year special study. Requirements: M.D. enrollment.

MED:8205 Foundations of Clinical Practice III  
Experience practicing and expanding clinical skills and self-directed learning skills in clinical medicine; understanding medical practice in a social context. Prerequisites: MED:8105 and MED:8115. Requirements: second-year M.D. enrollment.

MED:8213 Healthcare Ethics, Law, and Policy  
Ethical and legal aspects of health care delivery.

MED:8215 Foundations of Clinical Practice IV ICD  
Basic diagnostic considerations in each of medicine's clinical disciplines, as required of primary care providers. Prerequisites: MED:8105 and MED:8115 and MED:8205. Requirements: second-year M.D. enrollment.

MED:8221 Clinical and Professional Skills III  
Advanced clinical reasoning skills through focused patient encounters and interactions with special patient populations; emphasis on integration and use of concepts for cost conscious, patient-centered, interdisciplinary care. Requirements: M.D. enrollment.

MED:8222 Medicine and Society III  
Health services organization and delivery; emphasis on community dimensions of medical practice and patient safety. Requirements: M.D. enrollment.

MED:8223 Mechanisms of Health and Disease IV  
Abnormalities or disruptions leading to disease within and among mechanisms of immunology/inflammation, locomotion/integument, and neuropsychiatry; fourth in a series on multisystem mechanisms of health and disease. Requirements: M.D. enrollment.

MED:8224 Mechanisms of Health and Disease Keystone  
Transition between classroom instruction in mechanisms of health and disease and clinical practice; foundational information from mechanisms of health and disease sequence approached from perspective of what is commonly encountered in clinics; application of information to making diagnostic and management decisions of common important clinical problems. Requirements: M.D. enrollment.

MED:8299 Second-Year Special Study  
Second-year special study. Requirements: M.D. enrollment.

MED:8300 Clinical Beginnings  
Orientation to third-year clerkships; technical skills, simulated patient activities, competence with the physical exam.

MED:8301 Community-Based Primary Care  
Introduction; clinical activities, work with community agencies and resources, didactic and conferences. Requirements: M.D. enrollment.

MED:8320 Transition to Clerkships  
Two weeks of skills training prior to start of core clinical clerkships. Requirements: M.D. or M.P.A.S. enrollment.

MED:8401 Medicine, Literature, and Writing  
Insights, freedom, joy, responsibilities, and challenges of a life in medicine; reading, discussion, individual creative writing.

MED:8403 Teaching Skills for Medical Students  
Practical teaching techniques; opportunity for students to develop teaching skills before they become medical residents.

MED:8404 Advanced Teaching Skills for Medical Students  
Opportunity to expand knowledge and experience in medical education; investigation of medical education in students' specialty of interest through literature research and interaction with faculty; primary focus is to design and successfully complete a faculty approved project. Prerequisites: MED:8403. Requirements: fourth-year M.D. enrollment.

MED:8405 Leadership for Future Physicians  
Formal training in multiple aspects of leadership; offers future leaders in health science specialties an earlier opportunity to consider leadership abilities and perspectives; for fourth-year medical, physician assistant, nursing, pharmacy, public health, and dental students. Requirements: health science enrollment.
MED:8410 Patient Safety for Health Professional Students
2 s.h.
Interprofessional experience using multiple pedagogic methods, including team-based simulation to teach about patient safety and teamwork; collaboratively taught by representatives from anesthesia, pediatrics, internal medicine, Office of Consultation and Research in Medical Education, College of Nursing, College of Public Health, and office of UIHC chief quality officer. Same as NURS:3728.

MED:8480 Global Cross-Cultural Clerkship
arr.
Cross-cultural medical program at an international site; focus on health care problems of a specific community; individual educational objectives set in advance.

MED:8499 Individually Arranged Medicine Elective
arr.
Individually arranged elective through the Office of Student Affairs and Curriculum.

MED:9701 Instructional Design and Technology
3 s.h.
Skills and techniques necessary for analysis, design, development, implementation, and evaluation of effective instruction.

MED:9702 Clinical Teaching in Medical Education
3 s.h.
Principles and methods for teaching individuals and small groups in outpatient and inpatient settings. Prerequisites: MED:9701 or PSQF:6205. Recommendations: educational psychology course.

MED:9703 Educational Research and Evaluation
3 s.h.
Research design and program evaluation; approaches relevant to medical education.

MED:9711 Teaching Methods in Medical Education
3 s.h.
Principles and methods for teaching in large and small classrooms. Recommendations: educational psychology course.

MED:9712 Introduction to Educational Measurement in Medical Education
3 s.h.
Classical test theory; overview of medical education assessment methods; practical information for designing and critiquing assessments.

MED:9713 Assessment in Medical Education
3 s.h.
Medical education assessment methods; research methods and literature that support current practices; research project. Prerequisites: MED:9712.

MED:9714 Current Issues in Medical Education
3 s.h.
Selected issues, policies, and research.

MED:9720 Portfolio Project
3 s.h.
Production of individual student portfolios used to integrate knowledge across courses; capstone activity.

MED:9721 Study in Faculty Development
3 s.h.
Academic credit for approved project or other assigned activities for students in the Teaching Scholars program.

MED:9722 Independent Study
arr.

MED:9724 Leadership in Medicine
3 s.h.
Introduction to basic leadership and management theories pertaining to a health care setting; focus on the history of leadership development, various components of leadership, and how these components can be used to be a successful leader/administrator. Requirements: Master in Medical Education degree program enrollment.

MED:9725 Simulation in Medical Education
3 s.h.
Appropriate use of various types of simulation in medical education; how to design, deliver, and debrief a simulation activity; literature supporting use of simulation in medical education. Requirements: Master in Medical Education degree program enrollment.

MED:9726 Curriculum Development in Medical Education
3 s.h.
Curriculum development using knowledge and experience gained from MED:9701, MED:9702, and MED:9711; identification of an area/topic for creation of curriculum; conduction of a needs assessment to identify topics and/or components of curriculum; creation of plan with curriculum goals, learning objectives, methods for evaluation; development of preliminary planning and aspects of implementation and evaluation phases of the model.

MED:9727 Teaching and Assessing Communication Skills in Medical Education
3 s.h.
Explores broad issues related to both teaching and assessing clinician-patient communication skills in medical education; review literature on best practices in clinician-patient communication and on teaching and/or assessing skills among medical learners; explore observation and feedback as key technique in addressing communication skills through observation of peers and learners; video recording of interactions with patients.

Hospital Certificate Programs of Study Courses
The following courses are conducted by University of Iowa Hospitals and Clinics staff.

EMT-Paramedic Program

EMTP:0101 Emergency Medical Technician—Paramedic I
0 s.h.
Preparation for role of entry-level paramedic: comprehension, application, and evaluation of the clinical role; demonstration of technical proficiency in all required skills; demonstration of personal behaviors consistent with professional and employer expectations. Requirements: certification as an emergency medical technician—basic.

EMTP:0102 Emergency Medical Technician—Paramedic II
0 s.h.
Preparation for role of entry-level paramedic: comprehension, application, and evaluation of the clinical role; demonstration of technical proficiency in all required skills; demonstration of personal behaviors consistent with professional and employer expectations. Prerequisites: EMTP:0101.

**EMTP:0103 Emergency Medical Technician — Paramedic III**
Preparation for role of entry-level paramedic: comprehension, application, and evaluation of the clinical role; demonstration of technical proficiency in all required skills; demonstration of personal behaviors consistent with professional and employer expectations. Prerequisites: EMTP:0102.

**Orthoptics Teaching Program**

**OTP:4902 Orthoptics Program** 0 s.h.
Clinical science of binocular vision, ocular motility, and related eye disorders; practical, theoretical training in the Department of Ophthalmology and Visual Sciences two-year program; written, oral and practical national board examinations required at completion. Requirements: bachelor's degree with specific class recommendations.

**Professional Degree**
Doctor of Medicine (p. 1031)

**Departments and Programs**
Anatomy and Cell Biology (p. 1015)
Anesthesia (p. 1019)
Biochemistry (p. 1021)
Cardiothoracic Surgery (p. 1027)
Dermatology (p. 1029)
Dietary (p. 1030)
Emergency Medicine (p. 1036)
Family Medicine (p. 1038)
Free Radical and Radiation Biology (p. 1040)
Internal Medicine (p. 1042)
Medical Education Program (p. 1044)
Medical Laboratory Science (p. 1046)
Medical Scientist Training Program (p. 1048)
Microbiology (p. 1050)
Molecular Physiology and Biophysics (p. 1055)
Neurology (p. 1058)
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Ophthalmology and Visual Sciences (p. 1064)
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Radiation Oncology (p. 1091)
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Stead Family Department of Pediatrics (p. 1105)
Surgery (p. 1108)
Urology (p. 1109)
Anatomy and Cell Biology

Chair
- John F. Engelhardt

Graduate degree: Ph.D. in anatomy and cell biology
Faculty: http://www.medicine.uiowa.edu/dept_primary_apr.aspx?appointment=Anatomy%20and%20Cell%20Biology
Web site: http://www.medicine.uiowa.edu/acb/

The Department of Anatomy and Cell Biology performs three major functions. It teaches human anatomy to students preparing for careers in the health care professions; provides advanced courses, teaching experience, and research training to graduate students preparing for careers in academic research and related scientific fields; and conducts original research on the biological basis of cellular functions and human disease processes.

Preclinical Study
The department contributes to the preclinical education of health care professionals by providing major courses in gross anatomy, cell biology, histology, and neuroscience. The department participates in the Carver College of Medicine’s Medical Scientist Training (p. 1048) Program and the Graduate College’s Molecular and Cellular Biology (p. 953), Immunology (p. 940), Genetics (p. 936), and Neuroscience (p. 955) Programs. On occasion, students are directly admitted to a Department of Anatomy and Cell Biology laboratory by arrangement with the laboratory director.

Graduate Program of Study
- Doctor of Philosophy in anatomy and cell biology

Doctor of Philosophy
The Doctor of Philosophy program in anatomy and cell biology requires a minimum of 72 s.h. of graduate credit. Students in the Ph.D. program work toward the doctorate without an intermediate master’s degree program. They complete courses focused in one of three major areas—molecular medicine and gene therapy, developmental and stem cell biology, or cancer biology—in addition to related background and elective courses. Students also take in lecture and laboratory courses under faculty supervision. The program may be completed in four or five years of intensive, full-time residence.

By the end of their second year of graduate study, anatomy and cell biology students take the comprehensive examination, which assesses their ability to analyze, organize, and apply the information, concepts, and skills acquired during the first two years of study. They define a research problem with their major advisor and formulate a research prospectus.

Subsequent years are devoted primarily to research.

The final Ph.D. examination consists of a public oral defense of the dissertation. The dissertation is based on original research conducted with the guidance of the major advisor and at least four other faculty members on the thesis committee.

Admission
Individuals interested in pursuing a Ph.D. in a laboratory housed in the Department of Anatomy and Cell Biology have two options for admission. The first option is to apply to, and be accepted by, the Medical Scientist Training Program (Carver College of Medicine) or one of the interdisciplinary graduate programs in molecular and cellular biology, immunology, genetics, or neuroscience (Graduate College). These programs accept applicants with a variety of backgrounds in the biological and physical sciences. Each program has specific admission requirements—all include a bachelor’s degree; certain scores on the Graduate Record Examination (GRE) General Test; and for applicants whose first language is not English, specific scores on the Test of English as a Foreign Language (TOEFL). For detailed admission requirements and application information, refer to the section for each program in the Catalog.

The second option is direct admission to a specific laboratory, by arrangement with the laboratory’s director. After such an arrangement has been made, students apply to the Graduate College for admission to the Ph.D. program in the Department of Anatomy and Cell Biology. The department’s graduate admission committee evaluates an applicant’s credentials. Most applicants will have completed a bachelor’s degree with the following undergraduate course work: chemistry through organic chemistry, one semester of biochemistry or the equivalent, one semester of another advanced biology course, mathematics through calculus, one year of physics, and one semester of statistics or the equivalent. Desirable qualifications include an undergraduate major in the biological sciences or chemistry; a master’s degree in the biological sciences, chemistry, or a related area; and scores from a GRE Advanced Test in the applicant’s major area.

Applicants must meet the admission requirements of the Graduate College; see the Manual of Rules and Regulations of the Graduate College.

Financial Support
All students in the Department of Anatomy and Cell Biology receive stipends and tuition support. Sources include training grants from the National Institutes of Health, University of Iowa and departmental fellowships and graduate research assistantships, and individual faculty research grants.

Facilities
The department occupies more than 35,000 square feet in the Bowen Science Building on the University of Iowa health sciences campus. The building houses modern teaching facilities and well-equipped research laboratories. The most modern instrumentation is available, including facilities and equipment for digital microscopic imaging, confocal microscopy, molecular biological techniques, tissue culture, and protein chemistry. Other specialized equipment (e.g., electron microscopes, mass spectrophotometers) is available in other facilities. Through collaborative programs with the Holden Comprehensive Cancer Center and Iowa Cardiovascular Center, faculty and students also have access to outstanding research facilities throughout the University’s health sciences campus.
Courses

ACB:1199 Human Anatomy and Basic Physiology for Radiation Science
Integrative systemic study of the structure and function of the human body; body systems defined and described by their constituent organs; body's most basic cellular level, tissue level, and study of organs which comprise various systems; online course with lectures, assignments, and virtual laboratory study. Requirements: high school biology course.

ACB:3109 Human Anatomy Lab for Health Professions
Regional and systemic approaches to the study of human anatomy, using histological (microscopic) as well as gross (macroscopic) studies. Prerequisites: BIOL:1141. Requirements: ACB:3110 for pre-nursing students.

ACB:3110 Principles of Human Anatomy
Gross and microscopic human anatomy; systemic approach to regional anatomy, with emphasis on clinical relevance; optional tutorial sessions. Offered fall and spring semesters. Prerequisites: BIOL:1141 or BIOL:1411. Requirements: pharmacy, pre-nursing, or associated medical sciences major.

ACB:3113 Human Anatomy Online
Integrative systemic and regional study of the human body's structure. Prerequisites: BIOL:1141.

ACB:3122 Independent Study in Anatomy and Cell Biology
Projects arranged with department faculty members.

ACB:4156 Scanning Electron Microscopy and X-Ray Microanalysis
Microscopy methods for research; all aspects of research, from sample preparation to imaging to data analysis; when to use a particular microscopy procedure; theory, operation, and application of scanning electron microscopy, scanning probe microscopy, laser scanning microscopy, X-ray microanalysis. Requirements: a physical science course. Same as CBE:4156, EES:4156.

ACB:5108 Human Anatomy
Regional dissection, lectures, demonstrations; areas important to physical therapists, particularly the upper and lower extremities. Offered fall semesters. Requirements: physical therapy and rehabilitation science enrollment.

ACB:5203 Gross Human Anatomy for Graduate Students
Regional dissection, lectures, demonstrations, tutorials, discussions, seminars; clinically relevant areas of anatomical radiology, surface anatomy with clinical correlations. Requirements: anatomy and cell biology graduate standing.

ACB:5205 General Histology for Graduate Students
Structure and function of cells, tissues and organs studied at light and electron microscopic levels; advanced study of head and neck tissues. Offered spring semesters. Corequisites: MED:8112. Requirements: graduate standing in anatomy and cell biology or Carver College of Medicine graduate program.

ACB:5206 Graduate Research in Anatomy and Cell Biology
Individual laboratory research training in anatomical sciences.

ACB:5218 Microscopy for Biomedical Research
Basic microscopy methods for research including optics, preparation, and analysis of biomedical specimens; light, fluorescence, confocal, transmitting electron, scanning electron, atomic force microscopes, elemental analysis; immunohistochemistry and stereology techniques; individualized laboratory instruction. Prerequisites: BIOL:2723. Same as MIRC:5218, BIOL:5218.

ACB:5220 Advanced Microscopy for Biomedical Research
Technically advanced microscopy and instrumentation for research; individualized laboratory experience with opportunity to explore applications of microscopy methods. Requirements: for ACB:5220 — an introductory microscopy course; for BIOL:5220 — ACB:4156 or ACB:5218 or CBE:4156 or EES:4156 or MIRC:5218; for MIRC:5220 — an introductory EM course. Same as BIOL:5220, MIRC:5220.

ACB:5224 Graduate Student Seminar
Current research, literature. Requirements: anatomy and cell biology graduate standing.

ACB:6000 Human Anatomy for Advanced Practice
Integrated study of interrelationships between anatomic structure and physiological function in health and disease at various points in the lifespan; mechanisms governing and supporting cellular, organ, and system function; internal milieu; relationship of study to clinical assessment of functional integrity of individual organ systems utilizing pertinent objective and subjective data; implications of pathophysiology for anesthesia and implications of anesthesia for pathophysiology; foundation for clinical practicums and courses in nurse anesthesia. Requirements: admission to anesthesia nursing program. Recommendations: completion of an undergraduate human anatomy and physiology course. Same as NURS:6000.

ACB:6200 Special Topics in Genetics
Current research in a selected field of genetics; different topic each year. Companion to a genetics seminar series. Same as GENE:6200.

ACB:6220 Mechanisms of Cellular Organization
3 s.h.
Current understanding of basic cell biological processes; key experiments that led to guiding insights; mechanisms that cells use for compartmentalization and how those mechanisms are regulated; biogenesis of major organelles (e.g., mitochondria, peroxisomes, nucleus, secretary/ endocytic membrane system); functions of cytoskeleton in cell motility, organelle motility, and cell division. Prerequisites: BIOL:3130. Same as MCB:6220, MPB:6220.

**ACB:6225 Growth Factor Receptor Signaling**
1 s.h.
Mechanisms of signaling by growth factors; cytokines and related molecules that regulate cell proliferation, development, differentiation, and survival; emphasis on molecular mechanisms of signaling, relevance of these signaling processes to various human diseases. Recommendations: BISC:5201 and BISC:5203. Same as MCB:6225, MPB:6226.

**ACB:6226 Cell Cycle Control**
1 s.h.
Cell cycle regulation, DNA damage-dependent cell cycle regulation, redox-dependent cell cycle regulation, cellular senescence. Recommendations: BISC:5201 and BISC:5203. Same as MCB:6226, MPB:6226.

**ACB:6227 Cell Fate Decisions**
1 s.h.

**ACB:6237 Critical Thinking in Biochemistry and Molecular Biology**
1 s.h.
How nucleic acids, proteins, lipids, and carbohydrates interact to influence the function of cells and tissues; how molecules drive signaling pathways and cellular processes essential for biological functions; based on research publications.

**ACB:6238 Critical Thinking in Genetics**
1 s.h.
Current topics in molecular and classical genetics; emphasis on genetic underpinnings of disease; based on primary research publications.

**ACB:6239 Critical Thinking in Cell Biology**
1 s.h.
Understanding subcellular organization and intercellular communication; emphasis on critical thinking and primary research publications.

**ACB:6248 Critical Thinking in Development**
1 s.h.
Current topics in molecular basis of vertebrate development; based on primary research publications.

**ACB:6249 Critical Thinking in Cellular Physiology**
1 s.h.
Control of physiological systems at the cellular level; emphasis on regulation by molecular signaling pathways; literature-based.

**ACB:6252 Functional Neuroanatomy**
arr.
Basic principles of neuroanatomy and neurophysiology; emphasis on human central nervous system; laboratory emphasis on anatomical study of spinal cord and brain. Offered spring semesters. Requirements: physical therapy and rehabilitation science enrollment or graduate standing.

**ACB:6265 Neuroscience Seminar**
0-1 s.h.
Research presentations. Offered fall and spring semesters. Same as PSY:6265, MPB:6265, NSCI:6265, BIOL:6265.

**ACB:7227 Anatomic Study for Teaching**
2-3 s.h.
Experience completing a detailed dissection of a region of the human body; opportunity to create models depicting anatomical concepts. Requirements: enrollment in teaching certificate program.

**ACB:8101 Medical Gross Human Anatomy**
5 s.h.
Complete dissection of the body with regional emphasis stressing relationships to the living system; clinically relevant areas of radiologic imaging, surface anatomy, embryology, and clinical correlations; anatomical knowledge through lectures, small group work, independent activities. Offered fall semesters. Requirements: M.D. enrollment.

**ACB:8114 Medical Neuroscience**
4 s.h.
Basic principles of neurophysiology, neuroanatomy; emphasis on human central nervous system; laboratory emphasis on anatomical study of spinal cord, brain. Offered spring semesters. Requirements: physical therapy and rehabilitation science or M.D. enrollment, or graduate standing.

**ACB:8120 Human Gross Anatomy for Dental Students**
6 s.h.
Exploration of gross anatomy of human body including thorax, abdomen, upper limb; extensive focus on head, neck, and neuroanatomy; regional and systemic approaches; course sequence and assessment blended with general histology for dental students; cadaveric dissections closely follow lecture sequence; emphasis on correlations to dental practice. Offered spring semesters. Requirements: D.D.S. enrollment.

**ACB:8121 General Histology for Dental Students**
4 s.h.
Microscopic study of cells, fundamental tissues, organ systems; emphasis on tooth-related structures. Offered spring semesters. Requirements: D.D.S. enrollment or anatomy and cell biology graduate standing.

**ACB:8201 Gross Human Anatomy for Physician Assistant Students**
6 s.h.
Focused regional dissection with clinical integration through lectures, demonstrations, and tutorials; neuroanatomy, radiology. Offered summer sessions. Requirements: physician assistant studies and services or M.D. enrollment.

**ACB:8250 Integrated Gross Human Anatomy, General and Oral Histology for Dental Students (GRISTO)**
10 s.h.
Anatomy and Cell Biology

Integrated study of morphology of human body at microscopic and macroscopic levels; covers breadth and depth of traditional professional-level anatomy and histology courses; focus on structures of head and neck, oral cavity, and in-depth study of nervous system; combination of traditional lectures, cadaver laboratory dissection, virtual histology laboratories, and supported self-regulated learning strategies. Requirements: D.D.S. program enrollment.

ACB:8401 Advanced Human Anatomy arr.
Regional dissection of the body with emphasis on systems relevant to student's specialty interests; discussion, reading, clinically relevant imaging, embryology. Offered spring semesters. Requirements: fourth-year M.D. enrollment or graduate standing.

ACB:8402 Teaching Elective in Regional Anatomy  2,4 s.h.
Expand knowledge and experience in medical education; investigate educational pedagogy in a laboratory setting coupled with self-directed learning of anatomical content relevant to professional development; prepare, design, and implement four teaching interactions with M1/D1/PA1 students; design a classroom exercise (e.g., interactive lecture, learning activity, computer-based study module) that helps bridge the basic science content with clinical procedure. Requirements: M.D. standing and enrollment in teaching track distinction.
Anesthesia

Chair
- Michael M. Todd

Faculty: http://www.anesth.uiowa.edu/People/Faculty.aspx
Web site: http://www.anesth.uiowa.edu/

M.D. Student Training
The Department of Anesthesia introduces second-year medical students to anesthesia as a specialty; helps third-year students develop concepts and technical skills related to resuscitation, airway management, and care of the unconscious patient; and offers fourth-year students intensive study in the specialty. It offers the following courses for medical students. For course descriptions and prerequisite information, see “Courses” below.

ANES:8301 Clinical Anesthesia 2 s.h.
ANES:8401 Clinical Anesthesia Senior arr.
ANES:8402 Surgical and Neurosciences Intensive Care arr.
ANES:8495 Intensive Care Off Campus arr.
ANES:8498 Anesthesia On Campus arr.
ANES:8499 Anesthesia Off Campus arr.

Postgraduate and Residency Program
The department’s postgraduate and residency program involves diverse clinical experiences, seminars and teaching conferences, and ongoing research activities that help postgraduate students and residents develop the knowledge and skills required of an anesthesia specialist.

Anesthesia Nursing Program
The department coordinates the Anesthesia Nursing Program, a collaboration between the Carver College of Medicine and the College of Nursing. The program, which is open to nurses who hold a bachelor’s degree, prepares nurse anesthetists to serve rural hospitals in Iowa and nationwide. The curriculum provides intensive training in didactic and clinical anesthesia and includes diverse clinical experience as well as classroom instruction, seminars, and clinical case conferences. It includes the following courses. For course descriptions and prerequisite information, see "Courses" below.

ANES:6005 Chemical and Physical Principles of Anesthesia Practice 3 s.h.
ANES:6006 Pharmacology of Anesthesia Practice 3 s.h.
ANES:6007 Basic Principles of Anesthesia Practice 5 s.h.
ANES:6010 Advanced Principles of Anesthesia Practice I 4 s.h.
ANES:6012 Advanced Principles of Anesthesia Practice II 1 s.h.
ANES:6016 Equipment and Technological Principles of Anesthesia Practice 3 s.h.
ANES:6050 Introductory Clinical Anesthesia 2 s.h.

ANES:6051 Clinical Anesthesia I 2 s.h.
ANES:6052 Clinical Anesthesia II 2 s.h.
ANES:6053 Advanced Clinical Anesthesia 2 s.h.
ANES:6054 Obstetrical Anesthesia 2 s.h.
ANES:6055 Rural Anesthesia 2 s.h.

Courses

For M.D. Students

ANES:8301 Clinical Anesthesia 2 s.h.
Clinical instruction in perioperative care of the surgical patient; preoperative evaluation, consideration of coexisting medical problems, intraoperative care, postoperative management; basic airway management; introduction to clinical management of acute and chronic pain; case conferences, simulator training.

ANES:8401 Clinical Anesthesia Senior arr.
Advanced clinical experience in anesthesia management of surgical patients with coexisting medical problems; clinical experience in various forms of anesthesia; general, regional (spinal, epidural, peripheral nerve block) anesthesia; practical experience in airway management; mask ventilation, endotracheal intubation, LMA placement, other alternative airway techniques; medical management of surgical patient under anesthesia; pharmacology, cardiovascular and pulmonary physiology; case conferences.

ANES:8402 Surgical and Neurosciences Intensive Care arr.
Evaluation and treatment of critically ill neurological and post-surgical patients; evaluation of pulmonary function, ventilator management, monitoring and management of hemodynamics, fluid balance, acid-base problems, acute kidney injury, acute neurological events, and advanced monitoring techniques.

ANES:8495 Intensive Care Off Campus arr.
Evaluation and treatment of seriously ill patients in an intensive care unit (other than University of Iowa Hospitals and Clinics); artificial ventilation, evaluation of pulmonary function, monitoring of cardiovascular status, fluid balance and acid base problems, advance monitoring techniques. Prerequisites: ANES:8401. Requirements: 4 s.h. of ANES:8401.

ANES:8498 Anesthesia On Campus arr.
Well defined research project relating to anesthesia; arranged by student with departmental approval.

ANES:8499 Anesthesia Off Campus arr.
Knowledge development in anesthesia work and monitor use; ability to identify respiratory, cardiovascular, and neurologic effects of anesthetic agents; skill in airway management; basic skills in general, spinal, epidural, and peripheral nerve block anesthesia.

For Anesthesia Nursing Students

ANES:6005 Chemical and Physical Principles of Anesthesia Practice 3 s.h.
Basic chemical and physical properties of molecules fundamental to practice of anesthesia; relationship of these properties in relation to physiological processes and pharmacological principles essential in monitoring a patient's physical status and administration of anesthesia medications; basic chemical and physical calculations, properties of substances in solution, measurement of such chemical species, behavior of gases and other fluids, effects of heat transfer, specific chemistry of inhaled and intravenous anesthetics and adjuvant drugs. Requirements: admission to anesthesia nursing program. Same as NURS:6005.

ANES:6006 Pharmacology of Anesthesia Practice 3 s.h.
Builds on content from foundational graduate pharmacology course; focus on safe prescribing, administration, and management of medications used to provide general, regional, or local anesthesia and analgesia for all patient populations across lifespan undergoing varied surgical, obstetrical, or other procedures in any health care setting. Prerequisites: PCOL:6204. Requirements: grade of 2.75 or higher in PCOL:6204 and enrollment in anesthesia nursing program. Same as NURS:6006.

ANES:6007 Basic Principles of Anesthesia Practice 5 s.h.
Overview and integration of anesthetic agents and techniques; patient assessment, preoperative airway evaluation, anesthetic planning, principles of fluid management, and arterial blood gas interpretation; principles of general and regional anesthesia and techniques as they pertain to each surgical specialty; Occupational, Safety and Health Administration (OSHA), The Joint Commission (TJC), and institutional regulations and requirements pertinent to anesthesia practice. Prerequisites: NURS:6006 and NURS:6016. Requirements: grade of 2.67 or higher in NURS:6006 and NURS:6016. Same as NURS:6007.

ANES:6010 Advanced Principles of Anesthesia Practice I 4 s.h.
Special needs and intraoperative anesthetic management of complex patient populations and those with advanced pathologic states; anesthetic techniques for specific surgical subspecialties including pediatrics, obstetrics, neurosurgery, cardiac, vascular, thoracic, transplant, trauma, EENT, dental, and aesthetic or reconstructive procedures; pertinent pathophysiology and anesthetic monitoring and management techniques; clinical case conferences provide opportunities to discuss perianesthetic complications and challenges. Prerequisites: NURS:6007 or ANES:6007. Requirements: grade of 2.67 or higher in NURS:6007. Same as NURS:6010.

ANES:6012 Advanced Principles of Anesthesia Practice II 1 s.h.
Acute and chronic pain treatment modalities for all patients presenting for a variety of medical or surgical procedures across the lifespan. Prerequisites: NURS:6007 or ANES:6007. Requirements: grade of 2.67 or higher in NURS:6007. Same as NURS:6012.

ANES:6016 Equipment and Technological Principles of Anesthesia Practice 3 s.h.
Introduction to gas and anesthesia delivery systems, ancillary equipment, monitoring devices, infusion devices, invasive line placement, airway management equipment, and anesthesia electronic medical record keeping; correlation of applicable chemical and physical principles for use, safe operation, and care of all anesthesia and related equipment. Prerequisites: NURS:6005 or ANES:6005. Corequisites: NURS:6006. Requirements: anesthesia nursing program enrollment. Same as NURS:6016.

ANES:6050 Introductory Clinical Anesthesia 2 s.h.
Initial mentorship in clinical anesthesia; development of basic clinical skills needed for a career as nurse anesthetist; application and integration of theoretical knowledge in clinical setting. Prerequisites: NURS:6006 and NURS:6016. Corequisites: NURS:6007. Same as NURS:6050.

ANES:6051 Clinical Anesthesia I 2 s.h.
Mentored clinical anesthesia experience; advancement and enhancement of clinical skills in providing anesthesia for various surgical subspecialties including general, orthopedic, pediatric, geriatric, gynecologic, urologic, dental, EENT, ambulatory surgery, and invasive diagnostic procedures. Prerequisites: NURS:6050 or ANES:6050. Corequisites: NURS:6010. Same as NURS:6051.

ANES:6052 Clinical Anesthesia II 2 s.h.
Additional mentored clinical anesthesia experience; advancement and enhancement of clinical skills in providing anesthesia for various surgical subspecialties including general, orthopedic, pediatric, geriatric, gynecologic, urologic, dental, EENT, ambulatory surgery, and invasive diagnostic procedures. Prerequisites: NURS:6051 or ANES:6051. Same as NURS:6052.

ANES:6053 Advanced Clinical Anesthesia 2 s.h.
Mentored clinical anesthesia at selected sites; development of advanced clinical skills and critical thinking by providing anesthesia for all surgical specialties and invasive diagnostic procedures in all anesthetizing locations; providing anesthesia for all patients in all settings, including on call emergency surgeries. Prerequisites: NURS:6052. Same as NURS:6053.

ANES:6054 Obstetrical Anesthesia 2 s.h.
Experience delivering analgesia and anesthesia for parturients during labor and delivery process. Same as NURS:6054.

ANES:6055 Rural Anesthesia 2 s.h.
Opportunity to develop experience providing anesthesia and associated health care services at UI-affiliated clinical sites in rural settings. Prerequisites: NURS:6052. Same as NURS:6055.
Biochemistry

Chair
• Charles M. Brenner

Undergraduate major: biochemistry (B.A., B.S.)
Graduate degrees: M.S. in biochemistry; Ph.D. in biochemistry
Faculty: http://www.medicine.uiowa.edu/dept_primary_apr.aspx?appointment=Biochemistry
Web site: http://www.medicine.uiowa.edu/biochemistry/

Biochemistry is the study of basic chemical processes that occur in and govern all living systems. Nearly all areas of the life sciences engage in biochemical research.

Biochemistry graduates with bachelor's degrees often work as research assistants in industry, government, education, or health services; teach in secondary schools; or go on to advanced study in medicine, dentistry, or other areas. Those with advanced degrees pursue careers as teachers, researchers, or administrators in universities and medical schools, government, research agencies, and varied industries.

The Department of Biochemistry offers an undergraduate major and graduate degree programs and determines the curricula for those programs. Undergraduates majoring in biochemistry receive their degrees (Bachelor of Arts or Bachelor of Science) from the College of Liberal Arts and Sciences, and their studies are governed by that college's undergraduate academic policies. Graduate degrees in biochemistry are conferred by the Graduate College.

Undergraduate Programs of Study
• Major in biochemistry (Bachelor of Arts, Bachelor of Science)

Bachelor of Arts, Bachelor of Science
The Bachelor of Arts with a major in biochemistry requires a minimum of 120 s.h., including 57-58 s.h. of work for the major. The Bachelor of Science with a major in biochemistry requires a minimum of 120 s.h., including 69-70 s.h. of work for the major. Students must maintain a g.p.a. of at least 2.00 in all courses for the major and in all UI courses for the major. They also must complete the College of Liberal Arts and Sciences General Education Program (p. 313).

The biochemistry major for the Bachelor of Arts degree provides a rigorous education in biochemical concepts and practice in the laboratory while giving students flexibility to specialize in additional disciplines or to obtain clinical volunteer experience. The B.A. program is intended for most students majoring in biochemistry, including those with pre-medicine, pre-pharmacy, pre-dental, and other pre-health professions interests. It is also appropriate for students earning more than one major.

The biochemistry major for the Bachelor of Science degree is intended primarily for students planning careers in research. The B.S. program prepares students to pursue graduate degrees, such as an M.S., Ph.D., or joint M.D./Ph.D., or to work as research technicians. The B.S. program requires 12 s.h. more credit in science and laboratory electives than the B.A. program does.

The first two years of the curriculum are the same for all students majoring in biochemistry. Students decide to earn a B.A. or a B.S. during the second semester of their sophomore year, in consultation with their biochemistry advisor. Transfer students select the B.A. or B.S. after completing one semester at the University of Iowa and meeting with their biochemistry advisor.

Qualified students in either degree program may graduate with honors in the biochemistry major; see “Honors in the Major” below.

The major in biochemistry (B.A. and B.S.) requires the following work.

Common Requirements (B.A. and B.S.)
All biochemistry majors complete the following course work during their first two years.

All of these:
   - BIOL:1411-BIOL:1412 Foundations of Biology - Diversity of Form and Function 8 s.h.
   - CHEM:1110 & CHEM:1120 Principles of Chemistry I-II 8 s.h.
   - MATH:1850 & MATH:1860 Calculus I-II 8 s.h.

One of these:

   - CHEM:2210 Organic Chemistry I 3 s.h.
   - CHEM:2230 Organic Chemistry I for Majors 3 s.h.

One of these:

   - CHEM:2220 Organic Chemistry II 3 s.h.
   - CHEM:2240 Organic Chemistry II for Majors 3 s.h.

One of these:

   - CHEM:2410 Organic Chemistry Laboratory 3 s.h.
   - CHEM:2420 Organic Chemistry Laboratory for Majors 3 s.h.

All of these:

   - PHYS:1511 College Physics I 4 s.h.
   - PHYS:1611 Introductory Physics I 4 s.h.

All of these:

   - PHYS:1512 College Physics II 4 s.h.
   - PHYS:1612 Introductory Physics II 3-4 s.h.

Additional Requirements for the B.A.
In addition to the common requirements listed above, biochemistry majors who elect to earn a Bachelor of Arts must complete the following work.

One of these:

   - BIOC:3120 & BIOC:3130 Biochemistry and Molecular Biology I-II 6 s.h.
   - BIOC:3140 Experimental Biochemistry 2 s.h.
CHEM:4431 Physical Chemistry I 3 s.h.
CHEM:4432 Physical Chemistry II 3 s.h.

And:

Advanced science electives approved by biochemistry advisor 6 s.h.

Bachelor of Arts students intending to earn advanced degrees in the biological or health sciences are advised to earn at least 4 s.h. in BIOC:3993 Undergraduate Independent Study or BIOC:4999 Research, Independent Study. There are no prerequisites for BIOC:3993. The course involves experience in an active biochemistry research lab, which must be arranged ahead of time with a supervising faculty member. Students may make arrangements directly with the faculty member, or they may request assistance from an undergraduate advisor. Credit earned in BIOC:3993 does not count toward the major, but it does count toward the minimum of 120 s.h. required to graduate.

In order to register for BIOC:4999 Research, Independent Study, students must have completed BIOC:3120 Biochemistry and Molecular Biology I, BIOC:3130 Biochemistry and Molecular Biology II, and BIOC:3140 Experimental Biochemistry. They must have a grade of B-minus or higher in each course. They also must have completed BIOC:3101 Technical Communication in Biochemistry and should have prior research experience (e.g., BIOC:3993 Undergraduate Independent Study or HONR:3994 Honors Research Practicum) or consent of the instructor.

**Additional Requirements for the B.S.**

In addition to the common requirements listed above, biochemistry majors who elect to earn a Bachelor of Science must complete the following work.

Two of these:

BIOC:5241 Biophysical Chemistry I 3 s.h.
BIOC:5242 Biophysical Chemistry II 3 s.h.
CHEM:4430 Principles of Physical Chemistry 3 s.h.
CHEM:4431 Physical Chemistry I 3 s.h.

CHEM:4432 Physical Chemistry II 3 s.h.

All of these:

Advanced science electives approved by biochemistry advisor 9 s.h.
Advanced laboratory courses, including BIOC:4999 6 s.h.

Students are encouraged to begin research by taking BIOC:3993 Undergraduate Independent Study, which has no prerequisites. The course involves experience in an active biochemistry research lab, which must be arranged ahead of time with a supervising faculty member. Students may make arrangements directly with the faculty member, or they may request assistance from an undergraduate advisor. Credit earned in BIOC:3993 does not count toward the major, but it does count toward the minimum of 120 s.h. required to graduate.

In order to register for BIOC:4999 Research, Independent Study, students must have completed BIOC:3120 Biochemistry and Molecular Biology I, BIOC:3130 Biochemistry and Molecular Biology II, and BIOC:3140 Experimental Biochemistry. They must have a grade of B or higher in the three courses and a grade of B-minus or higher in each course. They also must have completed BIOC:3101 Technical Communication in Biochemistry and should have prior research experience (e.g., BIOC:3993 Undergraduate Independent Study or HONR:3994 Honors Research Practicum) or consent of the instructor.

**B.A. or B.S. with Teacher Licensure**

Biochemistry majors interested in earning licensure to teach in elementary and/or secondary schools must complete the College of Education's Teacher Education Program (TEP) in addition to the requirements for the major and all requirements for graduation. The TEP requires several College of Education courses and student teaching. Contact the Office of Education Services for details.

Students must satisfy all degree requirements and complete Teacher Education Program licensure before degree conferral.

**Four-Year Graduation Plan**

The following checkpoints list the minimum requirements students must complete by certain semesters in order to stay on the University's Four-Year Graduation Plan. (Courses in the major are those required to complete the major; they may be offered by departments other than the major department.)

**Bachelor of Arts**

**Before the third semester begins:** CHEM:1110 Principles of Chemistry I, CHEM:1120 Principles of Chemistry II, MATH:1850 Calculus I, and MATH:1860 Calculus II

**Before the fifth semester begins:** BIOC:3120 Biochemistry and Molecular Biology I, BIOC:3130 Biochemistry and Molecular Biology II, and BIOC:3140 Experimental Biochemistry, two science electives, and at least 90 s.h. earned toward the degree

**Before the third semester begins:** BIOC:3993 Undergraduate Independent Study or BIOC:4999 Research, Independent Study

**Before the seventh semester begins:** CHEM:2420 Organic Chemistry Laboratory for Majors, CHEM:2410 Organic Chemistry Laboratory or CHEM:2240 Organic Chemistry II for Majors, and CHEM:2210 Organic Chemistry I or CHEM:2230 Organic Chemistry II or CHEM:2220 Organic Chemistry I for Majors, CHEM:2240 Organic Chemistry II for Majors, and CHEM:2410 Organic Chemistry Laboratory or CHEM:2420 Organic Chemistry Laboratory for Majors

**Before the eighth semester begins:** MATH:2850 Calculus III, and MATH:2860 Calculus IV

**Before the eighth semester begins:** BIOC:4999 Research, Independent Study or BIOC:3993 Undergraduate Independent Study or HONR:3994 Honors Research Practicum

**Before the eighth semester begins:** BIOC:5241 Biophysical Chemistry I or BIOC:5242 Biophysical Chemistry II or BIOC:5241 Biophysical Chemistry I or BIOC:5242 Biophysical Chemistry II, and a science elective

**During the eighth semester:** enrollment in all remaining course work in the major, all remaining General Education courses, and a sufficient number of semester hours to graduate

**Bachelor of Science**

**Before the third semester begins:** CHEM:1110 Principles of Chemistry I, CHEM:1120 Principles of

Before the seventh semester begins: PHYS:1611 Introductory Physics I or PHYS:1511 College Physics I, PHYS:1612 Introductory Physics II or PHYS:1512 College Physics II, BIOC:3101 Technical Communication in Biochemistry, one semester of BIOC:3993 Undergraduate Independent Study for students planning to take BIOC:4999 Research, Independent Study, BIOC:3120 Biochemistry and Molecular Biology I, BIOC:3130 Biochemistry and Molecular Biology II, BIOC:3140 Biochemistry and Molecular Biology II, BIOC:3993 Undergraduate Independent Study, and at least 90 s.h. earned toward the degree

Before the eighth semester begins: CHEM:4431 Physical Chemistry I or CHEM:4432 Physical Chemistry II or BIOC:5241 Biophysical Chemistry I or BIOC:5242 Biophysical Chemistry II, a science elective, and at least 3 s.h. of BIOC:4999 Research, Independent Study

During the eighth semester: enrollment in all remaining course work in the major, all remaining General Education courses, and a sufficient number of semester hours to graduate

Honors in the Major

Students majoring in biochemistry have the opportunity to graduate with honors in the major. Departmental honors students must maintain a cumulative University of Iowa g.p.a. of at least 3.33. To graduate with honors in the biochemistry major, students must earn 6 s.h. in BIOC:4999 Research, Independent Study. They must present their research results in a report written in the form of a journal article and in an oral report given at a special open departmental seminar.

In addition to honors in their major, undergraduate students have a variety of opportunities for honors study and activities through membership in the University of Iowa Honors Program; visit Honors at Iowa to learn about the University's honors program.

Joint B.S./Ph.D.

The joint Bachelor of Science/Doctor of Philosophy program in biochemistry permits students to transition into the Ph.D. program during their senior year and to count 12 s.h. of credit toward both the B.S. and Ph.D. requirements. The joint program provides a research-intensive experience and shortens the training time for students interested in pursuing independent biochemistry research careers. Students in the program receive financial support during the second half of their senior year and throughout their Ph.D. study.

Students must apply to enter the joint B.S./Ph.D. program. They must be pursuing a Bachelor of Science with a major in biochemistry, and by the beginning of their senior year they must:
- have 108 s.h. of undergraduate credit;
- have a minimum grade-point average of 3.50;
- have completed four semesters of research experience (summer research counts as one semester); and
- have completed BIOC:3120 Biochemistry and Molecular Biology I, BIOC:3130 Biochemistry and Molecular Biology II, and BIOC:3140 Experimental Biochemistry.

Students interested in the joint program should speak with their academic advisor and the biochemistry honors advisor during their first year or at the beginning of their sophomore year. They should apply to the program in spring of their junior year; applications are due at the beginning of the spring semester. Application materials must include a letter of application and statement of purpose; official scores on the Graduate Record Exam (GRE) General Test; and three letters of recommendation, including at least one from a research advisor.

Graduate Programs of Study

- Master of Science in biochemistry
- Doctor of Philosophy in biochemistry

Students admitted to graduate study in biochemistry usually pursue the Doctor of Philosophy. Qualified students interested in earning the Doctor of Medicine along with the Ph.D. may apply to the Medical Scientist Training (p. 1048) Program, which offers a joint M.D./Ph.D. program.

Master of Science

The Master of Science program in biochemistry requires a minimum of 32 s.h. of graduate credit, thesis research, and a thesis. See "Doctor of Philosophy" for information about the graduate curriculum.

Doctor of Philosophy

The Doctor of Philosophy program in biochemistry requires a minimum of 72 s.h. of graduate credit. Students complete 34 s.h. of course work and earn 38 s.h. of credit for research. The focus of the graduate program is on the individual student, so students work with the director of the biochemistry graduate programs to tailor the curriculum to their educational goals.

The Ph.D. in biochemistry requires the following work.

**BIOC:**5261 Research Techniques (first-year laboratory rotation) 1-5 s.h.
**GRAD:**7270 Principles of Scholarly Integrity 0-1 s.h.
Biophysical chemistry (students typically earn 6 s.h.); see "Biophysical chemistry requirement" below 3 s.h.
Molecular or cellular biology (students typically earn 6-8 s.h.); see "Molecular and cell biology requirement" below 4 s.h.
Graduate seminar 3 s.h.
Additional courses offered by the Department of Biochemistry and by other UI departments, as appropriate for the student's program of study Research 38 s.h.

Biophysical chemistry requirement: the following courses may be used to fulfill the 3 s.h. requirement. Students choose courses to meet their individual educational goals, completing one 3 s.h. course or a combination of three 1 s.h. courses (modules).
Applicants must have an undergraduate g.p.a. of at least 3.00 and must submit acceptable verbal, quantitative, and analytical scores on the Graduate Record Examination (GRE) General Test. Applicants are encouraged to submit their scores on the GRE Subject Test in Chemistry; Biology; or Biochemistry, Cell, and Molecular Biology. Applicants must meet the admission requirements of the Graduate College; see the Manual of Rules and Regulations of the Graduate College.

**Financial Support**
Students admitted to the Ph.D. program in biochemistry routinely receive a stipend and tuition support.

**Faculty and Research**
The department's faculty members supervise research in biochemistry; molecular, cellular, developmental, computational, and structural biology; and model system genetics. Their work is supported by grants from the National Institutes of Health, the National Science Foundation, the American Heart Association, the American Cancer Society, the Muscular Dystrophy Association, and other sources. To learn more about the department's faculty members and areas of research, visit the Department of Biochemistry web site.

**Facilities**
The Department of Biochemistry occupies 36,700 square feet on the fourth floor of the Bowen Science Building and 7,500 square feet on the third floor of the Medical Education Research Facility on the University's health sciences campus. It has a number of well-equipped research laboratories; other departmental facilities include the Biochemistry Stores, the Mattill Biochemistry Reading Room, and the Heath Conference Room.

The department makes available a number of shared instruments; among them are an Applied PhotoPhysics stopped flow spectrometer SX20 (2009); a Jasco spectropolarimeter, model J815 (2010); a Horiba fluorlog-3 spectrofluorometer (2010); and a Beckman Coulter ultra XL1 analytical centrifuge (1996).

Faculty, staff, and students in the department have access to a variety of shared Carver College of Medicine resources, including the X-ray Crystallography Facility, the IIHG Genomics Division (DNA Facility), the Medical NMR Facility, the Proteomics Facility, the Flow Cytometry Facility, the Viral Vector Core Facility, the Small Animal Imaging Core Facility, and the Genome Editing Core Facility. The University also supports resources such as the Central Microscopy Research Facilities and the High Throughput Screening Facility.

**Courses**

**Lower-Level Undergraduate**

**BIOC:1001 CLAS Master Class**  1-3 s.h.
Exploration of a single topic in a series of lectures by faculty presenting divergent perspectives; illuminates intellectual adventure inherent in liberal arts and sciences; encourages discovery of majors and other areas of study within the College of Liberal Arts and Sciences. Same as CLAS:1001, RELS:1010, THTR:1001, CS:1001, CSD:1001, PHIL:1001, ENGL:1001, ARTS:1001.
Upper-Level Undergraduate and Graduate

BIOC:3101 Technical Communication in Biochemistry
1 s.h.
How to communicate technical information through writing and speaking; students present research findings in several formats, read journal articles, and write a proposal for their senior project in BIOC:4999. Prerequisites: BIOC:3120 or BIOC:3130 or BIOC:3140. Requirements: biochemistry major, and junior or senior standing.

BIOC:3110 Biochemistry
3 s.h.
Basic concepts in modern biochemistry and molecular biology; understanding of life processes in molecular terms. Requirements: one year each of college-level biology and chemistry. Recommendations: one semester of organic chemistry.

BIOC:3120 Biochemistry and Molecular Biology I
3 s.h.
Physical and chemical foundations of biochemistry, structure of biological molecules, catalysis, transport, and oxidative reactions in biology; first course of two-semester sequence that concludes with BIOC:3130. Requirements: two semesters of general chemistry and one of organic chemistry. Recommendations: BIOL:1411, BIOL:1412, and an additional organic chemistry course.

BIOC:3130 Biochemistry and Molecular Biology II
3 s.h.
Carbohydrate biosynthesis, lipid metabolism, hormone regulation and integration of metabolism, signal transduction, genes and chromosomes, DNA replication and repair, transcription, RNA processing, protein translation and regulation of gene expression. Prerequisites: BIOC:3120.

BIOC:3140 Experimental Biochemistry
2 s.h.
Use of modern instruments and techniques to fractionate, identify, and characterize constituents of biochemical systems. Prerequisites: BIOC:3120. Requirements: grade of C or higher in BIOC:3120, two semesters of general chemistry, and one semester of organic chemistry.

BIOC:3993 Undergraduate Independent Study
arr.
Experience in an active biochemistry research lab, learning and performing experiments relevant to the current projects in that lab; exploration of scientific literature on topic of interest; arranged in advance by student and faculty member. Requirements: first-year, sophomore, or junior standing.

BIOC:4999 Research, Independent Study
arr.
Independent study and research in areas of interest to the student; arranged in advance by student and biochemistry honors advisor. Prerequisites: BIOC:3101. Requirements: grades of B- or higher in BIOC:3120, BIOC:3130, and BIOC:3140; average grade of B or higher for all three courses; and BIOC:3993 or HONR:3994 or prior research experience or lab practicum.

Graduate

BIOC:5215 Directed Readings for Graduate Students
arr.
Directed readings with course content arranged with professor.

BIOC:5226 Enzyme Kinetics and Bioorganic Mechanisms
1-2 s.h.
Principles and applications of steady-state and transient enzyme kinetics; mechanisms of catalysis of biochemical reactions. Prerequisites: BIOC:3120.

BIOC:5241 Biophysical Chemistry I
3 s.h.
Principles and experimental approaches used to study structure and function of biological macromolecules; protein structure, stability, and dynamics; macromolecular interactions; common biophysical methods. Requirements: one year of biochemistry. Recommendations: physical chemistry course and one semester of calculus.

BIOC:5242 Biophysical Chemistry II
3 s.h.
Principles and experimental approaches used to study structure and function of biological macromolecules; ligand binding and enzyme catalysis; X-ray crystallography; NMR spectroscopy. Requirements: one year of biochemistry. Recommendations: physical chemistry course and one semester of calculus.

BIOC:5243 Biophysical Chemistry Module 1
1 s.h.
Overview of principles of protein structure, stability, folding, and dynamics; brief treatment of structural biology approaches to help students become critical users of models derived from X-ray crystallography and NMR; taken alone or as part of BIOC:5241. Requirements: introductory course in biochemistry. Same as BISC:5206.

BIOC:5244 Enzyme Mechanisms and Ligand Interactions
1 s.h.
Enzymes as unparalleled catalysts that represent a unique class of drug targets; focus on organic chemistry of enzyme catalyzed reactions and enzyme inhibition by small molecules from a medicinal chemistry perspective; chemical and enzyme kinetics, sources of catalytic power, chemical mechanisms used in enzyme catalysis, role of coenzymes; strategies in enzyme inhibition, drug resistance, drug synergism, reversible enzyme inhibitors, transition state analogs, slow tight binding inhibitors, irreversible inhibition; taken alone or with BIOC:5242. Requirements: introductory course in biochemistry. Same as PHAR:5542.

BIOC:5245 Biophysical Chemistry Module 2
1 s.h.
In-depth examination of statistical thermodynamics and molecular forces in biological systems as related to protein structure, stability, and folding; nucleic acid structure and stability; taken alone or as part of BIOC:5241. Requirements: introductory course in biochemistry.

BIOC:5246 Techniques for Atomic Resolution Structure Determination
1 s.h.
Utilization of X-ray crystallography and NMR spectroscopy in determining atomic resolution biomolecular structures; crystal geometry, X-ray diffraction, the phase problem, data collection, structure solving and refinement; basic principles of NMR spectroscopy including magnetic properties of nuclei, chemical shift, resonance assignments, determination of NOEs, scalar couplings, RDCs, and simulated annealing approaches to structure determination; for students interested in structural biology; taken alone or with BIOC:5242. Requirements: introductory course in biochemistry.

BIOC:5247 Biophysical Chemistry Module 3 1 s.h.
In-depth examination of protein-protein interactions and protein-nucleic acid interactions; implications in biological motility, transcription, and replication; taken alone or as part of BIOC:5241. Requirements: introductory course in biochemistry.

BIOC:5248 Techniques for Determining Bimolecular Dynamics and the Structure of Large Systems 1 s.h.
Methods for studying biomolecular dynamics, structure of large biomolecules and biomolecular complexes; measurement and analysis of NMR parameters for characterization of dynamics including T1, T2, hetNOE, CPMG-RD, and RDCs; introduction to computational approaches (e.g., molecular dynamics); NMR methods for studying large biomolecular systems and survey of other approaches including cryoEM and SAX; for students interested in structural biology; taken alone or with BIOC:5242. Requirements: one year of biochemistry. Recommendations: basic knowledge of spectroscopy and some previous exposure to NMR from basic chemistry courses.

BIOC:5261 Research Techniques 1-6 s.h.
Laboratory rotation for first-year graduate students in biochemistry.

BIOC:5282 Seminar 0-1 s.h.
How to evaluate reports of scientific investigations critically; techniques for presenting scientific information.

BIOC:5875 Perspectives in Biocatalysis 1-3 s.h.
Applied enzymology, protein design, structure-activity relationships, biosensor technology, microbial transformations, biodegradation of environmental pollutants. Requirements: graduate standing in a participating department supported by the Predoctoral Training Program in Biotechnology. Same as CHEM:5875, PHAR:5875, CBE:5875, CEE:5875, MICR:5875.

BIOC:7251 Introduction to Protein Structures arr.
Basics of protein structures. Recommendations: first-year graduate standing in biosciences or physical sciences.

BIOC:7252 Enzymes, Carbohydrates, Nucleic Acids, and Bioenergetics arr.
Basics of enzyme kinetics and enzyme mechanisms, carbohydrates, nucleic acids, and bioenergetics; module covers chapters 6, 7, 8, and 13 of Lehninger's Principles of Biochemistry. Recommendations: first-year graduate standing in biosciences or physical sciences.

BIOC:7253 Metabolism I 1 s.h.
Basics of carbohydrate metabolism (glycolysis, gluconeogenesis, the pentose phosphate pathway), hormonal regulation of carbohydrate metabolism, the citric acid cycle, amino acid catabolism, oxidative phosphorylation; assignment of an advanced topic related to material, typically a recent research paper, extending inquiry beyond that presented in class and presented orally at end of five-week module. Requirements: undergraduate biochemistry course or background in enzyme function.

BIOC:7254 Metabolism II 1 s.h.
Central carbon metabolism, carbohydrate biosynthesis in plants and bacteria, lipid structure/function, fatty acid catabolism, lipid biosynthesis, and biological membranes/transport; assignment of an advanced topic related to material, typically a recent research paper, extending inquiry beyond that presented in class and presented orally at end of five-week module. Prerequisites: BIOC:7253.

BIOC:7255 Metabolism III and Biosignaling arr.
Basics of membranes and transport, biosignaling, nitrogen metabolism, integration of metabolism, genes, and chromosomes; module covers chapters 11, 12, 22, 23, and 24 of Lehninger's Principles of Biochemistry. Requirements: undergraduate biochemistry course. Recommendations: first-year graduate standing in biosciences or physical sciences.

BIOC:7256 Molecular Biology 1 s.h.
DNA, RNA, and protein metabolism, regulation of gene expression, and DNA-based information technologies.

BIOC:7292 Research Biochemistry arr.
Thesis research.

BIOC:8101 Biochemistry for Dental Students 3 s.h.
Cardiothoracic Surgery

Chair
- Peter J. Gruber

Faculty: http://www.medicine.uiowa.edu/deptprimaryapr.aspx?appointment=CardiothoracicSurgery
Web site: http://www.medicine.uiowa.edu/ctsurgery/

The University of Iowa cardiothoracic surgery program is the third oldest program of its kind in the United States. Since its establishment in 1948 as the Division of Cardiothoracic Surgery, the program has advanced from providing operative interventions for patients with diseases of the chest to performing a broad range of the most current and innovative surgical procedures.

The Department of Cardiothoracic Surgery's facilities are located at University of Iowa Hospitals and Clinics. Each year cardiothoracic surgeons at the hospitals perform more than 500 adult and pediatric heart surgeries, including coronary bypasses, transplants, and placement of mechanical cardiac assist devices; minimally invasive procedures such as mitral valve replacement and epicardial lead placement; and more than 600 general thoracic surgeries with emphasis on esophageal and lung diseases. Preparations are under way for providing coronary artery bypass grafting using robotics.

M.D. Student Training

The department trains fourth-year M.D. students in two courses, CTS:8401 Subinternship in Cardiothoracic Surgery and CTS:8497 Research in Cardiothoracic Surgery.

Residency Program

Iowa's cardiothoracic surgery residency program was established in 1948 and is fully accredited by the Accreditation Council for Graduate Medical Education. It is the only cardiothoracic surgery training program in Iowa. Two residents are accepted into the two-year program each year.

Postbaccalaureate Training

The department plays a primary instructional role in University of Iowa Hospitals and Clinics' 20-month postbaccalaureate Perfusion Technology Program; see the department's perfusion technology courses listed under "Courses" later in this section. For more information about the Perfusion Technology Program, contact the Department of Cardiothoracic Surgery or visit the Perfusion Technology Program web site.

Research

University of Iowa cardiothoracic surgeons are leaders in clinical research, particularly in oncologic surgery, diseases of the esophagus, artificial organs, pediatric cardiac surgery, and transplantation. Research also is under way in the sequence of mutations and in localization of genes predisposed to cancer.

Facilities

The Department of Cardiothoracic Surgery has specialty laboratories in gastric motility, analytical chemistry, transplantation, tissue culture, surgical bacteriology, shock, and cardiac bypass. These facilities permit study of experimental procedures such as heart valve replacement in large animals and heterotopic heart transplantation in mice and rats.

The laboratories also are used for supervised teaching exercises in surgical technique for medical students and junior residents, and for refinement of technique for senior residents and faculty members.

Courses

Cardiothoracic Surgery

CTS:8401 Subinternship in Cardiothoracic Surgery
Participation in diagnosis, preoperative, operative, and postoperative care of thoracic and cardiac patients.

CTS:8497 Research in Cardiothoracic Surgery
Participation in diagnosis, preoperative, operative, and postoperative care of thoracic and cardiac patients.

Perfusion

PERF:4161 Instrumentation in Perfusion Technology
Electrical circuitry, filters, pressure transducers, thermistors, cardiac output computers, fluid dynamics, intra-aortic balloon pumps, blood gas analyzers. Requirements: Perfusion Technology Program enrollment.

PERF:4162 Pathophysiology of Perfusion Technology
Hemostasis, acid base physiology, gas transfer, heart anatomy, heart embryology, congenital cardiac defects. Requirements: Perfusion Technology Program enrollment.

PERF:4163 Clinical Experience I
Perfusion in operating room: patient workup, observation, and reporting on extracorporeal setup, surgical procedure. Requirements: Perfusion Technology Program enrollment.

PERF:4164 Clinical Experience II
Continuation of PERF:4163; setup of extracorporeal circuit; ancillary duties of perfusionist. Prerequisites: PATH:8133 and PERF:4161 and PERF:4162 and PERF:4163.

PERF:4165 Clinical Experience III
Continuation of PERF:4164; management of cardiopulmonary bypass system. Prerequisites: PCOL:4130 and PERF:4164 and PERF:4170 and PERF:4171.

PERF:4166 Clinical Experience IV
Continuation of PERF:4165; emphasis on supply maintenance, perfusion department management. Prerequisites: PERF:4165.

PERF:4167 Perfusion Seminar
Ethics in perfusion. Requirements: Perfusion Technology Program enrollment.

PERF:4168 Research in Perfusion
From topic selection to manuscript. Requirements: Perfusion Technology Program enrollment.
**PERF:4169 Clinical Experience V**  
12 s.h.  
Continuation of PERF:4166. Prerequisites: PERF:4166.

**PERF:4170 Principle and Practice of Perfusion Technology**  
6 s.h.  
Hypothermia, hemodilution, left heart bypass, dialysis, ultrafiltration, membrane and bubbler oxygenation. Prerequisites: PATH:8133 and PERF:4161 and PERF:4162 and PERF:4163.

**PERF:4171 Devices in Perfusion Technology**  
3 s.h.  
Dermatology

Chair
• Janet A. Fairley

Faculty: http://www.medicine.uiowa.edu/dept_primary_apr.aspx?appointment=Dermatology
Web site: http://www.medicine.uiowa.edu/dermatology/

The Department of Dermatology instructs M.D. students and trains dermatology residents in the care of patients with skin diseases. It also provides researchers with an opportunity to develop their skills in dermatology.

M.D. Student Training

The Department of Dermatology rotation is one of seven selective courses offered to third- and fourth-year medical students. Students spend two weeks in the clinic and attend approximately 10 one-hour lectures. They see a good cross-section of patients, including those receiving primary or tertiary care at University of Iowa Hospitals and Clinics and Iowa River Landing and a large number of patients referred from Student Health & Wellness. Additional patients are seen at the nearby Iowa City Veterans Affairs Medical Center.

Varied electives are open to fourth-year M.D. students, including further clinical experience, dermatologic research, and special studies.

Courses

DERM:8301 Clinical Dermatology 2 s.h.
Basic dermatology; lectures, independent study, clinical experience. Requirements: third-year M.D. enrollment.

DERM:8401 Dermatology Elective arr.
Advanced clinical experience, dermatologic surgery, special assignments. Requirements: fourth-year M.D. enrollment.

DERM:8497 Research in Dermatology arr.
General principles of medical research; clinical or laboratory projects; individual study.

DERM:8499 Dermatology Off Campus arr.
Arranged by student with departmental approval.
Dietary

Director
• Laurie Kroymann

Graduate certificate: dietetic internship program
Web site: http://www.healthcare.uiowa.edu/fns/Internship/internship.htm

University of Iowa Hospitals and Clinics offers a dietetic internship program that is fully accredited by the Accreditation Council for Education in Nutrition and Dietetics (ACEND) of the Academy of Nutrition and Dietetics (AND). It qualifies graduates to take the exam for qualification as a Registered Dietitian (RD). Clinical dietitians and food service operation managers of the Food and Nutrition Services at University of Iowa Hospitals and Clinics provide the instruction for the program. Graduate-level courses in the program are administered by the Carver College of Medicine and the College of Public Health. See “Associated Courses” below.

Graduate Program of Study
• Certificate in Dietetic Internship Program

Certificate

Students complete the program with 9 s.h. of credit. Approximately half of the program’s graduates go on to complete advanced degree programs. The University of Iowa Hospitals and Clinics awards a certificate to the program’s graduates.

Students must complete a didactic program in dietetics that has approval of the Academy of Nutrition and Dietetics (AND) Accreditation Council for Education in Nutrition and Dietetics (ACEND).

Students enter the program in the fall semester. The postmark deadline for applications is February 15.

The following course work is required (at least 9 s.h.).

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>DIET:9203</td>
<td>Clinical Dietetics</td>
<td>1 s.h.</td>
</tr>
<tr>
<td>EPID:6330</td>
<td>Global Nutrition Policy</td>
<td>1.3 s.h.</td>
</tr>
<tr>
<td>EPID:6350</td>
<td>Nutritional Epidemiology</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>EPID:6360</td>
<td>Nutrition Intervention in Clinical Trials Research</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>EPID:6370</td>
<td>Nutrition Intervention in Research Lab</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

Courses

DIET:9203 Clinical Dietetics 1 s.h.
Nutritional aspects of health and disease, with emphasis on medical nutrition therapy; human nutrition in the clinical state as it relates to physiology and biochemistry.
Doctor of Medicine

Professional degree: M.D.
Web site: http://www.medicine.uiowa.edu/md/

Professional Program of Study

- Doctor of Medicine
The Doctor of Medicine is a professional degree awarded by the Carver College of Medicine. The college is accredited by the Liaison Committee on Medical Education of the American Medical Association and the Association of American Medical Colleges and meets the requirements of all state licensing boards. Its M.D. diploma admits the holder to all privileges granted to graduates of all medical colleges before such boards.

This catalog section provides information about the Doctor of Medicine curriculum, admission to the program, financial support, and academic rules and procedures.

Doctor of Medicine

The Doctor of Medicine is a four-year program that prepares students to practice primary care medicine and to pursue further education and training in specialized areas of medicine. The program admits 152 new students each year.

The M.D. curriculum is built on a triple-helix model whose three strands extend through all four years of medical school: the clinical and professional skills strand, the mechanisms of health and disease strand, and the medicine and society strand.

Clinical experiences begin during the first few weeks of medical school, and clinical clerkships start after just three semesters of preclinical instruction. By the end of the fifth semester, students have completed all of their core requirements and have the remaining three semesters to tailor their educational experience in preparation for their selected specialty.

Students complete in-depth clinical course work and serve clinical clerkships primarily at University of Iowa Hospitals and Clinics, the Iowa City Veterans Affairs Medical Center, and the Des Moines Area Medical Education Consortium. Students also may have opportunities to gain experience in private medical offices and community hospitals.

Graduates may pursue further training in the specialties of family medicine, internal medicine, surgery, and pediatrics at one of 10 University of Iowa-affiliated residency programs in six Iowa cities. They also have access to two transitional-year programs. For more information, contact the Office of Student Affairs and Curriculum and visit Information for Current Students on the Carver College of Medicine web site.

Preclinical Curriculum

The first three semesters of the M.D. program present an integrated core of sciences basic to the study of medicine. They also introduce students to the foundations of clinical practice.

Course work includes human anatomy, foundations of cellular life, a three-course series on clinical and professional skills, a three-course series on medicine and society, and a five-course series on multisystem mechanisms of health and disease. Each of these courses is described below.

Some elective courses are available to students during the first and second years, normally for 1 or 2 s.h. of credit. Topics include areas not specifically covered in the regular curriculum and areas related to medical practice and the role of the physician. Courses vary from year to year, but typical subject areas are global health issues, U.S. health care systems, and community health outreach.

The M.D. program's preclinical curriculum requires the following course work.

FIRST SEMESTER

MED:8121 Clinical and Professional Skills I: introduction to concepts of clinical reasoning, communication, physical examination, and evidence-based clinical practice; principles of biomedical ethics; early clinical interactions and placement of classroom experiences into the context of patient care through the Longitudinal Clinical Mentor (LCM) Program; interactions with students from other health sciences colleges to explore the interprofessional approach to caring for patients.

MED:8122 Medicine and Society I: delivery of individual disease prevention/health promotion services; introduction to social determinants of health; influence and impact of culture and the community on health care; community resources; students apply health and risk assessment to individual patients and to themselves.

MED:8123 Foundations of Cellular Life: genetics, embryology, molecular biology, biochemistry, cell biology and histology; molecular events required for cellular life; how cells grow and interact to form basic tissues of the human body; framework necessary for exploring the mechanisms of health and disease.

MED:8124 Mechanisms of Health and Disease I: normal and healthy processes within and among mechanisms of oxygenation, metabolism, and genetics/development.

SECOND SEMESTER

MED:8131 Clinical and Professional Skills II: reinforcement of clinical reasoning concepts introduced in MED:8121 and introduction of additional concepts; application of concepts through interactions with standardized patients and through Longitudinal Clinical Mentor clinical visits; varied experiences help students gain a deeper appreciation for issues in biomedical ethics; strengths and barriers involved in providing comprehensive interdisciplinary patient care.

MED:8132 Medicine and Society II: knowledge and skills related to health promotion and disease prevention from a medicine and society perspective, including impact of behavior, environment, culture, and socioeconomics; identification of major public health problems associated with mechanisms of health and disease; focus on public health and epidemiology, with attention to screening, global health, and environmental hazards.

MED:8133 Mechanisms of Health and Disease II: normal and healthy processes within and among mechanisms of
immunology/inflammation, locomotion/integument, and neuropsychiatry.
MED:8134 Mechanisms of Health and Disease III: abnormalities or disruptions leading to disease within and among mechanisms of oxygenation, metabolism, and genetics/development.

THIRD SEMESTER
MED:8221 Clinical and Professional Skills III: advanced clinical reasoning skills gained through focused patient encounters and interactions with special patient populations; emphasis on students' ability to integrate and use concepts from the M.D. curricular strands that are required for cost-conscious, patient-centered, interdisciplinary care.
MED:8222 Medicine and Society III: health services organization and delivery, with emphasis on community dimensions of medical practice and patient safety.
MED:8223 Mechanisms of Health and Disease IV: abnormalities or disruptions leading to disease within and among mechanisms of immunology/inflammation, locomotion/integument, and neuropsychiatry.
MED:8224 Mechanisms of Health and Disease Keystone: transition from classroom instruction in MED:8124, MED:8133, MED:8134, and MED:8223 to clinical practice; foundational information from those courses approached from the perspective of common clinic encounters; diagnostic and management decisions about common important clinical problems using the foundational knowledge gained from those courses.

Clinical Curriculum
Students complete two weeks of skills training in MED:8320 Transition to Clerkships prior to the start of clinical clerkships. The two-and-a-half year clinical component of the medical curriculum is comprised of supervised hands-on clinical training at the bedside on in-patient units, in outpatient clinics, and in communities throughout the state. In contrast to the preclinical semesters, the clinical years vary according to a student's individual needs. This period of training begins in January of the second year with 44 weeks of core clerkships. Students then enter various pathways where they complete a minimum of twelve weeks of selectives, four weeks of emergency or critical medicine, one four-week subinternship, and thirty-two weeks of advanced electives.

After completing the core clerkships, students must successfully complete Step 1 of the United States Medical Licensing Examination (USMLE) before they may be promoted to the pathways component of the curriculum. Students take Step 2 of the USMLE during the fall of their fourth year of the M.D. program.

After completing MED:8320 Transition to Clerkships, students begin 42 weeks of core clerkships.

All M.D. students are required to pass Step 1 of the U.S. Medical Licensing Examination before they may be promoted to the third year of the M.D. program.

During the third and fourth years, students complete the 42 weeks of core clerkships, and follow that with a minimum of 20 weeks of selectives and 18 weeks of electives.

Primary venues for clinical training of medical students include University of Iowa Hospitals and Clinics, the Iowa City Veterans Affairs Medical Center, and the Des Moines Area Medical Education Consortium. Students also participate in the family practice preceptorship and the community-based primary care clerkship, which are off-campus rotations. Other courses may be assigned to off-campus sites, as well.

The M.D. program's clinical curriculum requires the following clerkships and selectives.

GENERALIST CORE
M.D. students complete the generalist core during the fourth and fifth semesters. It consists of the following 42 weeks of clerkships.

<table>
<thead>
<tr>
<th>Clerkship</th>
<th>Weeks</th>
</tr>
</thead>
<tbody>
<tr>
<td>FAM:8301 Preceptorship in Family Medicine</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>IM:8301 Inpatient Internal Medicine</td>
<td>6 s.h.</td>
</tr>
<tr>
<td>IM:8302 Outpatient Internal Medicine</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>IM:8458 Community-Based General Internal Medicine</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>NEUR:8301 Clinical Neurology</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>OBG:8301 Clinical Obstetrics and Gynecology</td>
<td>6 s.h.</td>
</tr>
<tr>
<td>PEDS:8301 Clinical Pediatrics</td>
<td>6 s.h.</td>
</tr>
<tr>
<td>PSYC:8301 Clinical Psychiatry</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>SURG:8301 Clinical Surgery</td>
<td>6 s.h.</td>
</tr>
</tbody>
</table>

SELECTIVES
After finishing the generalist core, M.D. students complete 14 weeks of selectives chosen from these.

<table>
<thead>
<tr>
<th>Clerkship</th>
<th>Weeks</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANES:8301 Clinical Anesthesia</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>DERM:8301 Clinical Dermatology</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>IM:8303 Electrocardiography</td>
<td>1 s.h.</td>
</tr>
<tr>
<td>OPHT:8301 Clinical Ophthalmology</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>ORTH:8301 Clinical Orthopaedics</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>OTO:8301 Clinical Otolaryngology</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>PATH:8301 Laboratory Medicine in Clinical Practice</td>
<td>1 s.h.</td>
</tr>
<tr>
<td>RAD:8301 Clinical Radiology</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>URO:8301 Clinical Urology</td>
<td>2 s.h.</td>
</tr>
</tbody>
</table>

OTHER REQUIRED CLERKSHIPS
M.D. students complete the following additional required clerkships and other work during the third and fourth years.

- Emergency medicine or critical care medicine (4 weeks)
- One subinternship (4 weeks during the fourth year)
- Advanced electives (total of 18 weeks during the fourth year)

Joint M.D./Graduate Degrees
The Carver College of Medicine offers a joint M.D./Ph.D. program for students who are interested in a career that combines clinical and academic medicine with basic and clinical research; see Medical Scientist Training Program (p. 1048) in the Catalog.

The college also collaborates with other University of Iowa colleges to offer the joint M.D./M.B.A. program with the Tippie College of Business (p. 642); the joint M.D./J.D.
program with the College of Law (p. 969); and the joint M.D./M.P.H. program with the College of Public Health (p. 1143).

Students must be admitted to both of the individual degree programs before they may be admitted to the joint degree program. Those interested in joint M.D./graduate degree programs must make arrangements with the appropriate graduate department and with the Carver College of Medicine associate dean for student affairs and curriculum.

Admission
The Carver College of Medicine participates in the American Medical College Application Service (AMCAS), a nonprofit centralized application processing service for applicants to U.S. medical schools. AMCAS applications are available for completion in May of the year preceding the beginning of the class for which application is being made. Prospective students are urged to apply as early as possible. The deadline for AMCAS submission is November 1.

Secondary applications are forwarded to applicants whose AMCAS applications pass a review conducted by the college. A $60 fee must accompany the secondary application from all applicants.

Admitted applicants must have an official transcript from each college they have attended sent to the University’s Office of Admissions.

Technical Standards for Admission and Retention
The Carver College of Medicine seeks students who will serve the needs of society best, and it strives to graduate skilled and effective physicians. To achieve these goals, it applies the following principles and technical standards to candidates for admission and to continuing students.

PRINCIPLES
Technical standards refer to criteria that go beyond academic requirements for admission and are essential to meeting the academic requirements of the M.D. program.

Applicants to the Carver College of Medicine and students continuing in the college, with or without disabilities, are expected to meet the same requirements.

Matriculation and continuation in the college assume a certain level of cognitive and technical skill. Medical students with disabilities are held to the same fundamental standards as their nondisabled peers. Although not all students should be expected to gain the same level of proficiency with all technical skills, some skills are so essential that mastery must be achieved, with the assistance of reasonable accommodations where necessary.

Reasonable accommodations are provided to assist in learning, performing, and satisfying the technical standards.

Every reasonable attempt is made to facilitate the progress of students, providing that such efforts do not compromise collegiate standards or interfere with the rights of other students and patients.

TECHNICAL STANDARDS
Applicants for admission to the Carver College of Medicine and continuing students must possess the capability to complete the entire medical curriculum and be granted the degree. To this end, they must complete all courses in the curriculum successfully. In order to acquire the knowledge and skills to function in a broad variety of clinical situations and to provide a wide spectrum of patient care, M.D. students must have abilities and skills in six areas, including observation; communication; motor skills; intellectual, conceptual, integrative, and quantitative abilities; behavioral and social attributes; and cultural competence.

Technological compensation can be made for some disabilities in certain areas, but each student must meet the essential technical standards in such a way that he or she is able to perform in a reasonably independent manner. The use of a trained intermediary is not acceptable in many clinical situations, because it implies that the student’s judgment must be mediated by someone else’s power of selection and observation.

Observation: Students must have the functional ability to observe demonstrations and experiments in the basic sciences and must have sufficient use of the senses necessary to perform a physical examination.

Communication: Students must be able to relate reasonably to patients and establish sensitive, professional relationships with patients, colleagues, and staff. They are expected to communicate the results of the history and examination to the patient and to their colleagues with accuracy, clarity, and efficiency.

Motor: Students are expected to participate in basic diagnostic and therapeutic maneuvers and procedures. Those who cannot perform these activities independently should be able to understand and direct the methodology involved in such activities.

Intellectual, conceptual, integrative, and quantitative abilities: Students must be able to learn to analyze, synthesize, solve problems, and reach reasonable diagnostic and therapeutic judgments. Students are expected to be able to display good judgment in the assessment and treatment of patients. They must be able to learn to respond with prompt and appropriate action in emergency situations.

Behavioral and social attributes: Students are expected to be able to accept criticism and respond with appropriate modification of their behavior. Students also are expected to possess the perseverance, diligence, and consistency necessary to complete the M.D. curriculum and enter the independent practice of medicine in a reasonable period of time. They must demonstrate professional and ethical demeanor and behavior in all dealings with peers, faculty, staff, and patients.

Cultural Competence: Medical students must be able to communicate with and care for persons whose culture, sexual orientation, or religious beliefs are different from their own. They must be able to perform a complete history and physical exam on any patient regardless of the student’s or the patient’s race, religion, ethnicity, socioeconomic status, gender, age, or sexual preference. Similarly, students must be able to interact professionally with colleagues and other health care professionals.
Applicants who may not meet these standards are encouraged to contact the college's admissions office.

**Admission Requirements**

Applicants for admission to the Carver College of Medicine must have a bachelor's degree, or they must be enrolled in a bachelor's degree program with the expectation of receiving their degree before enrolling in the Carver College of Medicine. Applicants must have earned college credit in the following courses:

- **Physics:** a complete introductory course (one year), including lab instruction.
- **Mathematics:** an advanced college mathematics course or a statistics course.
- **Chemistry:** a minimum of two years of chemistry, which must include general and organic chemistry with labs, and biochemistry.
- **Biology:** a complete introductory course in the principles of biology (one year), with the appropriate laboratories; and an advanced biology course (one semester or quarter); recommended advanced biology courses include molecular and cell biology, human physiology, genetics, and microbiology.
- **English:** two courses, including composition and literature; the requirement may be waived if the applicant's school has an integrated writing requirement in courses across its curriculum.

**Social and behavioral sciences, and humanities:**

four courses; because writing skills are important in the study and practice of medicine, prospective applicants are encouraged to fulfill this requirement with courses that include a writing component; recommended courses include behavioral psychology, world language, and other courses that encourage appreciation for diversity and cultural competency.

Applicants should have taken the required science courses for a grade rather than electing pass/fail grading.

Fulfillment of these requirements does not guarantee admission to the Carver College of Medicine. The college's admissions committee selects applicants who appear to be best qualified to study and practice medicine. Preference is given to Iowa residents with high scholastic standing. Consideration also is given to outstanding nonresidents.

Applicants are required to take the Medical College Admission Test (MCAT) no earlier than five years before and no later than September of the year of application. To register for the test, see the Medical College Admission Test web site.

Personal interviews are part of the admission process. Candidates invited for an interview are contacted by the admissions committee. An external criminal background check is performed for all admitted students at the time of admission.

All students who enter the Carver College of Medicine are required to comply with the pre-entrance and annual health screening program developed by the University's Student Health Service in cooperation with University of Iowa Hospitals and Clinics; see Requirements and Forms on the Student Health Service web site.

**Financial Support**

The Carver College of Medicine's philosophy is that no student should be denied a medical education due to a lack of financial resources. The college's financial aid staff actively seeks sources of aid so that every student interested in a medical education will be able to finance that education.

Financial assistance is provided by the Carver College of Medicine primarily on the basis of demonstrated financial need. Although a limited number of collegiate or institutional grants are available for the most economically disadvantaged students, most aid is in the form of loans. Examples of federal loan programs are the Federal Direct Unsubsidized Stafford/Ford Student Loan, the Federal Perkins Loan, and the Primary Care Loan (PCL). Students also may qualify for Federal Direct Grad PLUS Loans or private loans to supplement their financial aid package.

In addition, the college supports scholarship and loan programs through permanent endowments and contributions from alumni and friends of the Carver College of Medicine. These funds are administered by the college's financial aid office and are awarded as a part of a student's total financial aid package. Funds to support short-term emergency loans are available for students with immediate financial need.

A small number of Dean's Scholarships are awarded by the college's admissions office to highly qualified candidates on the basis of their academic excellence, leadership abilities, and their potential to enrich the college. Dean's Scholarships are included in the recipient's overall financial aid package.

To learn more about financial aid, contact the Carver College of Medicine Financial Services office.

**Academic Rules and Procedures**

**Student Promotion**

The Carver College of Medicine has established promotion policies and procedures to ensure that each of its graduates has adequate skills, knowledge, judgment, ethical standards, and personal integrity to assume the responsibilities of a medical doctor. The student promotions committee, made up of seven faculty members and two students, performs these duties with the cooperation, advice, and judgment of course directors, faculty members, students, and administrators.

The committee recommends specific actions to be taken when a student's skills, knowledge, judgment, or ethical behavior is in any way considered consistently marginal or unsatisfactory. Possible recommendations include dismissal of the student from the college; suspension for a specified period of time; requiring the student to repeat all or any part of the curriculum on academic probation; and allowing the student to continue on academic probation with a full or partial course load. The committee's recommendations are forwarded for action to the executive dean of the Carver College of Medicine.
Medical students have the right to appeal a promotion decision. They must submit the appeal in writing to the Carver College of Medicine’s executive dean within five days of notification of the decision. Appeals are considered by the Appeals Committee, made up of faculty representatives of the Medical Council and the Executive Committee, a medical student, a lay member, and the associate dean for student affairs (ex officio). Students may request an opportunity to appear before the Appeals Committee to make a statement and answer questions. The committee then makes its recommendation to the college’s dean, who is the final authority.

Specific information about student promotion policies and procedures is available from the Office of Student Affairs and Curriculum and is online in the Student Handbook.

**Leaves of Absence, Withdrawal, Reinstatement**

The Carver College of Medicine has established policies regarding leaves of absence, dropping courses, withdrawal from the college, and reinstatement to the college. Information about each of these policies is available at the college’s Office of Student Affairs and Curriculum and is published annually in the Student Handbook.

**Disputes and Complaints**

Student complaints concerning actions of faculty members or departments are pursued first through mechanisms established in the Carver College of Medicine. These procedures allow the greatest flexibility for all concerned in resolving a conflict. They are intended for situations such as grading disputes, alleged academic dishonesty, alleged dishonesty during a clinical rotation, alleged unethical or unprofessional conduct, and perceived discrimination or harassment.

Complaints regarding sexual harassment are handled confidentially in accordance with University policy and procedures; see the University's Policy on Sexual Harassment.

For information about the established informal mechanisms, contact the Office of Student Affairs and Curriculum or see the Student Handbook.
Emergency Medicine

Chair

- Andrew Nugent

Faculty: http://www.medicine.uiowa.edu/dept_primary_apr.aspx?appointment=EmergencyMedicine
Web site: http://www.medicine.uiowa.edu/emergencymedicine/

The Department of Emergency Medicine prepares new physicians to recognize and treat a variety of urgent and emergent conditions. The program fosters basic science and clinical research relevant to emergency medicine and is dedicated to the education and training of Emergency Medical Services (EMS) personnel through the Emergency Medical Services Learning Resources Center (EMSLRC).

M.D. Student Training

Elective rotations for Doctor of Medicine students are available at University of Iowa Hospitals and Clinics and at several other sites throughout Iowa, including St. Luke's Hospital, Cedar Rapids; Great River Medical Center, Burlington; Covenant Medical Center, Waterloo; Broadlawns Medical Center, Des Moines; and Mercy Medical Center, Sioux City. Students also may arrange an off-service elective independently with established residency programs throughout the United States.

The program offers an annual introductory month to emergency medicine; advanced life support; and Wilderness Medicine, a rotation that includes scenario and didactic training in wilderness medicinal skills with travel to areas such as Colorado.

Residency Program

The emergency medicine faculty directs the Iowa Emergency Medicine Residency, Iowa's only emergency medicine residency. The residency is a three-year program that prepares residents for careers in diverse areas of emergency medicine, from rural practice to academics. The program emphasizes critical care training and rotations in a wide variety of specialties. Part of the clinical component is spent at St. Luke's Hospital, Cedar Rapids.

Resources

The Emergency Department, located on the first floor of Roy Carver Pavilion, is a Level I Adult and Pediatric Trauma Center. It serves as a referral center for communities across Iowa.

Courses

EM:8401 Introduction to Advanced Life Support Skills 4 s.h.
Experience managing acute threats to life, including trauma, respiratory failure, poisoning, sepsis, stupor/coma, and acute MI, using ACLS and PALS courses and clinical manikin work with EMS staff. Requirements: completion of M.D. third year.

EM:8402 Emergency Medicine UIHC arr.
Preceptorship with residents and faculty; emphasis on principles of acute medicine; clinical shifts, case conferences, simulations, exams. Requirements: completion of surgery, pediatrics, and internal medicine or advanced practice management.

EM:8403 Wilderness Medicine 4 s.h.
Didactic and scenario training in physiology, diagnosis, and emergency treatment of heat- and cold-related illnesses, high altitude disorders, wilderness trauma, envenomations, and immersion injuries. Taught in wilderness areas. Requirements: completion of M.D. third year.

EM:8404 Emergency Medicine: St. Luke's, Cedar Rapids 4 s.h.
Preceptorship with full-time emergency department physicians; clinical shifts, case conferences, simulations, exams. Requirements: completion of M.D. third year.

EM:8405 Rural Emergency Medicine at Burlington, Iowa 4 s.h.
In-depth clinical experience in a busy rural hospital emergency department under supervision of residency-trained emergency physicians; lectures, skill labs, projects. Requirements: completion of M.D. third year.

EM:8406 Emergency Medicine Des Moines 4 s.h.
Participation in acute emergency care, management of acute illnesses, follow-up care when possible; Broadlawns Hospital, Des Moines. Requirements: completion of surgery, pediatrics, and internal medicine or advanced practice management.

EM:8407 Emergency Medicine Waterloo 4 s.h.
Participation in acute emergency care, management of acute illnesses, follow-up care when possible; Covenant Medical Center, Waterloo. Requirements: completion of M.D. third year.

EM:8408 Emergency Medicine Sioux City 4 s.h.
Experience with a routine cross section of emergency problems in a regional trauma center and with functions of area resource hospitals (St. Luke's Medical Center, Mercy Medical Center); option to accompany ambulance crews. Requirements: completion of surgery, pediatrics, and internal medicine or advanced practice management; and basic life support certification.

EM:8409 Transition to Residency 2 s.h.
Intensive program providing basic training in life support skills, experience in procedures common to inpatient hospital environment, and practice with simulated critical care scenarios; lectures, small group discussions, procedure labs, high-fidelity simulations, and self-directed online learning; students become certified in Advanced Cardiac Life Support (ACLS). Requirements: completion of surgery, pediatrics, and IM or APM.

EM:8498 Emergency Medicine On Campus arr.
Clinical research experience with a mentor in the Emergency Treatment Center and the Department of Emergency Medicine; principles of design, methodology, basic statistics.
EM:8499 Emergency Medicine Off Campus  arr.
Preceptorship with residents and faculty; emphasis on principles of acute medicine; Liaison Committee on Medical Education (LCME) accredited off-campus site. Requirements: completion of M.D. third year and approval from UIHC Emergency Medicine clerkship director.
Family Medicine

Chair

• Paul A. James

Faculty: http://www.medicine.uiowa.edu/familymedicine/
Department or Leadership/
Web site: http://www.medicine.uiowa.edu/familymedicine/

M.D. Student Training

The Department of Family Medicine trains primary care physicians. The department offers course work that is included throughout the four-year M.D. program. Twenty-one elective senior rotations give students opportunities for exposure to various Iowa communities through work in affiliated hospitals or connected facilities, in the department’s model office on the University of Iowa campus, and in preceptorships with selected family physicians throughout the state. Students also have the opportunity for independent study during the fourth year.

Residency Program

Family Medicine Residency

The Department of Family Medicine directs a three-year residency program whose graduates are eligible for certification by the American Board of Family Medicine. The residency program trains physicians to provide continuous and comprehensive medical care to patients and their families. Residents are educated in all areas of family medicine—adult medicine, maternal and child health, behavioral science, surgical specialties, and community medicine. Training emphasizes the value of wellness and preventive medicine as well as curative medicine.

The program is organized as a progressive educational experience. It consists of formal teaching and clinical experiences on assigned rotations, structured conferences, and patient care in the Family Medicine Clinic. As residents develop clinical skills, medical judgment, and competence, their patient responsibilities increase. Some patients at the Family Medicine Clinic are assigned to residents, who provide medical care under faculty supervision. Each resident is responsible for his or her patients for the duration of the residency program.

Residents also learn the principles of practice management, including organizational and administrative decision making, patient record and bookkeeping procedures, and chart auditing methodologies.

Residents are expected to take responsibility for their learning environment, to avail themselves of the department’s diverse resources, and to collaborate with the faculty in order to have the best possible learning experience.

Family Medicine–Psychiatry Residency

The Department of Family Medicine and the Department of Psychiatry cosponsor the combined Family Medicine–Psychiatry Residency program. The program’s residents acquire broad-based training in both disciplines, including focused training in geriatrics and geriatric psychiatry, substance and alcohol abuse, diagnosis and treatment of depression, delirium, eating disorders, panic disorders, and neurotic and somatizing behavior. Graduates are eligible for certification by the American Board of Family Medicine and the American Board of Psychiatry and Neurology.

Facilities

The Department of Family Medicine is located on the University of Iowa health sciences campus. Faculty offices are close to the Family Medicine Clinic, where patients are seen by appointment. The department also has community-based clinics in southeast Iowa City and North Liberty, Iowa, and a rural satellite office located in Lone Tree, Iowa.

Courses

FAM:8005 Medical Education Community Orientation
Experience in a local health care delivery system away from the University setting, between first and second year of M.D. program.

FAM:8301 Preceptorship in Family Medicine
One-on-one experience with a practicing physician in his or her office; exposure to illnesses, conditions often seen in primary care; realistic background for evaluation of family medicine as a career alternative.

FAM:8401 Subinternship in Family Medicine, University of Iowa
Inpatient aspects of family medicine’s key components; experience on the family medicine inpatient service.

FAM:8402 University of Iowa Family Medicine Clerkship
Work with family practice residents and staff in day-to-day delivery of primary medical care at Family Practice Center; experience in the Family Stress Clinic observing family-centered counseling; nursing home visits, work with departmental social worker and sports medicine specialist.

FAM:8403 Advanced Preceptorship in Family Medicine
Experience in community practice of family medicine.

FAM:8404 Rural Preceptorship in Family Medicine

FAM:8405 Geriatrics Elective
Experience in monitoring and evaluating health and functional status of patients age 65 and older in the UI Geriatric Assessment Clinic and community settings.

FAM:8406 Subinternship in Family Medicine—Cedar Rapids
Experience as a junior resident in all areas of inpatient family medicine, including maternity care, child and adolescent health, adult medicine.

FAM:8407 Clerkship in Family Medicine—Cedar Rapids
Experience as a junior resident in all areas of family medicine, including maternity care, child and adolescent health, adult medicine.
FAM:8408 Family Medicine Clerkship, Broadlawns Hospital, Des Moines Family Health Center 4 s.h.
Clinical experience in inpatient and outpatient care.

FAM:8409 Subinternship in Family Medicine, Iowa Lutheran 4 s.h.

FAM:8410 Family Medicine, Iowa Lutheran arr.
Requirements: fourth-year M.D. enrollment.

FAM:8411 Family Medicine Clerkship, Davenport 4 s.h.
Assignment to problems commonly seen in family practice office; supervision by residents and faculty for history and physical evaluation and diagnostic workups and treatment of each specific problem; exposure to acutely ill patients in services of medicine, surgery, obstetrics, pediatrics.

FAM:8412 Sub-Internship in Family Medicine, Davenport 4 s.h.
Experience in inpatient family medicine; assessing and managing hospitalized patients, evaluating and treating patients in the emergency room, participating in call coverage with family medicine residents.

FAM:8413 Family Medicine Geriatrics, Davenport 4 s.h.
Geriatric, palliative, and end-of-life care issues; assessment of competency in evaluation and management of patients; interdisciplinary nature of geriatric and palliative care.

FAM:8415 Subinternship in Family Practice, Sioux City 4 s.h.
Experience as a junior resident in all areas of family medicine. Requirements: fourth-year M.D. enrollment.

FAM:8416 Family Medicine Clerkship, Sioux City 4 s.h.
Methods common in family practice medicine; participation in care of patients seen by family practice physicians and residents.

FAM:8417 Subinternship in Family Medicine, Waterloo 4 s.h.
Experience working as a member of family practice inpatient team at Allen Memorial Hospital and Covenant Medical Center, following patients from admission through discharge.

FAM:8418 Family Medicine Clerkship, Waterloo 4 s.h.
Rotation at the Northeast Iowa Family Practice Center; work with patients from outpatient care through hospitalization; basic concepts of family practice, team concept in medical care.

FAM:8419 Lone Tree Family Medicine Clerkship 2,4 s.h.
Experience providing patient care in a rural setting; continuity of care for patients of all ages. Requirements: fourth-year M.D. enrollment.

FAM:8420 Family Medicine, Mason City 4 s.h.
Work with family physicians on staff at Mercy or other affiliated community hospitals; management of all patients admitted by the family physicians, participation in care rendered by consultants; primary care experience in family practice office.

FAM:8421 Primary Care Sports Medicine 4 s.h.
Comprehensive, diverse, and educational experience in the field of sports medicine; clinical competence to diagnose and manage medical illnesses and injuries related to sports and exercise in varied patients, recreational and organized athletes, and teams. Requirements: M.D. enrollment.

FAM:8422 Family Medicine/Psychiatry Elective 2,4 s.h.
Integration of mental and physical health care across outpatient family medicine and outpatient psychiatry arenas. Requirements: M.D. enrollment.

FAM:8450 Continuity of Care—Family Medicine 4 s.h.
Longitudinal continuity of care experience for fourth-year M.D. students in an outpatient family medicine setting.

FAM:8496 Independent Studies arr.
Work with departmental researcher on investigation in family medicine, community medicine, health care delivery, health maintenance, and other areas.

FAM:8499 Family Medicine Off Campus Clerkships; may include community hospitals.
Free Radical and Radiation Biology

**Director**
- Douglas R. Spitz

**Graduate degrees:** M.S. in free radical and radiation biology; Ph.D. in free radical and radiation biology

**Faculty:** [http://frrbp.medicine.uiowa.edu/faculty-and-staff](http://frrbp.medicine.uiowa.edu/faculty-and-staff)

**Web site:** [http://frrbp.medicine.uiowa.edu/](http://frrbp.medicine.uiowa.edu/)

The Free Radical and Radiation Biology Program provides in-depth training and research experience in the physical, chemical, and biological effects of radiation. It also focuses on the metabolic production of free radicals for biology and medicine.

Free radicals are of interest to researchers and clinicians due to their role in a variety of diseases and pathological states, including degenerative diseases of aging and cancer. Manipulation of free radical reactions and redox biology hold great promise for the future development of new therapies for a variety of human diseases. The Free Radical and Radiation Biology Program stresses the importance of these areas of research to basic science, clinical medicine, and public health.

**Undergraduate Education**

Three courses offered by the Free Radical and Radiation Biology Program are open to University of Iowa undergraduate students: FRRB:3130 Radiation Safety and Radiobiology, FRRB:4000 Special Topics: Advanced Undergraduates, and FRRB:5000 Radiation Biology. Students looking for an overview of the biological effects of radiation, including the role of free radicals, will find FRRB:5000 especially appropriate. These courses are appropriate for students who plan to enter medicine, nuclear medicine technology, environmental health, or related programs.

**Graduate Programs of Study**

- Master of Science in free radical and radiation biology
- Doctor of Philosophy in free radical and radiation biology

The Carver College of Medicine administers graduate programs in free radical and radiation biology; graduate degrees are granted through the Graduate College. See Carver College of Medicine (p. 1005) and Graduate (p. 916) College in the Catalog for general information about study in medicine and graduate study at the University.

**Master of Science, Doctor of Philosophy**

The Master of Science in free radical and radiation biology requires a minimum of 30 s.h. of graduate credit; the Doctor of Philosophy requires a minimum of 72 s.h. of graduate credit.

The M.S. and Ph.D. programs are open to graduate students with a background in physics, chemistry, mathematics, biology, health sciences, veterinary medicine, or engineering.

After completing the introductory course FRRB:5000 Radiation Biology, students typically concentrate on a particular aspect of the field. Some students elect to focus on radiation and cancer biology, while others choose to emphasize free radical biology.

In addition to formal lectures and some structured laboratory exercises, plans of study for free radical and radiation biology students involve small-group conferences, discussions, and seminars. Ph.D. students are encouraged to spend at least one semester as teaching assistants, for which no registration is required and no academic credit is given.

Many of the department's graduate students elect to take FRRB:3130 Radiation Safety and Radiobiology, a course that covers safe operation of radiation-producing equipment and handling of radioactive materials, regulations and regulatory agencies, formulas and techniques in radiation protection programs, radiation protection, and other topics.

**Postgraduate Training**

Postdoctoral training is available by arrangement with the program's director and individual faculty members. Contact the Free Radical and Radiation Biology Program.

**Financial Support**

Graduate students are supported as graduate assistants from funds available through research grants and contracts or from departmental funds. Individual postdoctoral awards also may be available; the candidate and his or her faculty sponsor apply for them jointly.

**Facilities**

The Free Radical and Radiation Biology Program is the home of the Radiation and Free Radical Research Core Lab (RFRRC). The lab operates a 300 kVp orthovoltage X-ray generator and other radiation sources, including an 8,000-Curie Cs-137 irradiator. Students and staff have access to additional core lab support through RFRRC, with services and expertise related to analytical chemistry (EPR services) and redoxbiology, biochemistry (AES services), and linear accelerators in the Department of Radiation Oncology.

The program has a number of radiation detectors and counters, including liquid scintillation counters. It also has ultraviolet/visible spectrophotometers; various types of equipment for densitometry, chromatography, and electrophoresis; molecular biology equipment, including thermal cyclers; an automatic cell counter and particle sizer; tissue culture facilities; Typhoon Phosphoimager; HPLC; Electron Spin Resonance Spectrometers; and nitric oxide analyzers. Visit Radiation and Free Radical Research Core on the program's web site to learn more.
Courses

FRRB:3110 Medical Physics I 2-3 s.h.
Introduction to radiation used in clinical setting; fundamental physical units, measurements, principles, atomic structure and types of radiation; X-ray generating equipment, X-ray production, and its interaction with matter. Requirements: acceptance to radiation sciences therapy program, and maxillofacial or radiation oncology resident. Same as RSTH:3110.

FRRB:3130 Radiation Safety and Radiobiology 2 s.h.
Instruction on safe operation of radiation producing equipment and handling of radioactive materials; origin and/or derivation of certain formulae and techniques useful in radiation protection programs; regulatory agencies, regulations, and regulatory guides pertinent to student's field; emphasis on applied aspects of radiation protection; characteristics and biological effects of ionizing radiations, properties and uses of radioisotopes, medical applications, and biological basis for protection procedures. Requirements: enrollment in radiation sciences or nuclear medicine technology program. Same as RSP:3130.

FRRB:3215 Medical Physics II 2-3 s.h.
Treatment units used in external radiation therapy; beam calculations, isodose distributions, brachytherapy, quality assurance and quality management, protection and safety. Prerequisites: RSTH:3110. Same as RSTH:3215.

FRRB:4000 Special Topics: Advanced Undergraduates arr.
Readings and/or laboratory experience. Offered fall semesters.

FRRB:5000 Radiation Biology 4 s.h.
Characteristics and biological effects of ionizing radiations. Offered fall semesters of odd years. Prerequisites: BIOC:3120 and CHEM:2210. Requirements: college-level physics.

FRRB:5001 Research: Special Topics arr.

FRRB:6000 Seminar: Free Radical and Radiation Biology 1 s.h.

FRRB:6004 Research: Free Radical and Radiation Biology arr.

FRRB:6006 Topics in Free Radical Biology and Medicine 1 s.h.
New literature in area of free radicals.

FRRB:6008 Topics in Radiation and Cancer Biology 1 s.h.
Emerging concepts in the biological effects of radiation and cancer biology; current topics in journal club format.

FRRB:7000 Redox Biology and Medicine 4 s.h.
Chemistry of free radicals, related oxidants, and antioxidants; antioxidant (redox) enzymes—their structure, biochemical function, regulation, and function in redox biology; targets of oxidants—lipids, proteins, DNA; redox biology of health (infants to healthy aging) and disease (cancer, cardiovascular disease, diabetes, neurodegenerative diseases). Offered fall semesters of even years. Prerequisites: BIOC:3120 or CHEM:2210.

FRRB:7001 Molecular and Cellular Biology of Cancer 3 s.h.
Fundamental aspects of oncology at the cellular and molecular levels; mechanisms of cancer initiation and progression, oncogene action, DNA damage and repair, carcinogenesis by radiation, chemicals, viruses; tumor immunology, anticancer therapies. Offered spring semesters of odd years. Requirements: strong basic science background. Same as PATH:7001.
Internal Medicine

Interim chair

• Gary B. Rosenthal

Faculty: http://www.medicine.uiowa.edu/InternalMedicine/People/
Web site: http://www.medicine.uiowa.edu/internalmedicine/

Internal medicine is concerned with the diagnosis, prevention, and treatment of diseases of adults. The Department of Internal Medicine's educational, patient care, and research activities cover all facets of the discipline, including general internal medicine and primary care as well as the specialized areas of allergy and immunology, cardiology, clinical pharmacology, endocrinology and metabolism, gastroenterology and hepatology, hematology, oncology, blood and marrow transplant, infectious diseases, nephrology, pulmonary, critical care, occupational medicine, and rheumatology. The department is committed to the complete spectrum of medical education, from didactic and clinical education of M.D. students to resident and fellowship training.

M.D. Student Training


During the third year, the department's faculty members instruct students for six weeks in IM:8301 Inpatient Internal Medicine and for four weeks in IM:8302 Outpatient Internal Medicine at University of Iowa Hospitals and Clinics, Iowa River Landing Clinic and the Iowa City Veterans Affairs Medical Center, or hospitals of the Des Moines Area Medical Education Consortium. Students actively participate as members of an inpatient ward team and/or specialty consult service in IM:8301, and in IM:8302 they participate in the evaluation and management of patients at outpatient internal medicine clinics.

During the fourth year, M.D. students may select a clinical experience to fit their own career goals from courses offered in general medicine, subspecialties, intensive care, and a subinternship program.

Residency Program, Postgraduate Work

The department offers a three-year residency training program in internal medicine. In addition, most of the department's specialty divisions offer two- and three-year clinical and research fellowships, in which fellows develop special knowledge and skills relevant to their specialties. Fellows who hold doctoral degrees may be accepted to programs whose major focus is laboratory research.

Facilities

Teaching in the Department of Internal Medicine takes place in the medical services and laboratories of University of Iowa Hospitals and Clinics, Iowa River Landing Clinic and the Iowa City Veterans Affairs Medical Center, and in Des Moines at the Veterans Affairs Central Iowa Health Care System and Iowa Methodist Medical Center.

Courses

IM:8301 Inpatient Internal Medicine
Development of knowledge, diagnostic and management skills vital to care of hospitalized patients; clinical responsibilities, educational conferences, independent study.

IM:8302 Outpatient Internal Medicine
Development of knowledge, diagnostic and management skills in the outpatient clinical setting; clinical activities, discussion of problems, independent study.

IM:8303 Electrocardiography
Scalar electrocardiography with option of viewing exercise studies including treadmill testing; initial interpretation of current tracings and daily staff conferences.

IM:8401 Subinternship in Internal Medicine
Student responsibility for evaluating, treating, and following patients admitted to inpatient general medicine services. Requirements: fourth-year M.D. enrollment.

IM:8410 Clinical Allergy Immunology
Pathogenesis, diagnosis, and management of asthma and allergic and immunologic diseases; conducting and interpreting relevant specialized clinical and laboratory tests; emphasis on outpatients; formal and informal teaching sessions.

IM:8412 Clinical Cardiology
Development of breadth and depth in diagnostic and therapeutic problems encountered in clinical cardiology; participation in evaluation and decisions regarding patients seen sometimes in the cardiovascular clinic, inpatient cardiology wards, and electrophysiology service.

IM:8414 Clinical Endocrinology
New patient evaluation, inpatient referral; returning patients in diabetes, endocrine clinics; complete patient evaluations, charts; participation in clinical conferences.

IM:8416 Clinical Gastroenterology
Work in consultation service at University Hospitals and Clinics or Veterans Affairs Iowa City Health Care System; assistance in diagnostic procedures for patients examined as part of consultation service; participation in patient follow-up through weekly return clinic.

IM:8418 Hematology Oncology
Diagnostic skills in hematology and oncology.
**IM:8422 Clinical Infectious Disease** 4 s.h.
Diagnosis, treatment, follow-up, study of patients with infectious diseases, under staff guidance; techniques of diagnostic microbiology; participation in conferences, teaching activities.

**IM:8424 Medical Intensive Care Unit** 4 s.h.

**IM:8426 Pulmonary Disease** 4 s.h.
Breadth, depth in diagnostic, therapeutic problems encountered in clinical pulmonary disease; evaluation of outpatients and inpatients under staff supervision; interpretation of special studies carried out in pulmonary function laboratory, fiberoptic bronchoscopy and brush biopsy of lung; exposure to diagnosis and management of acute respiratory failure in intensive care units at University of Iowa Hospitals and Clinics, Veterans Affairs Iowa City Health Care System.

**IM:8428 Nephrology** 4 s.h.
Evaluation of patients from University of Iowa Hospitals and Clinics inpatient service, Veterans Affairs Iowa City Health Care System, clinics; emphasis on early kidney disease, all varieties of hypertension.

**IM:8434 Clinical Rheumatology** 4 s.h.
Clinical features of rheumatic diseases, their differential diagnosis, principles of management; patients from arthritis clinic, inpatient consultation service of University of Iowa Hospitals and Clinics, Veterans Affairs Iowa City Health Care System.

**IM:8435 Palliative Care** 2,4 s.h.
Requirements: M.D. enrollment.

**IM:8437 Multidisciplinary Cancer Care** 2 s.h.
Basic concepts of cancer care; role of multidisciplinary team in care of cancer patients; development of attitudes, knowledge, and skills useful for entering a specialty that encounters patients with cancer. Requirements: M.D. enrollment.

**IM:8445 Integrated Topics in Infectious Diseases** 4 s.h.
Questions in host-parasite interactions; monthly case study followed by journals club discussions.

**IM:8450 Continuity of Care in Outpatient Internal Medicine** 4 s.h.
Experience with longitudinal continuity of care for patients in the outpatient setting; clinical and didactic exposure to broad spectrum of general internal medicine problems. Requirements: fourth-year M.D. enrollment.

**IM:8451 Subinternship in General Internal Medicine and ICU, Des Moines** 4 s.h.
Four-week rotation at Des Moines Medical Education Consortium; experience as a subintern in general internal medicine and the ICU. Requirements: fourth-year M.D. enrollment.

**IM:8452 Subinternship in Internal Medicine at VAMC, Des Moines** 4 s.h.
Rotation at the Veterans Affairs Central Iowa Health Care System; subinternship on general internal medicine ward. Requirements: fourth-year M.D. enrollment.

**IM:8453 Critical Care Rotation, IMMC, ICU, DM** 4 s.h.
Subinternship on medical critical care team, with daily rounds, teaching. Requirements: fourth-year M.D. enrollment.

**IM:8454 General Medicine Consult Service, IMMC** 4 s.h.
Principles of consultative medicine provided by general internists to non-internal medicine patients; how to assess perioperative risk for patients evaluated before surgery.

**IM:8455 Public Health Medicine** 4 s.h.
Participation in ongoing projects related to public health issues of acute disease; training and career opportunities in public health practice.

**IM:8456 Clinical Cardiology Coronary Care Experience, Iowa Methodist, Des Moines** 4 s.h.

**IM:8457 Clinical Nephrology, Iowa Methodist, Des Moines** 2,4 s.h.
Exposure to common nephrology problems, including acute renal failure, chronic renal failure, acid-base disorders, common electrolyte disorders.

**IM:8458 Community-Based General Internal Medicine** 4 s.h.
Primary care internal medicine in a community setting. Requirements: fourth-year M.D. enrollment.

**IM:8495 Internal Medicine ICU Off Campus** 4 s.h.
Experience as subintern in the ICU/MICU; daily rounds and teaching with medical critical care staff.

**IM:8498 Internal Medicine On Campus** 4 s.h.

**IM:8499 Internal Medicine Off Campus** 4 s.h.
Medical Education Program

Director
• Kristi J. Ferguson

Graduate degree: M.M.E.
Graduate certificate: Medical education
Faculty: http://www.healthcare.uiowa.edu/ocrme/about_ocrme/fac_staff.htm
Web site: http://www.healthcare.uiowa.edu/ocrme/masters/programoverview.htm

The Medical Education Program is dedicated to providing medical faculty members with formal training in medical education. The program is coordinated through the Office of Consultation and Research in Medical Education (OCRME). Courses are taught by OCRME faculty, who also advise students in the program.

Graduate Programs of Study
• Master in Medical Education
• Certificate in Medical Education

Application requirements are the same for both programs; see "Admission" below.

Master in Medical Education

The Master in Medical Education requires a minimum of 30 s.h. of graduate credit. The program is designed to prepare medical faculty members to educate health professionals. It is intended for Carver College of Medicine faculty members and professional staff as well as for University of Iowa resident physicians and fellows.

The program gives participants the opportunity to specialize in theory and practice of curriculum design, effective teaching, assessment, and other aspects of medical education. Graduates of the program should be able to:

• design evidence-based education programs and materials with appropriate scope, sequence, and focus for intended learners;
• deliver effective instruction to individuals and small or large groups in classroom, laboratory, or clinical settings;
• evaluate the effectiveness of educational instruction, using formative and summative methods;
• understand basic principles of educational measurement and be able to apply them to medical education;
• use assessments to promote learning and to assess learning progress and status; and
• understand basic principles of, and be able to interpret and use, educational research.

The M.M.E. may be completed in as few as two years or as many as five. Students may begin the program in fall semester, spring semester, or summer session. Some of the required courses are offered online, and required on-campus courses have evening meeting times.

The curriculum includes 24 s.h. of required courses and 6-9 s.h. of electives. Students must register for at least one course each academic year in order to maintain satisfactory progress toward the degree. The program’s faculty provides substantial student advising and consultation.

During their first semester, students file a plan of study. Each student’s plan must include a description of the student’s goals, intended graduation date, and a list of courses the student plans to take each semester he or she is working toward the degree. The study plan must include all of the courses required for the degree and must include any requests for transfer credit. The plan must be approved by the director of the M.M.E. program and by the student’s advisor. Subsequent revisions of the plan must have the advisor’s approval.

The Master in Medical Education requires the following course work:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MED:9701</td>
<td>Instructional Design and Technology</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>MED:9702</td>
<td>Clinical Teaching in Medical Education</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>MED:9703</td>
<td>Educational Research and Evaluation</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>MED:9711</td>
<td>Teaching Methods in Medical Education</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>MED:9712</td>
<td>Introduction to Educational Measurement in Medical Education</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>MED:9713</td>
<td>Assessment in Medical Education</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>MED:9714</td>
<td>Current Issues in Medical Education</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>MED:9720</td>
<td>Portfolio Project</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>Electives</td>
<td></td>
<td>6-9 s.h.</td>
</tr>
</tbody>
</table>

Students who are not involved with clinical teaching may substitute another course for MED:9702 Clinical Teaching in Medical Education.

Students must have completed at least 18 s.h. before enrolling in MED:9720 Portfolio Project. In the portfolio, students integrate the materials they have developed over the course of the program into a document. Three faculty members review the project and evaluate the student’s participation in the program.

Electives require approval of the student’s advisor. They may include courses in the M.M.E. program as well as those offered by relevant departments and programs (e.g., College of Education, Tippie College of Business). Students should check with their advisors to determine which courses are graduate level.

Certificate

The Certificate in Medical Education requires a minimum of 12 s.h. of graduate credit. The certificate program is designed to help participants find new ways to enhance their scholarship and skills in teaching, curriculum design, and education assessment. It is intended for Carver College of Medicine faculty and professional staff as well as for University of Iowa resident physicians and fellows.

Required course work for the certificate is taken from the Master of Medical Education program. Individuals who complete the certificate and then decide they would like to earn the master’s degree may count their certificate course work toward the M.M.E.

The Certificate in Medical Education requires the following course work:

Methods—one of these:
MED:9701 Instructional Design and Technology 3 s.h.
MED:9702 Clinical Teaching in Medical Education 3 s.h.
MED:9711 Teaching Methods in Medical Education 3 s.h.

Research and measurement—one of these:
MED:9703 Educational Research and Evaluation 3 s.h.
MED:9712 Introduction to Educational Measurement in Medical Education 3 s.h.

And:
Additional courses chosen from M.M.E. requirements 6 s.h.

Admission

Application requirements are the same for the M.M.E. degree and the certificate program. Applicants should hold an M.D. degree and must have performed satisfactorily on the Medical College Admission Test (MCAT). Basic sciences applicants without an M.D. must hold an equivalent degree and must have performed satisfactorily on an admission test equivalent to the MCAT.

Applicants whose first language is not English and who do not hold a baccalaureate or advanced degree from an accredited university in the United States, English-speaking Africa, Australia, Canada (except Quebec), New Zealand, or the United Kingdom must submit scores on the Test of English as a Foreign Language (TOEFL).

Application materials must include an official transcript showing medical course work and medical degree, or equivalent for basic sciences applicants (current and former University of Iowa students do not need to request a UI transcript or transcripts previously submitted to the University); a letter of reference from the applicant's department head and one additional letter of reference; and a 300-500 word essay describing the applicant's interest in medical education and in the Master in Medical Education program or the Certificate in Medical Education program.

To apply to the M.M.E. program, see Master's in Medical Education/Admissions and Application on the program's web site; to apply to the certificate program, see Applying as a Nondegree Graduate Student on the University of Iowa Office of Admissions web site. Application materials should be submitted to the Office of Admissions.

Application deadlines are July 15 for fall semester entry, November 15 for spring semester entry, and April 15 for summer session entry.
Medical Laboratory Science

Site coordinator

• Norma Ward (Pathology)

Undergraduate major: medical laboratory science (B.S.)

Faculty: http://www.medicine.uiowa.edu/Pathology/people/

Web site: http://www.medicine.uiowa.edu/pathology/education/mlsp/mlsp/

Medical laboratory scientists and medical technologists perform the laboratory tests that provide physicians with information vital for accurate diagnosis and proper treatment of disease. They are in demand in hospital, private, and government laboratories; clinics; physicians' offices; and industrial, pharmaceutical, biological, and environmental research laboratories. Medical laboratory scientists and medical technologists are highly skilled health team members who use a battery of sophisticated procedures and instruments in their work and who possess specialized knowledge and skills acquired through completion of a formal program of academic and clinical study.

Undergraduate Program of Study

• Major in medical laboratory science (Bachelor of Science)

The Carver College of Medicine partners with Allen College in Waterloo, Iowa, to offer the major in medical laboratory science. The program is fully accredited by the National Accrediting Agency for Clinical Laboratory Sciences. All graduates are eligible for national certification examinations in medical laboratory science.

The Medical Laboratory Science Program offers a bachelor's degree; it does not offer a certificate.

Undergraduate study in medical laboratory science is guided by the academic rules and procedures outlined under “Undergraduate Programs” in the Carver College of Medicine (p. 1005) section of the Catalog. Because the Carver College of Medicine partners with Allen College for the medical laboratory science major, students are not held to the University of Iowa in-residence requirement.

Bachelor of Science

The Bachelor of Science with a major in medical laboratory science requires a minimum of 124 s.h., including 84 s.h. of preparatory study and 40 s.h. in the professional (clinical) program, which consists of 11 months of didactic and practical instruction and clinical rotations. Students must maintain a g.p.a. of at least 2.70 in all courses for the major and in all University of Iowa courses. They also must complete the College of Liberal Arts and Sciences General Education Program (p. 313).

Bachelor of Science students who have completed all preparatory study (years one through three) begin the four-year professional program in late August with online didactic lectures. They attend three separate days of laboratory skills instruction on the Allen College campus, and in mid-November they begin clinical rotations in the laboratories of University of Iowa Hospitals and Clinics and the Iowa City Veterans Affairs Medical Center. Students who successfully complete the 11-month professional program graduate with a Bachelor of Science from the University of Iowa and a Bachelor of Health Science from Allen College.

Professional program requirements are listed below, under "Fourth Year: Professional Program." To learn more about the professional program, visit Medical Laboratory Science (MLS) on the Allen College web site.

As part of their preparatory study, students must complete specific courses that are prerequisites for admission to the major.

PREPARATORY STUDY: PREREQUISITES FOR ADMISSION TO THE MAJOR

Students must complete the following course work before they may be admitted to the major in medical laboratory science. Students must earn a grade of C-minus or higher in all prerequisite courses.

All of these:

- BIOL:1411-BIOL:1412 Foundations of Biology - Diversity of Form and Function 8 s.h.
- CHEM:1110 & CHEM:1120 Principles of Chemistry I-II 8 s.h.
- CHEM:2210 Organic Chemistry I 3 s.h.
- MICR:2157 General Microbiology 5 s.h.
- PSY:1001 Elementary Psychology 3 s.h.
- RHET:1030 Rhetoric 4-5 s.h.
- SOC:1010 Introduction to Sociology 3-4 s.h.

One of these sequences:

- HHP:1100 & HHP:1110 Human Anatomy - Human Anatomy Laboratory 4 s.h.
- HHP:1300 & HHP:1310 Fundamentals of Human Physiology - Human Physiology Laboratory 4 s.h.

One of these:

- BIOC:3110 Biochemistry 3 s.h.
- CHEM:2220 Organic Chemistry II 3 s.h.

One of these:

- MATH:1005 College Algebra 4 s.h.
- MATH:1020 Elementary Functions 4 s.h.
- MATH:1440 Mathematics for the Biological Sciences 4 s.h.

One of these:

- STAT:1020/PSQF:1020 Elementary Statistics and Inference 3 s.h.
- STAT:3510 Biostatistics 3 s.h.

FOURTH YEAR: PROFESSIONAL PROGRAM

Students complete 40 s.h. in the following professional program requirements through Allen College.

All of these:

- PATH:4150 Advanced Laboratory Practice 2 s.h.
- PATH:4151 MLS Program Registration 0 s.h.
- PATH:4152 MLS Theory, Application, and Correlation 3 s.h.
- PATH:4154 Clinical Chemistry I 3 s.h.
- PATH:4155 Clinical Chemistry II 3 s.h.
- PATH:4156 Clinical Hematology I 4 s.h.
PATH:4157 Clinical Hematology II  3 s.h.
PATH:4158 Clinical Microbiology I  4 s.h.
PATH:4159 Clinical Microbiology II  3 s.h.
PATH:4160 Clinical Immunology  1 s.h.
PATH:4162 Clinical Immunohematology I  3 s.h.
PATH:4163 Clinical Immunohematology II  3 s.h.
PATH:4164 Phlebotomy for Clinical Laboratory Science  1 s.h.
PATH:4166 Urine and Body Fluid Analysis  2 s.h.
PATH:4170 Clinical Laboratory Management I  2 s.h.
PATH:4171 Clinical Laboratory Management II  2 s.h.
PATH:4172 Molecular Biology Methods  1 s.h.

Admission

Admission to the medical laboratory science professional program (fourth year) is competitive; enrollment may be limited. Applications are reviewed twice a year in October and February. Applicant review and admission will continue on a monthly basis until the program is full. Students must apply to Allen College. Most students apply during fall of their third year and begin the professional program the following August. Applications are accepted until the class is filled.

Before beginning the professional program, students must complete all prerequisites, including the College of Liberal Arts and Sciences General Education Program (p. 313) requirements, and must earn at least 84 s.h. of college credit. They satisfy the English and public speaking prerequisite requirements by fulfilling the General Education Program's Rhetoric requirement. Applicants must have a cumulative g.p.a. of at least 2.70 both overall and in science course work. They must satisfy any English as a Second Language requirements specified by The University of Iowa before beginning the professional program.

Students should consult with a Medical Laboratory Science Program advisor as early as possible to plan preclinical studies that meet all requirements.

Expenses

Students are responsible for buying textbooks and paying tuition and student fees. The Medical Laboratory Science Program provides laboratory coats for professional program students.
Medical Scientist Training Program

Directors

- Pamela Geyer (Biochemistry/Obstetrics and Gynecology), Steven R. Lentz (Internal Medicine)

Faculty: http://www.healthcare.uiowa.edu/mstp/New/mstp/departments/index.htm
Web site: http://www.healthcare.uiowa.edu/mstp/

Professional/Graduate Program of Study

- Joint Doctor of Medicine/Doctor of Philosophy

The Iowa Medical Scientist Training Program (MSTP) prepares trainees for careers in academic medicine, with emphasis on basic and clinical research.

Joint M.D./Ph.D.

The joint Doctor of Medicine/Doctor of Philosophy normally requires seven to eight years of continuous study. It provides an effective and efficient means to integrate graduate and clinical training, combining the scientific approach with clinical medicine.

During the first three semesters of the program, trainees take course work in the basic sciences fundamental to the study of medicine and complete experiences that introduce mechanisms of health and disease, and to principles of clinical practice; see Doctor of Medicine (p. 1031) in the Catalog. This early training provides broad exposure to the language and organizing concepts that form the foundation for a career as a physician scientist. Trainees also begin the research component of the graduate phase of the program during this time, through summer laboratory rotations, enrollment in MSTP:8513 Analyzing and Presenting Medical Research, research presentations by MSTP faculty and students, and a student-sponsored seminar series. Trainees participate in Conversations in Research, in which MSTP faculty members discuss their research and career interests, and they attend MSTP Grand Rounds, a forum for patient-based discussions that emphasizes how science and medicine intersect.

During the fourth semester, students enroll in core clinical clerkships, in which they gain broad exposure to the spectrum of human disease and experience direct patient care before they enter the graduate phase of training. At the end of the fourth semester, all trainees take Step 1 of the U.S. Medical Licensing Examination.

At the beginning of the third year, trainees select a Ph.D. thesis mentor and enroll in a graduate department or interdisciplinary graduate program to begin their scientific training.

The focus of the graduate years of study is engagement in academic and research experiences that promote the trainees’ development into independent investigators. Clinical contact is maintained during this phase of training through participation in seminar programs, MSTP Grand Rounds, and MSTP:8512 MSTP Clinical Connections, a course that provides the opportunity for mentored clinical experiences.

Upon completing the Ph.D. dissertation, trainees return to the Carver College of Medicine's M.D. curriculum to complete the clinical clerkship requirements for the joint M.D./Ph.D. program. During this phase, trainees bring a sophistication in the scientific approach to problem solving that they apply to human disease. They renew and develop clinical skills acquired in their early training and reinforce their understanding of the scientific basis of disease through continued participation in MSTP Grand Rounds. Upon completion of the clinical curriculum, trainees are awarded the M.D. and Ph.D.

Most graduates of the program elect to enter residency programs in clinical medicine and embark on careers as medical school faculty members in clinical disciplines with opportunities for basic and applied research. Other graduates accept academic appointments in basic science departments and spend a major part of their professional activity in biomedical research and teaching.

Admission

Applicants must meet requirements for admission to the M.D. program in the Carver College of Medicine; see “Admission to the M.D. Program” under Doctor of Medicine (p. 1031) in the Catalog. They also must meet the admission requirements of the Graduate College; see the Manual of Rules and Regulations of the Graduate College.

Applicants should have completed requirements for a bachelor’s degree at an accredited academic institution. In addition to outstanding academic credentials, including strength in biological, physical, and mathematical sciences, they must demonstrate aptitude for and commitment to scientific research through productive research experience during their undergraduate years or after. Admission normally is made for entry to the first year of the program, but applicants already enrolled in the Carver College of Medicine may request admission with advanced standing.

Application

The Carver College of Medicine participates in the American Medical College Application Service (AMCAS). Program applicants should select M.D./Ph.D. Program-Type on their AMCAS application and instruct AMCAS to forward their credentials to the Carver College of Medicine (IA131). Applications should be submitted as early as possible to allow careful review by the admissions committees of the Medical Scientist Training Program and the Carver College of Medicine.

All candidates must take the Medical College Admission Test (MCAT), according to Carver College of Medicine requirements. The Graduate Record Exam (GRE) is not required for admission.

Application to the Graduate College is not required before acceptance to the MSTP. Trainees admitted to the program receive assistance with Graduate College enrollment.

Financial Support

Trainees receive stipend and full tuition support from a National Institutes of Health MSTP training grant to the University of Iowa, supplemented by other institutional and individual awards. Students in the graduate phase of
training receive support from their graduate departments or interdisciplinary programs and their research advisors. The program office also helps selected trainees apply for competitive national awards for outstanding academic and research achievement.

Courses

**MSTP:8511 MSTP Research**
arr.
Research experience. Requirements: Medical Scientist Training Program enrollment.

**MSTP:8512 MSTP Clinical Connections**
arr.
Experience with physician-scientist preceptor in medical interviewing, physical examination, patient presentation through direct patient interaction. Requirements: Medical Scientist Training Program graduate phase enrollment.

**MSTP:8513 Analyzing and Presenting Medical Research**
1 s.h.
How to read, interpret, and present medical and scientific literature; students read and present representative papers from scientific and medical literature.
Microbiology

Chair

• Patrick M. Schlievert

Undergraduate major: microbiology (B.S.)
Undergraduate minor: microbiology
Graduate degrees: M.S. in microbiology; Ph.D. in microbiology
Faculty: http://www.medicine.uiowa.edu/dept_primary_apr.aspx?appointment=Microbiology
Web site: http://www.medicine.uiowa.edu/microbiology/

Study in the Department of Microbiology is dedicated to the branch of biological sciences that deals with the smallest living things: bacteria, archaea, fungi, algae, protozoa, and viruses. It is coupled with immunology, the study of the response of higher organisms to foreign substances.

Microbiology and immunology are at the forefront of the modern biological revolution. Microbes are often the experimental subjects of choice for examining basic genetic and biological phenomena because of their small size, rapid growth rate, and relative simplicity. A significant portion of contemporary biochemical research employs microbiological and immunological methods.

Current research is making theoretical and practical advances concerning microbial species and viruses that infect animals, including man, plants, and other microbes; the use of comparative genomics, gene expression profiling, and recombinant DNA methods to analyze basic biological processes and generate valuable products; the nature and occurrence of microbial life in extreme or unusual environments; microbial synthesis and modification of antibiotics and other natural products; the role of microbes in stabilization of the biosphere by recycling and detoxifying waste products; the genetics and regulation of metabolic processes; and the genetics and regulation of the immune response, including characterization of mechanisms used by bacteria to signal one another and characterization of interactions between different types of immune cells and their targets.

The Department of Microbiology offers an undergraduate major, an undergraduate minor, and graduate degree programs and determines the curricula for those programs. Undergraduates majoring in microbiology receive their degrees (Bachelor of Science) from the College of Liberal Arts and Sciences and are governed by that college's undergraduate academic policies. Graduate degrees in microbiology are conferred by the Graduate College.

Undergraduate Programs of Study

• Major in microbiology (Bachelor of Science)
• Minor in microbiology

Microbiology is an excellent major for undergraduate students who want a good general education with emphasis on an important and interesting branch of biological sciences. Graduates find employment opportunities in government, hospitals, public health laboratories, research laboratories, and industrial laboratories (food, dairy, chemical, pharmaceutical, and biotechnology companies). Those who pursue advanced degrees have more advanced career opportunities in these same areas as well as in college and university teaching.

Bachelor of Science

The Bachelor of Science with a major in microbiology requires a minimum of 120 s.h., including 63-64 s.h. of work for the major (21 s.h. in microbiology and 42-43 s.h. in supporting course work). Students must maintain G.P.A. of at least 2.00 in all courses for the major and in all UI courses for the major. They also must complete the College of Liberal Arts and Sciences General Education Program (p. 313).

Students must complete at least 12 s.h. of the required 21 s.h. in microbiology courses at the University of Iowa.

The major in microbiology requires the following course work.

MICROBIOLOGY COURSES

Students earn 21 s.h. in microbiology courses, as follows.

MICR:2157 General Microbiology (with a grade of C or higher) 5 s.h.
MICR:4163 Seminar: Microbiology (taken during the last two semesters before graduation) 2 s.h.

Additional microbiology courses, with at least 14 s.h. in courses numbered MICR:3147 or above, excluding MICR:3164 and MICR:5220 14 s.h.

Students must earn a grade of C or higher in MICR:2157 in order to take more advanced microbiology courses.

Students must take MICR:4163 once for credit during their last two semesters before graduation. They may apply a maximum of 2 s.h. earned in the course toward the major, but they are encouraged to take it for 0 s.h. during other semesters after they have completed MICR:2157.

A maximum of 4 s.h. earned in MICR:4161 Undergraduate Research in Microbiology may be counted toward the major. However, honors students must complete 23 s.h. of microbiology courses for the major and may count 6 s.h. earned in MICR:4171 Honors Undergraduate Research in Microbiology; see "Honors in the Major" below.

SUPPORTING COURSE WORK

In addition to the required 21 s.h. in microbiology, the major requires the supporting course work listed below. These courses may not be taken pass/nonpass.

All of these:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL:1411-BIOL:1412 Foundations of Biology I-II</td>
<td>8 s.h.</td>
</tr>
<tr>
<td>CHEM:1110 &amp; CHEM:1120 Principles of Chemistry I-II</td>
<td>8 s.h.</td>
</tr>
<tr>
<td>CHEM:2210 &amp; CHEM:2220 Organic Chemistry I-II</td>
<td>6 s.h.</td>
</tr>
<tr>
<td>CHEM:2410 Organic Chemistry Laboratory</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

One of these sequences:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS:1511-PHYS:1512 College Physics I-II</td>
<td>8 s.h.</td>
</tr>
<tr>
<td>PHYS:1611-PHYS:1612 Introductory Physics I-II</td>
<td>8 s.h.</td>
</tr>
</tbody>
</table>
One of these:

- BIOS:5110 Introduction to Biostatistics 3 s.h.
- MATH:1460 Calculus for the Biological Sciences 4 s.h.
- MATH:1550 Engineering Mathematics I: Single Variable Calculus 4 s.h.
- MATH:1850 Calculus I 4 s.h.
- STAT:3510 Biostatistics 3 s.h.

In addition, the following course may be recommended for some students.

- CNW:2680 The Art and Craft of Creative Nonfiction 3 s.h.

**Four-Year Graduation Plan**

The following checkpoints list the minimum requirements students must complete by certain semesters in order to stay on the University's Four-Year Graduation Plan. (Courses in the major are those required to complete the major; they may be offered by departments other than the major department.)

**Before the third semester begins:**

- BIOL:1411 Foundations of Biology
- CHEM:1110 Principles of Chemistry I
- CHEM:1120 Principles of Chemistry II, and an approved calculus or biostatistics course

**Before the fifth semester begins:**

- BIOL:1412 Diversity of Form and Function
- CHEM:2210 Organic Chemistry I
- CHEM:2210 Organic Chemistry II
- CHEM:2410 Organic Chemistry Laboratory, and MICR:2157 General Microbiology

**Before the seventh semester begins:**

- five more courses in the major and at least 90 s.h. earned toward the degree

**Before the eighth semester begins:**

- another 10-12 s.h. of course work

**During the eighth semester:**

- enrollment in all remaining course work in the major, all remaining required General Education courses, and a sufficient number of semester hours to graduate

**Honors in the Major**

Students majoring in microbiology have the opportunity to graduate with honors in the major. Departmental honors students must maintain a g.p.a. of at least 3.33, both cumulative and in microbiology courses. To graduate with honors in the microbiology major, students must complete 23 s.h. of course work in microbiology, including 6 s.h. in MICR:4171 Honors Undergraduate Research in Microbiology, which introduces them to experimental research. At the end of the research, they must successfully present written and oral reports.

In addition to honors in their majors, undergraduate students have a variety of opportunities for honors study and activities through membership in the University of Iowa Honors Program; visit Honors at Iowa to learn about the University's honors program.

**Joint B.S./Ph.D.**

Students majoring in microbiology who are interested in earning a doctoral degree may apply to the joint Bachelor of Science/Doctor of Philosophy program in microbiology. The joint program permits students to count 12 s.h. of credit toward both the B.S. and Ph.D. degree requirements before they have been granted the B.S. degree. Contact the Department of Microbiology for more information.

**Minor**

The minor in microbiology requires a minimum of 15 s.h. in microbiology courses, including 12 s.h. in microbiology courses considered advanced for the minor taken at the University of Iowa. Courses numbered MICR:3147 Survey of Immunology and above are considered advanced for the minor, except MICR:3164 Nursing Microbiology. Students must maintain a g.p.a. of at least 2.00 in all courses for the minor and in all UI courses for the minor. Course work in the minor may not be taken pass/nonpass.

Students may count a maximum of 2 s.h. earned in MICR:4161 Undergraduate Research in Microbiology or MICR:4171 Honors Undergraduate Research in Microbiology and a maximum of 2 s.h. earned in MICR:4163 Seminar: Microbiology toward the minor. They may count MICR:5218 Microscopy for Biomedical Research toward the minor but not MICR:5220 Advanced Microscopy for Biomedical Research.

**Graduate Programs of Study**

- Master of Science in microbiology
- Doctor of Philosophy in microbiology

Graduate study in microbiology is designed to help students become highly qualified in microbiology research and teaching. Admitted graduate students usually pursue the Ph.D.

Graduate study is offered in six subdisciplines: pathogenic bacteriology, microbial genetics, immunology, microbial physiology, animal virology, and bioinformatics. Several areas involve interdisciplinary training both within and outside the department, so students gain broad experience during their course of study. Students also may pursue interdisciplinary Ph.D. programs in genetics (p. 936), immunology (p. 940), and molecular and cellular biology (p. 953).

During their first year, students rotate in up to three laboratories of their choice and are advised by the Graduate Student Advisory Committee. At the end of May of the first year, they choose a research supervisor who chairs their advisory committee. The committee provides intellectual and research guidance for the student’s training.

The Department of Microbiology cooperates with other University of Iowa departments to give students ample access to diverse course offerings, seminars, and research programs. For example, microbiology students may participate in courses and seminars in immunology, genetics, molecular and cellular biology, biocatalysis/biotechnology, and electron microscopy.

All students admitted to advanced degree programs are expected to assist in departmental teaching.

**Master of Science**

The Master of Science program in microbiology requires a minimum of 30 s.h. of graduate credit. M.S. students are required to earn a minimum of 12 s.h. in microbiology courses chosen from those of at least the department's six subdisciplines. They may substitute a course they have already taken (at the University of Iowa or elsewhere) for
a course requirement, with the M.S. advisory committee’s approval. Additional course requirements depend on students’ interests and the advice of the examining committee.

Students must write a thesis based on their own research and defend it satisfactorily in an oral examination. No more than 9 s.h. of credit for thesis research may be counted toward the 30 s.h. required for the Master of Science.

**Doctor of Philosophy**

The Doctor of Philosophy program in microbiology requires a minimum of 72 s.h. of graduate credit. Ph.D. students are required to earn approximately 10 s.h. of credit in graduate-level microbiology courses. They may substitute a course they have already taken (at the University of Iowa or elsewhere) for a course requirement, with the Ph.D. advisory committee’s approval.

Students must pass a comprehensive examination before the end of their fourth semester in the program and write a thesis based on their own research. The thesis must be defended satisfactorily in an oral examination.

**Admission**

Applicants must meet the admission requirements of the Graduate College; see the Manual of Rules and Regulations of the Graduate College. They should have a cumulative g.p.a. of at least 3.00 and must have completed courses in biology, chemistry (inorganic and organic), mathematics including calculus, and physics. Those admitted with deficiencies must complete the relevant course work during their first year of graduate study. Admission is determined through a review and formal vote by the faculty. Preference is given to students applying for the Ph.D. program.

**Facilities**

The Department of Microbiology is situated on the University of Iowa health sciences campus, where it shares the Bowen Science Building with the Departments of Anatomy and Cell Biology, Biochemistry, Molecular Physiology and Biophysics, and Pharmacology. Laboratory space and modern equipment are available for teaching and research.

**Courses**

**Lower-Level Undergraduate**

**MICR:1006 The Microbial World**

Basic principles of microbial world for nonscience majors; introduction to bacteria, viruses, and fungi; how they differ from more complex cells, how they are found in every environment on earth and on every human body, their uses to benefit humans, their ability to cause illness in humans and animals.

**MICR:2157 General Microbiology**

Principles of bacterial and viral diversity, structure, genetics, physiology and metabolism; in contexts of molecular biology, immunology, infectious disease, and environmental microbiology; laboratory emphasis on basic techniques. Prerequisites: BIOL:1411.

**Upper-Level Undergraduate and Graduate**

**MICR:3112 Pharmacy Microbiology**

Medical microbiology: bacteriology, immunology, pathogenic bacteriology, virology, mycology, parasitology. Requirements: pre-pharmacy standing.

**MICR:3147 Survey of Immunology**

Important principles and key concepts in immunology; overview of innate and adaptive immune systems and their functions at cellular and molecular levels. Prerequisites: MICR:2157.

**MICR:3159 Pathogenic Bacteriology**

Pathogenic bacteria with emphasis on mechanisms of pathogenicity and structure-function; laboratory methods for isolation and identification with emphasis on advanced methods of experimentation. Requirements: grade of C or higher in MICR:2157.

**MICR:3160 Microbial Physiology**

Bacterial genomes, cell structure, growth, energy metabolism, biosynthesis, mechanisms of signal transduction and regulation. Requirements: biochemistry course and grade of C or higher in MICR:2157.

**MICR:3164 Nursing Microbiology**

Overview of bacteria, viruses, and eukaryotic microorganisms that cause human disease; microbial structure, growth control and reproduction; immunology in the context of host defense mechanisms. Prerequisites: BIOL:1140 or BIOL:1141 or BIOL:1411. Requirements: pre-nursing standing.

**MICR:3168 Introduction to Animal Viruses**

Physical, chemical, and biological properties of animal viruses with emphasis on their remarkable strategies for infection and replication and their association with human disease; how to read primary literature. Requirements: grade of C or higher in MICR:2157.

**MICR:3170 Microbial Genetics**

Genetics of bacteria, bacteriophages. Requirements: grade of C or higher in BIOL:2512 or MICR:2157.

**MICR:3175 Microbial Genetics Laboratory**

Introductory research experience in bacterial genetics; students generate original data, formulate hypotheses, design and interpret experiments, read primary literature, and write a scientific manuscript on findings. Corequisites: MICR:3170 or MICR:3179, if not taken as a prerequisite.

**MICR:3178 Animal Viruses Laboratory**

Basic techniques and approaches in animal virology, including virus detection, virus growth measurement, and virus genetics. Corequisites: MICR:3168. Requirements: grade of C or higher in MICR:2157.
**Graduate**

**MICR:3179 Bacterial Diversity** 3 s.h.
Physiological and biochemical basis of microbial diversity; focus on synthetic and systems biology with primary emphasis on roles of small regulatory RNAs and their affects on development of diverse microbial populations, including human microbiome. Prerequisites: MICR:3170 and BIOL:3120.

**MICR:3190 Web-Based Nursing Microbiology** 4 s.h.
Nursing microbiology, principles of immunology; web-based instruction. Prerequisites: BIOL:1140 or BIOL:1141 or BIOL:1411. Requirements: pre-nursing standing.

**MICR:4161 Undergraduate Research in Microbiology** arr.
Research under faculty supervision. Prerequisites: BIOL:1411.

**MICR:4163 Seminar: Microbiology** 2 s.h.
Current topics in microbiology, immunology, and virology. Requirements: senior standing and grades of C or higher in at least two of these — MICR:3147 or MICR:3159 or MICR:3160 or MICR:3168 or MICR:3170 or MICR:3179.

**MICR:4169 Topics in Viral Biology and Pathogenesis** 1 s.h.
Topics include viral life cycles, immune response, antiviral treatments, potential for vaccine, animal models; lectures introducing subject matter; discussion of literature relevant to each week's topic. Prerequisites: MICR:3168.

**MICR:4171 Honors Undergraduate Research in Microbiology** arr.
Experimental research under faculty supervision. Prerequisites: BIOL:1411. Major, junior or senior standing, 3.33 overall g.p.a., and 3.33 g.p.a. in microbiology courses.

**Graduate**

**MICR:5218 Microscopy for Biomedical Research** arr.
Basic microscopy methods for research including optics, preparation, and analysis of biomedical specimens; light, fluorescence, confocal, transmitting electron, scanning electron, atomic force microscopes, elemental analysis; immunochemistry and stereochemistry techniques; individualized laboratory instruction. Prerequisites: BIOL:2723. Same as ACB:5218, BIOL:5218.

**MICR:5220 Advanced Microscopy for Biomedical Research** arr.
Technically advanced microscopy and instrumentation for research; individualized laboratory experience with opportunity to explore applications of microscopy methods. Requirements: for ACB:5220 — an introductory microscopy course; for BIOL:5220 — ACB:4156 or ACB:5218 or CBE:4156 or EES:4156 or MICR:5218; for MICR:5220 — an introductory EM course. Same as BIOL:5220, ACB:5220.

**MICR:5264 Directed Study in Microbiology** arr.

**MICR:5275 Perspectives in Biocatalysis** 1-3 s.h.
Applied enzymology, protein design, structure-activity relationships, biosensor technology, microbial transformations, biodegradation of environmental pollutants. Requirements: graduate standing in a participating department supported by the Predoctoral Training Program in Biotechnology. Same as CHEM:5875, PHAR:5875, CBE:5875, CEE:5875, BIO:5875.

**MICR:6201 Graduate Immunology** 3 s.h.
Ontogeny, activation, and function of T lymphocytes and B lymphocytes; innate immune effector mechanisms; major histocompatibility complex; antigen presentation; thymocyte positive and negative selection; signaling of T lymphocytes, B lymphocytes; emphasis on experimental methods for analysis of these processes. Requirements: for IMMU:6201 — college biology, general chemistry, and introductory immunology courses; for MICR:6201 — courses in college biology, genetics, general chemistry, and introductory immunology. Recommendations: for IMMU:6201 — courses in biochemistry and genetics; for MICR:6201 — biochemistry course. Same as IMMU:6201.

**MICR:6247 Graduate Survey of Immunology** 4 s.h.
Important principles and key concepts in immunology; overview of innate and adaptive immune systems and their functions at cellular and molecular levels; learning enhanced by case-based, small-group discussion and written assignment. Same as IMMU:6247.

**MICR:6250 Mechanisms of Parasitism** 1 s.h.
Reviews of recent publications in molecular parasitology research and thesis research by training grant or journal club students. Same as MCB:6250.

**MICR:6259 Graduate Pathogenic Bacteriology** 3 s.h.
Pathogenic bacteria with emphasis on mechanisms of pathogenicity, structure-function, and experimental design.

**MICR:6260 Graduate Microbial Physiology** 3 s.h.
Bacterial genomes, cell structure, growth, energy metabolism, biosynthesis, mechanisms of signal transduction and regulation.

**MICR:6267 Graduate Introduction to Animal Viruses** 3 s.h.
Physical, chemical, and biological properties of animal viruses with emphasis on their remarkable strategies for infection and replication and their association with human disease; focus on topics and techniques used in primary literature and development of specific aims for a mini-proposal.

**MICR:6268 Biology and Pathogenesis of Viruses** 2 s.h.
Molecular biology of animal DNA and RNA viruses, viral immunology and pathogenesis, and interaction of these viruses with eucaryotic cells; mechanisms of viral latency, persistence, cellular transformation, oncogenesis; virology literature. Prerequisites: MICR:3168 or MICR:6267.
MICR:6270 Graduate Microbial Genetics 3 s.h.
Genetics of bacteria, bacteriophages.

MICR:6279 Graduate Bacterial Diversity 3 s.h.
Physiological and biochemical basis of microbial diversity; focus on synthetic and systems biology with primary emphasis on roles of small regulatory RNAs and their affects on development of diverse microbial populations, including human microbiome; design and presentation of primary research abstracts.

MICR:7207 Advanced Topics in Immunology 3 s.h.
In-depth analysis of selected areas. Prerequisites: IMMU:6201 or MICR:6201. Same as IMMU:7221.

MICR:7217 Integrated Topics in Infectious Diseases 1 s.h.
Clinical cases used to raise questions in host-microbe interactions; case/scientific exposés followed by related journal club discussions at next class session. Same as IMMU:7217.

MICR:7221 Advanced Topics in Prokaryotic Biology Module 1 1-2 s.h.
Development of critical thinking, experimental approach and design, writing, and oral presentation skills through primary literature and course specific assignments (proposal writing, writing manuscript reviews, oral presentations, small group discussions). Requirements: graduate standing in microbiology.

MICR:7222 Advanced Topics in Prokaryotic Biology Module 2 1-2 s.h.
Development of critical thinking, experimental approach and design, writing, and oral presentation skills through exposure to primary literature and assignments (proposal writing, writing manuscript reviews, oral presentations, small group discussions). Requirements: graduate standing in microbiology.

MICR:7223 Advanced Topics in Prokaryotic Biology Module 3 1-2 s.h.
Development of critical thinking, experimental approach and design, writing, and oral presentation skills through exposure to selected topics in microbiology and assignments (proposal writing, writing manuscript reviews, oral presentations, small group discussions). Requirements: graduate standing in microbiology.

MICR:7224 Advanced Topics in Prokaryotic Biology Module 4 1-2 s.h.
Development of critical thinking, experimental approach and design, writing, and oral presentation skills through exposure to selected topics in microbiology and assignments (proposal writing, writing manuscript reviews, oral presentations, small group discussions). Requirements: graduate standing in microbiology.

MICR:7225 Advanced Topics in Prokaryotic Biology Module 5 1-2 s.h.
Development of critical thinking, experimental approach and design, writing, and oral presentation skills through exposure to selected topics in microbiology and assignments (proposal writing, writing manuscript reviews, oral presentations, small group discussions). Requirements: graduate standing in microbiology.

MICR:7226 Advanced Topics in Prokaryotic Biology Module 6 1-2 s.h.
Development of critical thinking, experimental approach and design, writing, and oral presentation skills through exposure to selected topics in microbiology and assignments (proposal writing, writing manuscript reviews, oral presentations, small group discussions). Requirements: graduate standing in microbiology.

MICR:7227 Advanced Topics in Microbiology 1 s.h.
Presentations by graduate students on selected research topics in microbiology; different topics each semester. Offered fall and spring semesters. Requirements: graduate standing in microbiology.

MICR:7261 Graduate Research in Microbiology arr.
Requirements: microbiology graduate standing.

MICR:7263 Graduate Student Research Seminar 1 s.h.
Presentation of thesis work in progress. Requirements: microbiology graduate standing.

MICR:7265 Topics in Virology Literature 1 s.h.
Papers of current interest in primary virology literature.

MICR:7269 Graduate Topics in Viral Biology and Pathogenesis 1 s.h.
Topics include viral life cycles, immune response, antiviral treatments, potential for vaccine, animal models; lectures introducing subject matter; discussion of literature relevant to each week's topic. Prerequisites: MICR:6267.

MICR:8202 Principles of Infectious Diseases 5 s.h.
Principles and methods essential to study of microorganisms, their isolation and identification; microorganisms in infectious diseases; current immunology concepts. Requirements: M.D. enrollment.

MICR:8230 Dental Microbiology 3 s.h.
Molecular Physiology and Biophysics

Chair
• Kevin P. Campbell

Executive associate chair
• W. Scott Moye-Rowley

Graduate degrees: M.S. in molecular physiology and biophysics; Ph.D. in molecular physiology and biophysics

Faculty: http://www.physiology.uiowa.edu/faculty.shtml

Web site: http://www.physiology.uiowa.edu/

The Department of Molecular Physiology and Biophysics offers graduate study leading to the Master of Science and Doctor of Philosophy degrees. It participates in interdisciplinary graduate programs, including the Medical Scientist Training (p. 1048) Program, a joint M.D./Ph.D. program offered by the Graduate College and the Carver College of Medicine, and it provides instruction in molecular physiology and biophysics for M.D., D.D.S., and other health professions students. The department also conducts a co-op exchange, a vigorous training program that gives undergraduate students the opportunity to develop as independent researchers in preparation for graduate studies.

The department’s principal research areas include cell biology, genetics, endocrinology, neuroscience, and membrane physiology and biophysics. The unifying theme is the understanding of signal transduction mechanisms involved in regulating function at the cellular and molecular levels.

Graduate Programs of Study
• Master of Science in molecular physiology and biophysics
• Doctor of Philosophy in molecular physiology and biophysics

Graduate study in molecular physiology and biophysics provides students with fundamental knowledge of life processes at molecular, cellular, and integrative levels of biological function. It also imparts knowledge of modern research skills applicable to contemporary problems.

Students may enter the graduate program through the direct admission pathway or the Medical Scientist Training Program (MSTP). Potential students are encouraged to directly contact individual faculty to discuss research possibilities or the appropriateness of these mechanisms to their individual circumstances.

Master of Science
The Master of Science program in molecular physiology and biophysics requires a minimum of 30 s.h. beyond the bachelor's degree and is offered with and without thesis. Thesis students complete laboratory research and write a thesis that fulfills the requirements of the Graduate College (see the Manual of Rules and Regulations of the Graduate College). Nonthesis students complete a library research report and take a written examination on the research report area and the graduate program in physiology.

University of Iowa research assistants may pursue an M.S. in molecular physics and biophysics while continuing to work in their research laboratories. Research assistants interested in the M.S. program must submit a letter of support from their supervisor.

Doctor of Philosophy
The Doctor of Philosophy program in molecular physiology and biophysics requires a minimum of 72 s.h. beyond the bachelor's degree. The core curriculum includes graduate-level courses in cell biology, molecular biology, human physiology, and neurophysiology. Advanced electives, offered by the Department of Molecular Physiology and Biophysics and other departments, cover a wide range of topics, including receptors and signal transduction, and developmental neurophysiology.

After successful completion of required course work and the comprehensive examination, students devote full time to thesis research, which culminates in preparation of a doctoral dissertation and its defense in a final oral exam.

Admission
Applicants must meet the admission requirements of the Graduate College; see the Manual of Rules and Regulations of the Graduate College. They must have a bachelor's degree from an accredited institution, with an undergraduate major in one of the biological, chemical, physical, mathematical, or engineering sciences; one or more years of course work in biology, physics, biochemistry, and calculus; and a cumulative science g.p.a. of at least 3.00. They also must submit acceptable verbal, quantitative, and analytical scores on the Graduate Record Examination (GRE) General Test.

With existing support of an identified faculty mentor, students also may apply for admission directly to the Department of Molecular Physiology and Biophysics. Because this program has no mechanism for performing research rotations, it is only appropriate for students who have identified a particular faculty member in the department willing and able to serve as their thesis advisor. Candidates for this mechanism typically have existing research experience with the faculty member who will be supporting them (through undergraduate research, summer research, work as a research associate, research collaborations, etc.).

To be considered, applicants must have a faculty member in the Department of Molecular Physiology and Biophysics write a letter to the director of graduate studies summarizing strengths for candidacy. The letter also must state the willingness of the faculty member to serve as the thesis advisor and acknowledge full financial responsibility for the student during the entirety of their graduate training. Applicants will subsequently be asked to submit official transcripts, GRE scores, and names of three references.

Students interested in a joint M.D. and Ph.D. degree from the University of Iowa typically start in the Medical Scientist Training Program. Admission is extremely competitive; please refer to MSTP for specific application requirements and deadlines.

Financial Support
All full-time students receive financial aid in the form of tuition and stipend support from the Department of
Molecular Physiology and Biophysics. Support is renewed annually based on satisfactory progress in meeting degree requirements.

Research

Faculty research interests in the Department of Molecular Physiology and Biophysics encompass molecular and cellular endocrinology, cellular and developmental neurophysiology, and membrane structure and function. Within these, there are multiple areas of interest, including hormone receptors, reproductive endocrinology, signal transduction, regulation of gene expression, synaptic transmission, neuronal differentiation, membrane ion channels, regulation of excitability, and cardiovascular electrophysiology and regulation. Experimental models currently being investigated include rodents, yeast, Drosophila, and cultured cell lines from a variety of species.

Facilities

Two floors of the Bowen Science Building are devoted to research and teaching in the Department of Molecular Physiology and Biophysics. Department faculty members also occupy laboratory facilities in the Medical Education Research Facility, Pappajohn Biomedical Discovery Building, and the Carver Biomedical Research Building. In addition to specialized equipment in faculty research laboratories, the department provides equipment for fluorescence microscopy, isotope analysis, cell culture, and molecular biology. It also has access to the University network and the multimedia education facilities. Additional resources are available at the Hardin Library for the Health Sciences.

Courses

**MPB:4199 Research, Independent Study**
Recommendations: closed to molecular physiology and biophysics graduate students.

**MPB:4753 Developmental Neurobiology**
Neural induction and nervous system patterning; neurogenesis, axon and dendrite outgrowth and targeting; synapse formation, specificity, refinement; mechanisms of neuronal cell death; myelination; neural stem cells; introduction to cellular, molecular, and genetic techniques in studies of neural development. Prerequisites: BIOL:2753. Corequisites: BIOL:3253. Requirements: grade of B- or higher in BIOL:2753 or graduate standing. Same as BIOL:4753.

**MPB:5153 Graduate Physiology**
Principles of human physiology, organ systems, cell function. Offered fall semesters. Requirements: grades of C- or higher in BIOL:1411 and CHEM:2210 and CHEM:2220, and graduate standing.

**MPB:5180 How the Brain Works**
Brief, integrated look at how the brain works, based on recent neuroscience research; how the brain’s biochemistry, anatomy, and physiology change constantly due to interaction with physical, emotional, and social environments; does the world we see around us exist outside the brain; does the mind exist; is emotion necessary for learning and memory; are we born with pre-existing circuits and codes in the brain for language, recognition of faces, and other complex behaviors; can aging of the brain be delayed; approach relevant for sciences, humanities.

**MPB:5200 Medical Physiology Online**
Fundamental principles of cellular membranes, muscle, sensory organs, motor neurological systems, autonomic nervous systems, cardiovascular, pulmonary, renal, gastrointestinal, endocrine, and reproductive systems; interdependence of organ systems to maintain a normal physiological state using clinical correlates as applied to humans; basic physiological principles that establish a solid foundation for future pathophysiological and pharmacological concepts. Recommendations: medical, dental, physician assistant, nurse anesthesia, physical therapy, or graduate standing.

**MPB:5211 Biophysics of Excitable Membranes**
Selected electrophysiological and biophysical topics from published research. Prerequisites: HHP:3500.

**MPB:5240 Physiology Workshop**
Presentations by faculty, postdoctoral fellows, graduate students, and scientists.

**MPB:5342 Biosciences Critical Thinking and Communication**
Selected papers and oral and written presentations tied to students' research rotations; introductory seminar. Same as BISC:5265, BIOL:5270.

**MPB:6209 Steroid Receptor Signaling**
Structure-function relationship and genomic and nongenomic actions of the steroid hormone receptor family; basis for actions of novel new ligands on these receptors. Offered spring semesters. Same as PCOL:6209, NSCI:6209.

**MPB:6220 Mechanisms of Cellular Organization**
Current understanding of basic cell biological processes; key experiments that led to guiding insights; mechanisms that cells use for compartmentalization and how those mechanisms are regulated; biogenesis of major organelles (e.g., mitochondria, peroxisomes, nucleus, secretory/endoctic membrane system); functions of cytoskeleton in cell motility, organelle motility, and cell division. Prerequisites: BIOC:3130. Same as MCB:6220, ACB:6220.

**MPB:6225 Growth Factor Receptor Signaling**
Mechanisms of signaling by growth factors; cytokines and related molecules that regulate cell proliferation, development, differentiation, and survival; emphasis on molecular mechanisms of signaling, relevance of these signaling processes to various human diseases. Recommendations: BISC:5201 and BISC:5203. Same as MCB:6225, ACB:6225.

MPB:6226 Cell Cycle Control 1 s.h.
Cell cycle regulation, DNA damage-dependent cell cycle regulation, redox-dependent cell cycle regulation, cellular senescence. Recommendations: BISC:5201 and BISC:5203. Same as MCB:6226, ACB:6226.

MPB:6227 Cell Fate Decisions 1 s.h.

MPB:6265 Neuroscience Seminar 0-1 s.h.
Research presentations. Offered fall and spring semesters. Same as PSY:6265, ACB:6265, NSCI:6265, BIOL:6265.

MPB:6302 Research Physiology and Biophysics arr.
Requirements: molecular physiology and biophysics graduate standing.

MPB:7402 Thesis arr.
Requirements: molecular physiology and biophysics Ph.D. candidacy.

MPB:8115 Human Physiology for Dental Students 4 s.h.
Principles of human physiology, organ systems, cell function. Offered fall semesters. Requirements: grades of C- or higher in BIOL:1411, CHEM:2210, and CHEM:2220; and D.D.S. enrollment.
Neurology

Chair
• George Richerson

Faculty: http://www.medicine.uiowa.edu/dept_primary_apr.aspx?appointment=Neurology
Web site: http://www.medicine.uiowa.edu/neurology/

Neurology is the branch of medical science concerned with diagnosis and management of disorders of the brain, spinal cord, peripheral nervous system, and muscle. The Department of Neurology's hallmark is its history of carefully integrating patient care, scientific investigation, and the education of medical, postdoctoral, and graduate students.

M.D. Student Training, Graduate Education

The department provides clinical and clinical research training to second-, third-, and fourth-year M.D. students. It also offers research opportunities in various fields of neuroscience, including neuropsychology, neuroimaging, and neuroanatomy, to Ph.D. students in neuroscience and psychology.

Residency Program

The Department of Neurology offers an active, four-year approved residency program that qualifies physician trainees for board certification in neurology. Experience in clinical electrophysiology, pediatric neurology, psychiatry, and neuropathology is part of this training.

Research

The faculty's investigative interests center on cognitive neuroscience, degenerative diseases, cerebrovascular disease, neurogenetics, neuromuscular diseases, electrophysiological correlates of central and peripheral nervous system disease, growth factors in the nervous system, control and regulation of autonomic functions, neuro-ophthalmology, movement disorders, epilepsy, and pain management. For more information see the Department of Neurology web site.

Courses

**NEUR:5365 Seminar: Neuropsychology and Neuroscience**

Clinical neuropsychology and cognitive neuroscience: cutting-edge research from scientific journals, case presentations in clinical neuropsychology, and current research. Same as PSY:5365, NSCI:5365.

**NEUR:6240 Topics in Cognitive Neuroscience**

1-3 s.h.

Key topics in the neural basis of human cognition; research literature. Recommendations: graduate courses in basic neuroscience and cognitive psychology. Same as NSCI:6240.

**NEUR:7238 Introduction to Neuropsychological Assessment**

arr.

Standard neuropsychological and behavioral assessment procedures; selection, administration, and scoring of neuropsychological tests under staff supervision; involvement in case presentation.

**NEUR:7239 Advanced Neuropsychological Assessment**

Continuation of NEUR:7238; preparation of integrated reports on collected data; case presentations.

**NEUR:8301 Clinical Neurology**

2,4 s.h.

Experience in clinical neurology through ward work and case-based conferences linked to required reading; focus on neurologic examination, diagnosis of neurologic problems.

**NEUR:8401 Advanced Inpatient Neurology**

2,4 s.h.

Experience and management of patients with seizure disorders, headache, cerebrovascular diseases; conferences, clinical rounds; two weeks on each inpatient service for a total of four weeks. Prerequisites: NEUR:8301.

**NEUR:8402 Advanced Outpatient Neurology**

2,4 s.h.

Experience in evaluation, management of patients with various neurologic diseases; four weeks in clinic patient care. Prerequisites: NEUR:8301.

**NEUR:8403 Cerebrovascular Disease**

arr.

Experience in evaluation, management of patients with cerebrovascular diseases; conferences, clinical rounds. Prerequisites: NEUR:8301.

**NEUR:8404 Neurology Subinternship**

4 s.h.

Care of patients with acute and serious neurological diseases, management of patients with varied cerebrovascular diseases; treatment of acute brain disease, comorbid medical diseases, medical and neurological complications that occur among patients with stroke; clinical assessments of patients, writing orders and clinical notes, contribution to rounds; close communication with patients, families, and colleagues; assignment to evening calls for emergency visits and consultations.

**NEUR:8498 Neurology On Campus**

arr.

**NEUR:8499 Neurology Off Campus**

arr.
Neurosurgery

Chair
• Matthew A. Howard III

Faculty: http://www.medicine.uiowa.edu/dept_primary_apr.aspx?appointment=Neurosurgery
Web site: http://www.medicine.uiowa.edu/neurosurgery/

The Department of Neurosurgery provides an experience oriented toward patient care and basic research concerning diseases and physiology of the nervous system. Students develop awareness of neurosurgery's role in treating head and spine trauma, vascular disorders, brain and spinal cord tumors, pain and peripheral nerve abnormalities, degenerative spine pathology, and surgical treatment of epilepsy and movement disorders.

Clinical courses are designed around patient-centered discussions interwoven with operating room experiences. Lectures and conferences are scheduled on specific topics.

M.D. Student Training

The department provides fourth-year M.D. students with access to special expertise in selected topics of investigation regarding the central nervous system and to a clinical course through special arrangements with the faculty.

Faculty

Neurosurgery faculty strengths are centered in physiology of spinal cord trauma, epilepsy, auditory brain function, and pain, primary brain tumor genetics, central nervous system tissue culture, spinal column biomechanics, and movement disorders. The department has expertise in clinical management across the spectrum of central nervous system diseases.

Facilities

Multiple, fully-equipped laboratory space is available to support scientific research of the central nervous system. Faculty and technical assistance is available in all laboratories.

Courses

Neurosurgery courses are open only to M.D. and qualified associated health sciences students.

NSG:8401 Subinternship in Neurosurgery 4 s.h.
Advanced clinical clerkship in neurological surgery; emphasis on diagnosis and operative management of surgical neurological disease.

NSG:8497 Research in Neurological Surgery arr.
Laboratory investigation of spinal cord injury, spinal column biomechanics and instrumentation, electrophysiology of pain, epilepsy and hearing, molecular genetics and physiology of brain tumors.

NSG:8499 Neurosurgery Off Campus arr.
Arranged by student with department approval.
Nuclear Medicine Technology

Director
  • Anthony W. Knight

Medical director
  • Michael M. Graham

Technical director
  • John A. Bricker

Undergraduate major: nuclear medicine technology (B.S.)
Web site: http://www.medicine.uiowa.edu/NMT/

Nuclear medicine technologists are professionals in a medical specialty that uses radioactive tracers for diagnostic, therapeutic, and research purposes. Technologists generally are employed in hospitals and clinics. They work hand-in-hand with nuclear medicine physicians, health physicists, radiopharmacists, and radiochemists as an integral part of a highly trained specialty team.

In addition to using sophisticated detectors and computers to trace the movement and localization of radioactive tracers in the human body, nuclear medicine technologists have responsibilities that include radiation safety, quality control testing, radiopharmaceutical preparation and administration, and general patient care.

The Nuclear Medicine Technology Program is fully accredited by the Joint Review Committee on Educational Programs in Nuclear Medical Technology (JRCNMT). Nuclear medicine technology is one of two undergraduate majors in the field of medical imaging offered by the Carver College of Medicine. Students interested in radiologic technology, computed tomography, magnetic resonance imaging, cardiovascular interventional, diagnostic medical sonography, or radiation therapy may complete the major in radiation sciences; see Radiation Sciences (p. 1092) in the Catalog.

The Carver College of Medicine is located on the University of Iowa health sciences campus, which includes University of Iowa Hospitals and Clinics, one of the nation's largest university-owned teaching hospitals. For information about the college's academic programs and resources, see Carver College of Medicine (p. 1005) in the Catalog.

Undergraduate Program of Study
  • Major in nuclear medicine technology (Bachelor of Science)

Undergraduate study in nuclear medicine technology is guided by the academic rules and procedures outlined under "Undergraduate Programs of Study" in the Carver College of Medicine (p. 1005) section of the Catalog.

Bachelor of Science

The Bachelor of Science with a major in nuclear medicine technology requires a minimum of 120 s.h. of credit. Work for the degree includes a set of courses that are prerequisite to entering the major, 60 s.h. of course work in the major, and elective course work sufficient to complete the minimum of 120 s.h. required for graduation.

Students who plan to complete all requirements for the degree at the University of Iowa enter the University as students in the College of Liberal Arts and Sciences (CLAS) with a nuclear medicine technology interest. As CLAS students, they complete the course work that is prerequisite to entering the major.

Admission to the major is competitive; the program accepts a maximum of 8 students per year. Students must apply to the major by January 15 of the year in which they wish to enter it. Personal interviews with qualified applicants are scheduled in February, and the class is selected by March 15. The program begins the following fall semester and lasts two years.

Students who are admitted to the major become Carver College of Medicine students. Upon completing the program successfully, they are granted a Bachelor of Science degree. Graduates are eligible for national certification as nuclear medicine technologists.

The program strongly advises students entering the University to pursue a course of study that is applicable to another major, most commonly biology, chemistry, biochemistry, or microbiology, so that if they are not admitted to the Nuclear Medicine Technology Program, they still may complete a major and receive a bachelor's degree.

The Bachelor of Science with a major in nuclear medicine technology requires the following work.

PREREQUISITES TO THE NUCLEAR MEDICINE TECHNOLOGY MAJOR

Students must complete the following prerequisite courses and must have earned 60 s.h. of college credit with a cumulative g.p.a. of at least 2.50 before they may enter the nuclear medicine technology major. In addition to providing a foundation for the major, the prerequisite courses are good preparation for other majors.

Rhetoric:
  RHET:1030 Rhetoric 4 s.h.

Culture, society, and the arts—3 s.h. in each of two of these (total of 6 s.h.):

Historical Perspectives approved course work 3 s.h.
International and Global Issues approved course work 3 s.h.
Literary, Visual, and Performing Arts approved course work 3 s.h.
Values, Society, and Diversity approved course work 3 s.h.

See General Education Program (p. 313) (College of Liberal Arts and Sciences) in the Catalog for approved courses in the culture, society, and the arts areas.

Mathematics—one of these:
  MATH:1020 Elementary Functions 4 s.h.
  MATH:1440 Mathematics for the Biological Sciences 4 s.h.
A more advanced mathematics course

Introductory chemistry with laboratory:
  CHEM:1110 Principles of Chemistry I 4 s.h.

Introductory physics—one of these:
  PHYS:1400 Basic Physics 3 s.h.
  PHYS:1511 College Physics I 4 s.h.
Psychology:

PSY:1001 Elementary Psychology 3 s.h.

Medical terminology:

CLSA:3750 Medical and Technical Terminology 2 s.h.

Anatomy and physiology—students must complete one of the three options below.

Option 1 (one course, 4 s.h.):

ACB:1199 Human Anatomy and Basic Physiology for Radiation Science 4 s.h.

Option 2 (two courses, 6-7 s.h.)—one of these:

ACB:3110 Principles of Human Anatomy 3 s.h.
ACB:3113 Human Anatomy Online 4 s.h.

And one of these:

HHP:1300 Fundamentals of Human Physiology 3 s.h.
HHP:3500 Human Physiology 3 s.h.

Option 3 (three courses, 7 s.h.)—both of these:

HHP:1100 Human Anatomy 3 s.h.
HHP:1110 Human Anatomy Laboratory 1 s.h.

And one of these:

HHP:1300 Fundamentals of Human Physiology 3 s.h.
HHP:3500 Human Physiology 3 s.h.

RECOMMENDED PRE-MAJOR COURSES

The Nuclear Medicine Technology Program strongly recommends that students who intend to apply to the major take the following course work in addition to the required prerequisite courses listed above.

Both of these:

CHEM:1120 Principles of Chemistry II 4 s.h.
RSP:1100 Introduction to the Radiation Sciences 1 s.h.

One of these:

BIOL:1140 Human Biology 4 s.h.
BIOL:1411 Foundations of Biology 4 s.h.

One of these:

STAT:1020 Elementary Statistics and Inference 3 s.h.
STAT:3510 Biostatistics 3 s.h.
STAT:4143 Introduction to Statistical Methods 3 s.h.

One of these:

CS:1020 Principles of Computing 3 s.h.
CS:1110 Introduction to Computer Science 3 s.h.

Prospective students are encouraged to consult the Nuclear Medicine Technology Program office to plan an appropriate pre-major program of study.

COURSE WORK IN THE MAJOR

Students admitted to the nuclear medicine technology major spend two years in a clinical curriculum that is organized in accordance with the JRCNMT Essentials of an Accredited Educational Program in Nuclear Medicine Technology. They complete course work in the following areas: radiopharmacy, radiation safety and radiobiology, patient care, nuclear medicine and positron emission tomography (PET) procedures, radiation physics and instrumentation, administration and management, medical and professional ethics, research methodology, and computed tomography (CT). Practical clinical rotations focus on nuclear medicine, PET and CT imaging, nuclear medicine therapy, clinical radiopharmacy, nuclear medicine computer applications, and quantification of radioactivity in vivo and in vitro.

Courses

RSNM:3120 Fundamentals of Nuclear Medicine and PET 6 s.h.
Introduction to medical specialty of nuclear medicine and molecular imaging; basic theories of radiation protection, radiation physics and nuclear medicine instrumentation, radiopharmacy, nuclear medicine and positron emission tomography (PET) clinical procedures, professional standards of nuclear medicine technologist. Requirements: Nuclear Medicine Technology Program enrollment.

RSNM:3121 Nuclear Medicine Technology Clinical Internship I 3 s.h.
Hands-on clinical experience working with patients and performing routine nuclear medicine diagnostic imaging procedures under direct supervision of qualified clinical instructors. Requirements: Nuclear Medicine Technology Program enrollment.

RSNM:3131 Radiopharmaceuticals 3 s.h.
Introduction to radiopharmaceuticals; emphasis on physical, chemical, and biologic properties and their clinical use; fundamental aspects of radiopharmaceuticals including characteristics, preparation, quality control, and clinical use. Requirements: Nuclear Medicine Technology Program enrollment.

RSNM:3195 Health Informatics I 3 s.h.
Technological tools that support health care administration, management, and decision making. Requirements: graduate standing. Same as MED:5300, SLIS:5900, HMP:5370, IE:5860, IGPI:5200.

RSNM:3220 Nuclear Medicine and PET Clinical Procedures 3 s.h.
Proper execution of nuclear medicine and PET procedures from a technical point of view; published protocols and procedures specific to the University of Iowa Hospitals and Clinics; routine set up, common errors, artifact identification, computer processing protocols, and patient care concerns identified for each procedure; review of human anatomy, physiology, and pathology germane to understanding and proper execution of nuclear medicine procedures. Requirements: Nuclear Medicine Technology Program enrollment.

RSNM:3221 Nuclear Medicine Technology Clinical Internship II 3 s.h.
Progressive responsibility working with patients and performing nuclear medicine and PET clinical procedures under direct supervision of qualified clinical instructors. Requirements: Nuclear Medicine Technology Program enrollment.
**RSNM:3231 Nuclear Medicine Instrumentation**  
3 s.h.  
Instruments used in medical imaging to generate and detect ionizing radiation (i.e., SPECT/CT and PET/CT scanners, dose calibrators, well counters, survey meters); focus on instrument quality control testing. Requirements: Nuclear Medicine Technology Program enrollment.

**RSNM:3321 Nuclear Medicine Technology Clinical Internship III**  
6 s.h.  
Progressive responsibility working with patients and performing nuclear medicine and PET clinical procedures under direct supervision of qualified clinical instructors. Requirements: Nuclear Medicine Technology Program enrollment.

**RSNM:4121 Nuclear Medicine Technology Clinical Internship IV**  
4 s.h.  
Progressive responsibility working with patients and performing nuclear medicine and PET clinical procedures under direct supervision of qualified clinical instructors. Requirements: Nuclear Medicine Technology Program enrollment.

**RSNM:4221 Nuclear Medicine Technology Clinical Internship V**  
4 s.h.  
Progressive responsibility working with patients and performing nuclear medicine and PET clinical procedures under direct supervision of qualified clinical instructors. Requirements: Nuclear Medicine Technology Program enrollment.

**RSNM:4222 NMT Capstone and Certification Exam Preparation**  
6 s.h.  
Students in final semester of program work together to organize and deliver capstone and certification exam preparation course; review of specific topics and oral presentations by each student; preparation and distribution of detailed written outlines of exam content; series of content-specific quizzes, midterm, and final "Mock Board" exam to evaluate student learning and preparedness for taking the NMTCB and ARRT national certification exams; preparation and submission of capstone portfolios that provide evidence of scholarly and professional progress. Requirements: Nuclear Medicine Technology Program enrollment.

**RSNM:5301 Health Informatics II**  
3 s.h.  
Selected health informatics initiatives, including computer-based patient records, physiologic monitoring, networking, imaging, virtual reality; participation in an interdisciplinary project team focused on an informatics innovation; application and research seminars. Same as BME:5252, IE:5870, IGPI:5210.
Obstetrics and Gynecology

Chair
• Kimberly Leslie

Faculty: https://www.medicine.uiowa.edu/obgyn/welcome/
Web site: https://www.medicine.uiowa.edu/obgyn/

M.D. Student Training

Courses in the Department of Obstetrics and Gynecology are designed to give M.D. students a comprehensive survey of reproductive medicine. This is accomplished through a series of didactic lectures, inpatient and outpatient assignments, ward rounds, teaching seminars, and special elective courses.

The third-year clerkship OBG:8301 Clinical Obstetrics and Gynecology gives students the core knowledge, skills, and attitudes needed to provide primary health care to female patients.

The department offers fourth-year medical students a variety of electives that provide advanced training in the special areas of obstetrics and gynecology. In addition to clerkships at University of Iowa Hospitals and Clinics, these electives include arranged off-campus courses.

Residency Program

The department offers a four-year residency. Upon completion, graduates are eligible for the written and oral examinations leading to certification by the American Board of Obstetrics and Gynecology.

Residents are assigned to the divisions and clinical services of the department; they care for both hospital inpatients and outpatients. Training is provided in normal and abnormal obstetrics, gynecologic surgery, office gynecology, ultrasound, reproductive endocrinology, gynecologic oncology, urogynecology, family planning, and endoscopic procedures.

Courses

OBG:8301 Clinical Obstetrics and Gynecology
Proficiency in evaluation and management of core women's health care relating to the reproductive tract; special history taking, physical examination, laboratory and imaging assessment of obstetric and/or gynecological patients, application of current concepts to well women's health care and to management of diseases and pathologies; outpatient and inpatient obstetrics and gynecology; family planning, screening and early detection of cancer and other diseases.

OBG:8401 High Risk Antepartum Obstetrics Subinternship
Experience in evaluating new patients in a high-risk obstetric clinic; continuing antepartum care; doing work-up, ordering diagnostic studies, and following course of complicated patients admitted to obstetric ward; assisting in diagnostic, therapeutic procedures such as fetal heart rate testing, amniocentesis, ultrasonography, intrauterine fetal transfusion.

OBG:8402 Gynecologic Oncology Subinternship
Experience on a gynecologic oncology service, including operating room, inpatient and outpatient care; team management approach to gynecologic cancer patients, treatment and follow-up of invasive gynecologic malignancies, etiology and risk factors for gynecologic neoplasias, pre- and postoperative evaluation and treatment of surgical management of gynecologic neoplasia; research project encouraged.

OBG:8403 Reproductive Endocrinology Senior Elective
Experience evaluating new and returning patients in the Reproductive Endocrinology and Infertility Clinic; participation in preoperative, operative, and inpatient postoperative care; advanced gynecologic ultrasonography, in vitro fertilization services.

OBG:8405 Urogynecology Advanced Elective
Experience on a gynecologic oncology service, including operating room, inpatient and outpatient care; team management approach to gynecologic cancer patients, treatment and follow-up of invasive gynecologic malignancies, etiology and risk factors for gynecologic neoplasias, pre- and postoperative evaluation and treatment of surgical management of gynecologic neoplasia; research project encouraged.

OBG:8406 Community-Based Ob/Gyn, Washington
Varied out-patient and in-patient obstetric and gynecologic patients in the Washington County Hospital and Clinic; perform and master OB/GYN histories and examinations; frequent supervised active participation of procedures where appropriate.

OBG:8407 Family Planning
Participation as active member of the Family Planning Services team; clinical activities, including clinic and outpatient procedures. Requirements: M.D. enrollment.

OBG:8408 Non-Interventional Birth Elective
Experience with normal physiologic birth; participation in intrapartum and postpartum care of low-risk women. Requirements: M.D. enrollment.

OBG:8450 Continuity of Care in Outpatient Gynecology
M4 students work with experienced gynecologist in longitudinal clinical experience for the academic year; students paired with faculty member to see patients in weekly clinic and provide clinical care to defined patient population.

OBG:8498 Ob/Gyn On Campus

OBG:8499 Ob/Gyn Off Campus
Ophthalmology and Visual Sciences

Chair

- Keith D. Carter

Professional certificate: orthoptics

Faculty: http://www.medicine.uiowa.edu/eye/people/

Web site: http://www.medicine.uiowa.edu/eye/

Ophthalmology is a medical and surgical specialty concerned with the diagnosis and treatment of diseases of the eye and its adnexa. The Department of Ophthalmology and Visual Sciences combines postgraduate training with research and patient care in all aspects of the visual sciences. Subspecialties represented in the department include cataract surgery, comprehensive ophthalmology, cornea and external diseases, contact lens and refraction services, genetics and molecular biology, glaucoma, laser refractive surgery, neuro-ophthalmology, oculoplastic surgery, ocular echography, ocular pathology, ocular vascular diseases, optometric services, pediatric ophthalmology and adult strabismus, vitreoretinal disorders, and vision rehabilitation.

M.D. Student Training, Graduate Education

The department offers clinical and research training to M.D. students and limited graduate studies for Ph.D. students in Anatomy and Cell Biology (p. 1015), Molecular and Cellular Biology (p. 953), and Genetics (p. 936). A three-year residency program with clinical experience in the ophthalmic subspecialties is offered to physician trainees. Graduates qualify for the written and oral examinations leading to certification by the American Board of Ophthalmology. Postgraduate fellowships of one to two years are available for qualified ophthalmologists in most subspecialty areas.

Professional Program of Study

- Certificate in Orthoptics

The first four to six weeks are spent reviewing general anatomy and physiology, and learning the basic anatomy, physiology, and terminology of the eye. Students are initially introduced to patient examination by observation of physicians and orthoptists, and gradually increase their exam skills as each new technique is learned. Over the first six months anatomy, physiology, optics, and principles of strabismus and amblyopia are taught in depth.

In the second six months of training, students expand their knowledge of basic orthoptic and ophthalmologic principles and apply them to a more complete patient examination and diagnostic skills. The remaining months are spent examining patients in clinic, mastering examination techniques and differential diagnosis as well as becoming proficient in the interpretation of diagnostic tests.

Time each week is reserved for orthoptic lectures and examinations. Students are expected to complete a research project and give presentations during the training period.

Contact the Department of Ophthalmology and Visual Sciences for information about the professional Certificate in Orthoptics.

Continuing Education

The department sponsors clinical conferences open to community ophthalmologists in Iowa and surrounding states where physicians can earn continuing medical education credits. The department also sponsors an annual alumni meeting with participation by nationally and internationally recognized ophthalmologists and vision scientists.

Facilities

The department maintains research laboratories for cell biology, biochemistry, morphology, tumor diagnosis, pathology, electrophysiology, pupillography, molecular biology, and vascular disease. Clinical facilities in ophthalmology are available at University of Iowa Hospitals and Clinics in the Pomerantz Family Pavilion and at the Iowa City Veterans Affairs Medical Center and the Veterans Affairs Central Iowa Health Care System in Des Moines. The department also manages an eye clinic at the Broadlawns Medical Center in Des Moines as well as outreach programs in other communities. The John and Marcia Carver Nonprofit Genetic Testing Laboratory, dedicated to providing affordable testing for rare eye diseases, is associated with the department.

Courses

**OPHT:8301 Clinical Ophthalmology** 2,4 s.h.
All aspects of clinical ophthalmology; patient rounds, lectures, case presentations; clinical duties with staff, residents, faculty in UIHC and VAMC ophthalmology clinics. Requirements: M.D. enrollment.

**OPHT:8401 Elective in External Eye Disease** 4 s.h.
Common diseases of eyelid, conjunctiva, cornea.

Visual, ocular motor dysfunction due to neurologic disease; patient work-up, readings, neuro-ophthalmology rounds.

**OPHT:8403 Molecular Ophthalmology** arr.
Use of recombinant DNA, tissue culture, protein electrophoresis in study of inherited eye diseases.

**OPHT:8404 Elective in Ocular Pathology** 4 s.h.
Pathophysiology of eye disease; emphasis on use of Socratic method, self-study.

**OPHT:8498 Ophthalmology On Campus** arr.

**OPHT:8499 Ophthalmology Off Campus** arr.
Orthopaedics and Rehabilitation

Chair

- J. Lawrence Marsh

Faculty: http://www.uiortho.com/index.php/faculty-listing/specialty-listing
Web site: http://uiortho.com/

The Department of Orthopaedics and Rehabilitation offers training for residents and provides education for undergraduate students.

Undergraduate Education

The Department of Orthopaedics and Rehabilitation participates in the Bachelor of Science with a major in athletic training, which is offered by the Department of Health and Human Physiology (p. 349) (College of Liberal Arts and Sciences). Members of the orthopaedics and rehabilitation sports medicine faculty teach ORTH:4187 Practicum in Athletic Training IV, a two-semester advanced clinical sequence (8 s.h.). Students who complete the program are eligible to apply for national certification in athletic training and to pursue employment opportunities as health care professionals in sports medicine clinics, hospitals, and academic settings.

Residency Program

The department offers a five-year integrated clinical program for postgraduate trainees, in which interns and residents participate simultaneously in inpatient and outpatient care, surgery, and sciences related to the neuromusculoskeletal system.

Trainees enter this program directly from medical school through the National Residency Matching Program.

During the first year, trainees gain experience not only in clinical orthopaedics but also in surgical specialties, intensive care, radiology, and surgical skills.

During years two through five, residents gain experience in the diagnosis and management of adult and pediatric orthopaedic disorders, including joint reconstruction; trauma, including multisystem trauma; surgery of the spine, including disk surgery, spinal trauma and deformities; hand and foot surgeries; athletic injuries and orthopaedic rehabilitation; orthopaedic oncology, including metastatic disease; and amputations as well as post-amputation care and nonoperative outpatient diagnosis and care, including all orthopaedic anatomic areas.

Laboratories

The orthopaedics laboratories deal with problems in these major subject areas.

Biochemistry: the biochemistry of proteoglycans, collagens, and matrix proteins, both normal and altered in musculoskeletal disorders

Biomechanics: problems of the upper extremity; biomechanics of the spine, hip, and gait; total joint replacements (in conjunction with the College of Engineering (p. 831))

Cell and molecular biology: studies of normal bone, cartilage, tendon, muscle, and tissues altered by experiment and disease

Bone healing: research toward better ways to heal bones

Facilities

The Department of Orthopaedics and Rehabilitation is housed in the John Pappajohn Pavilion of University of Iowa Hospitals and Clinics and has an active service in the Iowa City Veterans Affairs Medical Center. The department's facilities include 48 orthopaedic beds, ten outpatient clinics, inpatient and outpatient operating rooms, a specialty library, a specialty radiology unit, and physical therapy and rehabilitation facilities. Its specialty clinics deal with virtually every orthopaedic disorder known, including, but not limited to scoliosis, club feet, congenital dislocated hip, neuromuscular disease, metabolic disease, amputation, neoplasm, trauma, and neck, back, hip, foot, knee, and hand problems. Physicians in the outpatient clinic see approximately 280 patients per day, over 70,000 patients per year. Approximately 7,000 surgeries are performed each year.

The department's Institute for Orthopaedics, Sports Medicine, and Rehabilitation is located on the University of Iowa's Hawkeye Campus. The institute provides MRI, X-ray, and physical therapy services, and a full range of nonoperative orthopaedic ambulatory care services.

Courses

ORTH:4187 Practicum in Athletic Training IV 4 s.h.
Clinical experience arranged through the athletic training program and the Department of Orthopaedic Surgery for athletic training majors; development of global proficiency in clinical skills. Requirements: athletic training major, and grades of C or higher in ATEP:3030 and ATEP:3040.

ORTH:8301 Clinical Orthopaedics arr.
ORTH:8401 Advanced Clinical Orthopaedics 2,4 s.h.
Requirements: fourth-year M.D. enrollment.
ORTH:8402 Musculoskeletal Trauma arr.
Requirements: fourth-year M.D. enrollment.
ORTH:8403 Subinternship in Orthopaedics 4 s.h.
Opportunity to enhance clinical skills by taking intern-level responsibility for management of a limited number of orthopaedic patients; proficiency in perioperative patient assessment and management, including assisting in procedures and using laboratory diagnosis and radiologic studies pertinent to one faculty member's clinical practice.
ORTH:8404 Introduction to Physical Medicine and Rehabilitation 2 s.h.
Management of a wide range of common acute and chronic neuro-musculoskeletal pain conditions (shoulder, back, knee pain) to more devastating neuromuscular injuries (spinal cord injuries, brain injury, strokes, amputations). Requirements: M.D. enrollment.
ORTH:8405 Advanced Physical Medicine and Rehabilitation 4 s.h.
Management of a wide range of common acute and chronic neuro-musculoskeletal pain conditions (shoulder, back, or knee pain) to more devastating neuromuscular injuries (spinal cord injuries, brain injury, strokes, amputations); students work-up individual patients in outpatient clinics and perform inpatient consultations at subintern level. Prerequisites: ORTH:8404. Requirements: M.D. enrollment.

**ORTH:8498 Orthopaedics On Campus**
arr.
Requirements: fourth-year M.D. enrollment.

**ORTH:8499 Orthopaedics Off Campus**
arr.
Requirements: fourth-year M.D. enrollment.
Otolaryngology—Head and Neck Surgery

Head
Bruce J. Gantz

Faculty: [Link to website]
Web site: [Link to website]

The Department of Otolaryngology—Head and Neck Surgery is one of the most comprehensive otolaryngology departments in the world. Founded in 1922, it is among the oldest in the United States. U.S. News & World Report has consistently ranked the department's program among the top 10 in the nation.

The department's chief focus areas are education and training, patient care, and research. M.D. students in the Carver College of Medicine, residents, and fellows benefit from a faculty dedicated to providing thorough training in all aspects of otolaryngology and patient care. Patients in the otolaryngology clinic enjoy access to comprehensive care in any of five subspecialties: pediatric otolaryngology, otology/neurotology, general otolaryngology and rhinology, head and neck oncology, and facial plastic and reconstructive surgery. University of Iowa faculty members from ophthalmology and radiation oncology hold joint appointments in otolaryngology, adding depth to the department's resources.

The department is home to prominent research programs in cleft palate and other craniofacial defects, head and neck oncology, cochlear implants, and molecular genetics. It also offers fellowships in otology/neurotology, pediatric otolaryngology, and head and neck oncology.

The department is located at University of Iowa Hospitals and Clinics.

Residency Program

The Department of Otolaryngology—Head and Neck Surgery offers a residency program accredited by the Accreditation Council for Graduate Medical Education. The program has two tracks: a five-year clinical track and a seven-year research track. Five applicants are accepted each year, three to the clinical track and two to the research track.

The clinical track provides five years of concentrated clinical study and application in all aspects of otolaryngology. Residents begin their training with a five-week intensive basic science course divided into an anatomy component and a 100-hour lecture series. The anatomy component includes a supervised cadaver dissection, and the lecture series details the study of otolaryngology and related disciplines. Each resident also completes two research rotations in order to explore research areas that interest him or her.

The research track is a combined clinical-research program designed for residents interested in an otolaryngology research career. After an internship year, residents complete two years of research followed by four years of clinical training. The interaction of clinicians and basic scientists from several departments affords residents the opportunity for involvement in a wide spectrum of current research in areas such as electrophysiology of the auditory system, the genetics of head and neck cancer, and gene therapy.

Fellowships

The Department of Otolaryngology—Head and Neck Surgery offers two one-year fellowships in head and neck oncology and in pediatric otolaryngology, which are accredited by the Accreditation Council for Graduate Medical Education. It also offers a two-year fellowship in otology/neurotology accredited by the Advanced Training Council of the American Head and Neck Society.

The otology/neurotology fellowship program accepts one applicant every two years. Otology fellows spend a minimum of 20 months in clinical service. They attend all otology/neurotology clinics and neurotology cases in the operating room and are responsible for inpatient service. They also have one day of dedicated research time each week.

The head and neck surgery fellowship program accepts one applicant each year. Fellows spend a year in clinical service, where they have the opportunity to train with all pediatric otolaryngology faculty members.

One applicant is accepted as a head and neck oncology fellow each year. Training is largely clinical, allowing fellows the opportunity to participate in a variety of procedures, ranging from skull base resection to laryngeal rehabilitation. Fellows routinely perform 35 to 45 free-tissue transfers during one year of training. They also complete a clinical and/or basic science research project relating to head and neck oncology.

Courses

OTO:8199 Basic Otolaryngologic Science
Supervised cadaver head and neck dissection, with 14 areas in detail. Two weeks.

OTO:8301 Clinical Otolaryngology
2 s.h.

OTO:8401 Sub-Internship in Otolaryngology
arr.

OTO:8498 Otolaryngology On Campus
arr.

OTO:8499 Otolaryngology Off Campus
Arranged by student with department approval.
Pathology

Chair
• Nitin J. Karandikar

Director, clinical functions
• Roseanne Meyer

Graduate degree: M.S. in pathology
Faculty: http://www.medicine.uiowa.edu/dept_primary_apr.aspx?appointment=Pathology
Web site: http://www.medicine.uiowa.edu/pathology/

The Department of Pathology offers education and training for a broad range of students, from undergraduates through postgraduate fellows and researchers. It provides basic pathology courses to health sciences students; a clinical training program for clinical laboratory scientists; a Master of Science program in pathology; residency training programs leading to American Board of Pathology certification in anatomic pathology and clinical pathology; fellowship training in pathology subspecialties; and postdoctoral research training in cellular and molecular pathology.

Undergraduate Education

Pathology courses are a major component of the University’s Medical Laboratory Science Program, a Bachelor of Science program that trains medical laboratory scientists; see Medical Laboratory Science (p. 1046) in the Catalog.

M.D. Student Training

The department provides five to seven 12-month fellowships for M.D. students (pathology externship), for students interested in careers as pathologists, and the Emory Warner Fellowship, a full-time research position in a facet of experimental pathology. It also offers clerkships for M.D. students in all areas of anatomical and clinical pathology.

Residency Program

The department offers 20 residency positions in pathology, which provide up to four years of training. Patients at University of Iowa Hospitals and Clinics and the Iowa City Veterans Affairs Medical Center are integral to the residency programs.

Residents gain experience in systematic rotation through the varied laboratory services, including surgical pathology, autopsy pathology, neuropathology, dermatopathology, cytology, clinical chemistry, clinical microbiology, hematology, immunopathology, molecular pathology, and transfusion medicine. They also have the opportunity to pursue one or two years of additional fellowship training in many pathology subspecialties. To learn more, see Education on the Department of Pathology web site.

Graduate Program of Study

• Master of Science in pathology

Master of Science

The Master of Science program in pathology requires a minimum of 30 s.h. of graduate credit, including 21 s.h. of classroom work and 9 s.h. earned for research. The program trains graduate students in cell and molecular biology. Graduates work as research scientists in a range of academic and commercial laboratories, including those in the rapidly expanding biotechnology sector. Others advance to doctoral-level study.

M.S. students pursue a core curriculum in cell and molecular biology as well as electives suited to their individual interests. They acquire contemporary research skills by pursuing a laboratory thesis project under the guidance of a faculty member. Currently, there are active research programs in immunology, microbiology, neuroscience, signaling and apoptosis, inflammation and vascular biology, tumor biology and cancer, and virology.

Most M.S. students complete their course of study in three years.

The department encourages applicants who have earned a Bachelor of Science with a major in biology, chemistry, biochemistry, clinical laboratory science, microbiology, or zoology. Applicants must meet the admission requirements of the Graduate College; see the Manual of Rules and Regulations of the Graduate College. They should have an undergraduate g.p.a. of at least 3.00 and a combined verbal and quantitative score of at least 1100 on the Graduate Record Exam (GRE) General test.

For more information about graduate study, see Education on the Department of Pathology web site.

Postgraduate Training

The Department of Pathology offers postgraduate clinical fellowship programs in hematopathology, transfusion medicine, clinical microbiology, cytopathology, molecular genetics pathology, and surgical pathology for physicians who have completed residency training in pathology. These fellowships consist of one to two years of diagnostic work and research.

The department provides postdoctoral research training in immunology, neuropathology, apoptosis, cancer biology, and clinical microbiology as well as in other areas of cellular and molecular pathology. These positions are open to individuals who have earned a Ph.D. or an M.D.

Facilities

The Department of Pathology is well-equipped to carry out the sophisticated technology of modern cellular and molecular pathology. It administers more than 90,000 square feet of clinical laboratories at University of Iowa Hospitals and Clinics and has individual research and core facility laboratories, including histopathology and laser capture microscopy for cellular and molecular pathology research, in the Medical Research Center, Medical Laboratories, and at the Iowa City Veterans Affairs Medical Center. Also available are Carver College of Medicine research facilities for nucleic acid chemistry, hybridoma production, flow cytometry, ultrastructural studies, protein structure, image analysis, electron spin resonance, mass spectroscopy, nuclear magnetic resonance, and laboratory animal care.
Courses

PATH:4150 Advanced Laboratory Practice 0,2,6 s.h.
Advanced laboratory practical skills. Requirements: acceptance to Clinical Laboratory Science Program.

PATH:4151 MLS Program Registration 0 s.h.
Requirements: admission to Medical Laboratory Science Program.

PATH:4152 MLS Theory, Application, and Correlation
Theory, application, and correlation of medical laboratory science. Prerequisites: PATH:4150.

PATH:4154 Clinical Chemistry I 0,3 s.h.
Theory, practical application, technical performance, and evaluation of clinical chemistry laboratory procedures; correlation of laboratory data with diagnosis of disease. Prerequisites: PATH:4150.

PATH:4155 Clinical Chemistry II 0,3 s.h.
Advanced theory, practical application, technical performance, and evaluation of clinical chemistry laboratory procedures; correlation of laboratory data with diagnosis of disease. Prerequisites: PATH:4154.

PATH:4156 Clinical Hematology I 0,4 s.h.
Introduction to theory, practical application, technical performance, and evaluation of hematological and hemostasis procedures; correlation of laboratory data with disease diagnosis. Prerequisites: PATH:4150.

PATH:4157 Clinical Hematology II 0,3 s.h.
Advanced theory, practical application, technical performance, and evaluation of hematological and hemostasis procedures; correlation of laboratory data with disease diagnosis. Prerequisites: PATH:4156.

PATH:4158 Clinical Microbiology I 0,4 s.h.
Introduction to theory, practical application, technical performance, and evaluation of procedures for isolation, identification, and susceptibility testing of infectious disease organisms in humans. Prerequisites: PATH:4150.

PATH:4159 Clinical Microbiology II 0,3 s.h.
Advanced theory, practical application, technical performance, and evaluation of procedures for isolation, identification, and susceptibility testing of infectious disease organisms in humans. Prerequisites: PATH:4158.

PATH:4160 Clinical Immunology 0-1 s.h.
Theory, application, and evaluation of immunological components, principles, and methodologies used to assess immune dysfunction; theory and application of molecular diagnostic tools. Prerequisites: PATH:4150.

PATH:4162 Clinical Immunohematology I 0,3 s.h.
Introduction to theory, practical application, technical performance, and evaluation of blood bank procedures required for storage and transfusion of blood and blood components. Prerequisites: PATH:4150.

PATH:4163 Clinical Immunohematology II 0,3 s.h.
Clinical immunohematology for laboratory science. Prerequisites: PATH:4162.

PATH:4164 Phlebotomy for Clinical Laboratory Science 0-1 s.h.
Theory, practical application, technical performance, and evaluation of procedures used in collecting, handling, and processing blood specimens. Prerequisites: PATH:4150.

PATH:4166 Urine and Body Fluid Analysis 0-1 s.h.
Theory, practical application, technical performance, and evaluation of procedures used in analyzing urine and other body fluids, including cerebrospinal, synovial, serous, and amniotic fluids. Prerequisites: PATH:4150.

PATH:4170 Clinical Laboratory Management I 0,2 s.h.
Theory, practical application, technical performance, and evaluation of laboratory management principles and associated models; critical thinking, problem solving, leadership skills. Prerequisites: PATH:4150.

PATH:4171 Clinical Laboratory Management II 0,2,3 s.h.
Advanced theory, application, technical performance, and evaluation of laboratory management principles and associated models; critical thinking, problem solving, leadership skills. Prerequisites: PATH:4170.

PATH:4172 Molecular Biology Methods 0-1 s.h.
Introduction to theory, practical application, and evaluation of molecular biology methods.

PATH:5260 Translational Histopathology 3 s.h.
Didactic sessions on human comparative histology, molecular and cellular pathology, and animal model applications; laboratory sessions on microscopy, histology, histotechnology, and immunohistochemistry, with group discussions of model papers; experience in scientific writing and oral presentation skills; for students who plan to investigate experimental models of human disease. Prerequisites: BISC:5201 and BISC:5203.

PATH:5270 Pathogenesis of Major Human Diseases 3 s.h.
Critical analysis of pathogenesis models in a series of major human diseases; clinical presentation, analysis of cellular and molecular events leading to the disease, discussion of key papers. Offered spring semesters of even years. Prerequisites: BISC:5201 and BISC:5203.

PATH:6220 Seminar in Pathology 1 s.h.
Current research and literature. Requirements: pathology graduate standing.

PATH:7001 Molecular and Cellular Biology of Cancer 3 s.h.
Fundamental aspects of oncology at the cellular and molecular levels; mechanisms of cancer initiation and progression, oncogene action, DNA damage and repair, carcinogenesis by radiation, chemicals, viruses; tumor immunology, anticancer therapies. Offered spring semesters of odd years. Requirements: strong basic science background. Same as FRRB:7001.
**PATH:7211 Research in Pathology**
Arr.
Basic aspects of pathology or clinical patient material; emphasis on experimental design, methods, literature review, obtaining formal answers to specific questions. Requirements: M.D. enrollment or graduate standing.

**PATH:8007 Medical Student Fellowships in Pathology (Externships)**
0 s.h.
First-hand experience in autopsy, surgical and clinical pathology, teaching, and research to further understanding of disease mechanisms, normal and pathologic anatomy, laboratory use.

**PATH:8008 Warner Fellowship in Experimental Pathology**
0 s.h.
One-year, full-time membership in established research laboratory in the Department of Pathology or collaborating laboratory. Requirements: M.D. enrollment.

**PATH:8133 Introduction to Human Pathology for Graduate Students**
4 s.h.
Human disease; basic disease processes, organ-related and multisystem diseases; case analysis. Offered fall semesters.

**PATH:8301 Laboratory Medicine in Clinical Practice**
Arr.
Issues in appropriate use of clinical laboratory and pathology resources in the primary care setting; case-based approach. Requirements: third- or fourth-year M.D. enrollment.

**PATH:8401 Autopsy Pathology Clerkship**
Arr.

**PATH:8402 Hematopathology Clerkship**
Arr.

**PATH:8403 Surgical Pathology Clerkship**
Arr.

**PATH:8404 Blood Bank Clerkship**
Arr.

**PATH:8498 Pathology On Campus**
Arr.

**PATH:8499 Pathology Off Campus**
Arr.
Pharmacology

Chair
- Curt D. Sigmund

Graduate degrees: M.S. in pharmacology; Ph.D. in pharmacology

Faculty: [Link to Medicine UIowa website]

Web site: [Link to Medicine UIowa website]

The Department of Pharmacology provides professional training for health science students and participates with other departments in educational and research activities such as the Medical Scientist Training (p. 1048) Program, the Physician Scientist Training Pathway, the Molecular and Cellular Biology (p. 953) Program, the Neuroscience (p. 955) Program, the Holden Comprehensive Cancer Center, the Iowa Cardiovascular Center, and the UI Fraternal Order of Eagles Diabetes Research Center.

The department was a pioneer in offering pharmacology to undergraduate students with little or no science background. Lectures in PCOL:2120 Drugs: Their Nature, Action, and Use emphasize the mechanisms of drug action and give students a background for rational decisions concerning use of drugs.

Pre- and postdoctoral students pursue research training in all areas of pharmacology in the department in preparation for career opportunities in academia, government, and industry.

Graduate Programs of Study
- Master of Science in pharmacology
- Doctor of Philosophy in pharmacology

Department of Pharmacology graduate study includes both didactic and research experience. Qualified students may pursue the joint M.D./Ph.D. in the University's Medical Scientist Training Program.

Master of Science

The Master of Science program in pharmacology requires a minimum of 30 s.h. of graduate credit. The program requires the following core courses.

- PCOL:5135 Principles of Pharmacology 1 s.h.
- PCOL:5136 Pharmacogenetics and Pharmacogenomics 1 s.h.
- PCOL:5137 Neurotransmitters 1 s.h.
- PCOL:6080 Pharmacology Seminar 1 s.h.
- PCOL:6090 Graduate Research in Pharmacology 6 s.h.
- PCOL:6203 Pharmacology for Graduate Students 6 s.h.
- PCOL:6207 Ion Channel Pharmacology 1 s.h.
- PCOL:6208 G Proteins and G Protein-Coupled Receptors 1 s.h.
- PCOL:6209 Steroid Receptor Signaling 1 s.h.
- PCOL:6250 Advanced Problem Solving in Pharmacological Sciences 1 s.h.
- BIOC:5243 Biophysical Chemistry Module 1 1 s.h.
- BISC:5201 Fundamentals of Gene Expression Processes 1 s.h.
- BISC:5203 Fundamentals of Dynamic Cell Processes 1 s.h.
- BISC:5204 Biostatistics for Biomedical Research 1 s.h.
- MCB:6225 Growth Factor Receptor Signaling 1 s.h.
- MPB:5153 Graduate Physiology 4 s.h.

Satisfactory preparation and oral defense of a thesis based on the student's own research are required for completion of the program.

Doctor of Philosophy

The Doctor of Philosophy program in pharmacology requires a minimum of 72 s.h. of graduate credit. The program requires the following core courses.

- PCOL:5135 Principles of Pharmacology 1 s.h.
- PCOL:5136 Pharmacogenetics and Pharmacogenomics 1 s.h.
- PCOL:5137 Neurotransmitters 1 s.h.
- PCOL:6080 Pharmacology Seminar 1 s.h.
- PCOL:6090 Graduate Research in Pharmacology 6 s.h.
- PCOL:6203 Pharmacology for Graduate Students 6 s.h.
- PCOL:6207 Ion Channel Pharmacology 1 s.h.
- PCOL:6208 G Proteins and G Protein-Coupled Receptors 1 s.h.
- PCOL:6209 Steroid Receptor Signaling 1 s.h.
- PCOL:6250 Advanced Problem Solving in Pharmacological Sciences 1 s.h.
- BIOC:5243 Biophysical Chemistry Module 1 1 s.h.
- BISC:5201 Fundamentals of Gene Expression Processes 1 s.h.
- BISC:5203 Fundamentals of Dynamic Cell Processes 1 s.h.
- BISC:5204 Biostatistics for Biomedical Research 1 s.h.
- MCB:6225 Growth Factor Receptor Signaling 1 s.h.
- MPB:5153 Graduate Physiology 4 s.h.

Individual faculty research advisors may require additional courses.

During the first year of the program, students are required to work in three different faculty laboratories before selecting a laboratory in which to pursue thesis research. Students then are expected to gain maximum laboratory research experience while completing course work. The Ph.D. comprehensive examination (written and oral) is given at the end of the fourth semester. Satisfactory preparation and oral defense of the thesis complete the program.

There is no departmental foreign language requirement.

Admission

Applicants must meet the admission requirements of the Graduate College; see the Manual of Rules and Regulations of the Graduate College. They should have a g.p.a. of at least 3.00 and a combined verbal and quantitative score of at least 312 on the Graduate Record Examination (GRE) General Test. They should have completed undergraduate courses in chemistry, biology, biochemistry, and mathematics.

Admission to the graduate programs is determined by the faculty after receipt of a completed formal application and interview (if appropriate) by faculty members or other designated individuals. Each application is reviewed individually. Some standard admission criteria may be waived for applicants who possess outstanding credentials in other areas.
Financial Support
The department provides all Ph.D. students and some M.S. students with financial support in the form of stipends and tuition support. Support is renewed annually based on satisfactory progress toward meeting degree requirements.

Courses

**PCOL:2120 Drugs: Their Nature, Action, and Use**
2 s.h.
Principles of drug action, toxicity; sedatives, stimulants, hallucinogens, narcotics, over-the-counter agents, antibiotics, oral contraceptives. Offered spring semesters. Recommendations: closed to Pharm.D. students.

**PCOL:4130 Drug Mechanisms and Actions**
3 s.h.
Introduction to principles of pharmacology, pharmacologic actions of drugs. Offered spring semesters. Requirements: undergraduate biochemistry and physiology courses.

**PCOL:4199 Undergraduate Research in Pharmacology**
arr.
Experimental research under faculty supervision in department laboratories.

**PCOL:5135 Principles of Pharmacology**
1 s.h.
Basic pharmacological principles underlying drug absorption, drug distribution throughout the body, drug metabolism, and drug elimination; how these processes determine drug dosing and the means by which dosing parameters are characterized; drug receptor interactions and their quantitation. Offered spring semesters.

**PCOL:5136 Pharmacogenetics and Pharmacogenomics**
1 s.h.
Impact of genetic variation on the actions and metabolism of drugs; database search techniques to identify variants. Offered spring semesters. Prerequisites: PCOL:5135. Recommendations: undergraduate or graduate biochemistry.

**PCOL:5137 Neurotransmitters**
1 s.h.
Mechanisms of neurotransmission focusing on mechanisms of synthesis, regulation of release, mechanisms of action, means of degradation, and CNS pathways for major neurotransmitters; disease states involving various neurotransmitter systems. Offered spring semesters.

**PCOL:5204 Basic Biostatics and Experimental Design**
1 s.h.
Overview of the theory of experimental design and data analysis in the biological sciences; types of analyses available for common types of data generated in the biomedical sciences; review of statistical methods used in published studies; only a cursory coverage of mathematical computations involved in various analytical tests will be provided.

**PCOL:6015 Topics in Neuropharmacology**
1 s.h.
Recent advances in neuropharmacology, developmental neurobiology, neuroendocrinology, and related neurosciences. Offered fall semesters.

**PCOL:6020 Topics in Pharmacogenomics**
1 s.h.
Recent advances in pharmacogenomics, pharmacogenetics, and related genetic fields. Offered fall semesters.

**PCOL:6025 Topics in Cell Signaling and Cancer**
1 s.h.
Recent advances in cell signaling mechanisms, mechanisms of cancer, cancer biology, and related sciences.

**PCOL:6030 Topics in Cardiovascular Pharmacology**
1 s.h.
Recent advances in cardiovascular pharmacology, metabolic pharmacology, and related sciences. Offered spring semesters.

**PCOL:6035 Topics in Pain and Analgesia**
1 s.h.
Recent advances in pain research, therapy.

**PCOL:6080 Pharmacology Seminar**
1 s.h.

**PCOL:6090 Graduate Research in Pharmacology**
arr.

**PCOL:6099 Special Topics in Pharmacology**
arr.

**PCOL:6203 Pharmacology for Graduate Students**
6 s.h.
Principles of pharmacology, pharmacologic actions of drugs, correlation with therapeutic uses. Offered fall semesters. Prerequisites: BIOC:5243 and BISC:5201 and BISC:5203 and MPB:5153.

**PCOL:6204 Pharmacology for Health Sciences: Nurse Anesthetist**
5 s.h.
Principles of pharmacology; pharmacologic actions of drugs, correlation with therapeutic uses. Offered fall semesters. Prerequisites: ACB:6000 or NURS:6000. Requirements: enrollment in Anesthesia Nursing Program.

**PCOL:6207 Ion Channel Pharmacology**
1 s.h.
Heuristic, semiquantitative approach to concepts in ion channel physiology and pharmacology; up-to-date physical principles, classification, and structure/function relationships for major voltage-gated ion channels that facilitate application of abstract concepts to physiological, pharmacological, and general biological problems. Offered spring semesters.

**PCOL:6208 G Proteins and G Protein-Coupled Receptors**
1 s.h.
Structure and function of small molecular weight G proteins; heteromeric G proteins and G protein-coupled receptors. Offered spring semesters. Prerequisites: BIOC:5243 and BISC:5201 and BISC:5203. Recommendations: MCB:6225.

**PCOL:6209 Steroid Receptor Signaling**
1 s.h.
Structure-function relationship and genomic and nongenomic actions of the steroid hormone receptor family; basis for actions of novel new ligands on these receptors. Offered spring semesters. Same as MPB:6209, NSCI:6209.

**PCOL:6250 Advanced Problem Solving in Pharmacological Sciences**
1 s.h.
Discussion of methodologies, strategies, and approaches commonly used to solve pharmacological sciences problems; use of interpersonal problem-solving skills to develop experimental study plans for solving contemporary scientific problems in pharmacology.

**PCOL:8180 Pharmacology for Pharmacy Students I**
Principles of pharmacology, toxicology; drug and toxic mechanisms; systemic and organ-specific pharmacologic and toxic responses. Offered spring semesters.
Requirements: first-year Pharm.D. enrollment or graduate standing.

**PCOL:8181 Pharmacology for Pharmacy Students II**
Continuation of PCOL:8180. Offered fall semesters.
Requirements: second-year Pharm.D. enrollment or graduate standing.

**PCOL:8203 Pharmacology for Health Sciences: Medical**
Principles of pharmacology, pharmacologic actions of drugs, correlation with therapeutic uses. Offered fall semesters. Prerequisites: MED:8112. Requirements: M.D. enrollment.

**PCOL:8225 Pharmacology for Health Sciences: Physician Assistant Students**
Principles of pharmacology, pharmacologic actions of drugs, correlation with therapeutic uses. Offered fall semesters. Requirements: Physician Assistant Studies and Services enrollment.

**PCOL:8240 Basic Pharmacology for Dental Students**
Principles of pharmacology, pharmacologic actions of drugs, correlation with therapeutic uses. Offered spring semesters. Prerequisites: BIOC:8101 and MPB:8115. Requirements: D.D.S. enrollment.
Physical Therapy and Rehabilitation Science

Chair
- Richard K. Shields

Graduate degrees: D.P.T.; M.A. in physical therapy; Ph.D. in physical rehabilitation science

Faculty: http://www.medicine.uiowa.edu/dept_primary_apr.aspx?appointment=Physical%20Therapy%20and%20Rehabilitation%20Science

Web site: http://www.medicine.uiowa.edu/pt/

Physical therapists provide services to patients and clients who have impairments, functional limitations, disabilities, pain, or changes in physical function resulting from injury, disease, or other causes. Physical therapists practice and collaborate with a variety of health professionals. In the area of health promotion and wellness, they provide screening examinations, prescribe fitness programs, and educate the public regarding healthy lifestyles. Research, teaching, consultation, and administration also are parts of a physical therapist’s professional role.

A wide variety of opportunities exist for professional practice in inpatient, outpatient, and community-based settings. Examples include practice in general or specialized hospitals, programs for children with disabilities, private physical therapy clinics, extended care facilities, nursing homes, community and governmental agencies, rehabilitation centers, the armed forces, foreign service, home health agencies, school systems, fitness centers, and athletic facilities. Research and teaching careers in academic institutions are available for those who earn a Ph.D. in rehabilitation science.

The Department of Physical Therapy and Rehabilitation Science is located in the Carver College of Medicine on the University of Iowa health sciences campus, which includes University of Iowa Hospitals and Clinics, one of the nation’s largest university-owned teaching hospitals. The department has seven state-of-the-art independent research laboratories and is well equipped for classroom and laboratory instruction and innovative research. Students have access to faculty members in the basic sciences and medicine, basic sciences courses, clinical specialty expertise, and innovative learning experiences associated with a medical college environment.

Graduate Programs of Study
- Doctor of Physical Therapy
- Master of Arts in physical therapy
- Doctor of Philosophy in physical rehabilitation science

The Doctor of Physical Therapy (D.P.T.) is the entry-level professional degree for physical therapists. The Master of Arts in physical therapy is granted to students working toward the Doctor of Philosophy in physical rehabilitation science. Based on the number of outstanding applicants, 38-42 students are admitted to the D.P.T. program and around 20 students are enrolled in the Ph.D. program each year.

Doctor of Physical Therapy

The Doctor of Physical Therapy requires a minimum of 104 s.h. and is completed in two and a half years. The program is fully accredited by the Commission on Accreditation in Physical Therapy Education. Satisfactory completion of the professional program qualifies candidates to take the National Physical Therapy Examination for licensure to practice. The minimum passing score on the exam is the same in all jurisdictions.

Technical Standards for Graduation

Doctor of Physical Therapy graduates must possess and demonstrate the physical and cognitive skills and character attributes required to provide physical therapy services in a broad variety of clinical situations and environments. All D.P.T. candidates must perform, with or without reasonable accommodation, the following skills safely, effectively, efficiently, and in compliance with the legal and ethical standards set by the American Physical Therapy Association Code of Ethics and Standards of Practice:

- communicate effectively through appropriate verbal, nonverbal, and written communication with patients, families, and others;
- demonstrate ability to apply universal precautions;
- utilize appropriate tests and measures in order to perform a physical therapy examination; examples include, but are not limited to, examination and evaluation of cognitive/mental status, vital signs, skin and vascular integrity, wound status, endurance, segmental length, girth, volume, sensation, strength, tone, reflexes, movement patterns, coordination, balance, developmental stage, soft tissue, joint motion/play, cranial and peripheral nerve function, posture, gait, functional abilities, assistive devices fit/use, psychosocial needs, and the pulmonary system;
- demonstrate the ability to reach diagnostic and therapeutic judgments through analysis and synthesis of data gathered during patient/client examination in order to develop an appropriate plan of care;
- perform fully, or in a reasonably independent manner, physical therapy interventions appropriate to the patient’s status and desired goals;
- apply teaching/learning theories and methods in health care and community environments;
- accept criticism and respond by appropriate behavior modification;
- possess the perseverance, diligence, and consistency to complete the physical therapy curriculum and enter the practice of physical therapy.

Applicants with health conditions or disabilities who need accommodation to meet the technical standards for graduation should contact the University’s Student Disability Services office.

Curriculum

The Doctor of Physical Therapy degree requires the following course work (total of 104 s.h.).

First Summer Session

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PTRS:5101</td>
<td>Introduction to Physical Therapy</td>
<td>2 s.h.</td>
</tr>
</tbody>
</table>
### First Semester (Fall)
- **PTRS:5100** Professional Issues and Ethics: 1 s.h.
- **PTRS:5103** Principles of Physical Therapy II: 2 s.h.
- **PTRS:5144** Interprofessional Education I: Team-Based Approach to Health Care: 1 s.h.
- **PTRS:5209** Surface Anatomy: 1 s.h.
- **PTRS:5210** Kinesiology and Pathomechanics: 4 s.h.
- **PTRS:5790** Integrated Clinical Education in Physical Therapy I: 1 s.h.
- **ACB:5108** Human Anatomy: 5 s.h.
- **PATH:8133** Introduction to Human Pathology for Graduate Students: 4 s.h.

### Second Semester (Spring)
- **PTRS:5131** Therapeutic Physical Agents: 2 s.h.
- **PTRS:5201** Musculoskeletal Therapeutics I: 3 s.h.
- **PTRS:5206** Cardiopulmonary Therapeutics: 3 s.h.
- **PTRS:5215** Applied Clinical Medicine: 2 s.h.
- **PTRS:5236** Case-Based Learning II: 1 s.h.
- **PTRS:5791** Integrated Clinical Education in Physical Therapy II: 1 s.h.
- **ACB:6252** Functional Neuroanatomy: 4 s.h.

### Second Summer Session
- **PTRS:6120** Physical Therapy Management and Administration I: 2 s.h.
- **PTRS:6143** Selected Topics in Physical Therapy Practice: 2 s.h.
- **PTRS:6176** Pharmacology for Physical Therapists: 3 s.h.
- **PTRS:6793** Integrated Clinical Education in Physical Therapy III: 3 s.h.

### Third Semester (Fall)
- **PTRS:6122** Psychosocial Aspects of Patient Care: 1 s.h.
- **PTRS:6134** Physical Therapy Management of Integumentary System: 2 s.h.
- **PTRS:6145** Interprofessional Education II: Teaching Neural and Musculoskeletal Evaluation Principles: 1 s.h.
- **PTRS:6170** Management of People with Prosthetic and Orthotic Needs: 2 s.h.
- **PTRS:6200** Pediatric Physical Therapy: 2 s.h.
- **PTRS:6202** Musculoskeletal Therapeutics II: 3 s.h.
- **PTRS:6224** Activity-Based Neural and Musculoskeletal Plasticity in Health Care: 4 s.h.
- **PTRS:6237** Service Learning I: 1 s.h.
- **PTRS:6250** Research in Physical Therapy: 2 s.h.

### Fourth Semester (Spring)
- **PTRS:6121** Physical Therapy Management and Administration II: 1 s.h.
- **PTRS:6133** Pain Mechanisms and Treatment: 2 s.h.
- **PTRS:6172** Radiology/Imaging for Physical Therapists: 2 s.h.

### Admission
Applicants must meet the admission requirements of the Graduate College; see the Manual of Rules and Regulations of the Graduate College. They must have completed a baccalaureate degree and all prerequisite course work from an accredited institution in the United States, or anticipate completing the degree before enrolling in the D.P.T. program. They must have a cumulative g.p.a. of at least 3.00 and must have completed the following prerequisite course work, preferably with a g.p.a. of at least 3.00. All science courses must include the appropriate laboratory instruction. The prerequisite courses must have been taken for a letter grade. Credit awarded through advanced placement testing may be applied only to the mathematics requirement.

**Biological sciences:** a complete introductory course in principles of general biology or zoology and advanced course work in biology or zoology (for which an introductory course is prerequisite) equivalent to 12 s.h.

**Physics:** a complete introductory course equivalent to 8 s.h.

**Chemistry:** a complete introductory course equivalent to 8 s.h.

**Physiology:** a systemic human physiology course equivalent to 3 s.h.

**Psychology:** courses equivalent to 6 s.h.

**Mathematics:** a college-level mathematics course, at the level of trigonometry or higher, equivalent to 3 s.h.

**Statistics:** a statistical methods course equivalent to 3 s.h.

All applicants must take the Graduate Record Examination (GRE) General Test. They must take the test early enough for their scores to be received prior to the application deadline.

Applications are submitted online through the Physical Therapist Centralized Application Service (PTCAS). PTCAS allows applicants to use a single application and one set of
materials to apply to multiple physical therapy programs. Once the application portfolio is complete, PTCAS forwards it to the University of Iowa.

Personal interviews are required of applicants selected for consideration by the admissions committee. Interviews are conducted at the University of Iowa. The physical therapy admissions committee selects applicants who appear to be best qualified for the study and practice of the profession. Some preference is given to Iowa residents.

Applications are accepted from July 1 to November 1 for entry the following summer. Prospective students should apply as early as possible.

**EARLY ADMISSION**

The D.P.T. program offers an early admission plan for highly qualified applicants. Early admission applicants must have outstanding grade-point averages, generally 3.75 or higher. They also must have Graduate Record Examination (GRE) General Test scores at or above the 50th percentile for all sections. Application materials are the same as those for regular admission. Application deadline for the early admission plan is September 15; applicants are notified of admission by December 1. Those who are interviewed but are not selected for early admission are automatically placed in the final general applicant pool. Contact the Department of Physical Therapy and Rehabilitation Science for more information.

**Background Checks**

Enrollment in the Doctor of Physical Therapy program is contingent on a successful criminal background check. Drug screening may be required for some clinical rotations.

**Expenses**

Applicants admitted to the D.P.T. program must make an advance tuition payment which is forfeited if the applicant does not enroll. In addition to paying University tuition and fees, students are assessed laboratory fees for the human anatomy and neuroanatomy courses and are responsible for purchasing supplies, such as lab coats, patient evaluation kits, and course packets.

All students are required to comply with the pre-entry and periodic health screening program developed by Student Health & Wellness in cooperation with University of Iowa Hospitals and Clinics. Students must pay for the health screenings. Students also are required to have health insurance.

**Master of Arts in Physical Therapy**

The Master of Arts in physical therapy is granted to students pursuing knowledge about the underlying science of rehabilitation. Students often work toward the Doctor of Philosophy in physical rehabilitation science with the goal to promote scholarship in the field. The M.A. degree does not prepare students to practice physical therapy.

**Ph.D. in Physical Rehabilitation Science**

The Doctor of Philosophy in physical rehabilitation science requires a minimum of 72 s.h. of graduate credit. The program is designed to advance the student's ability to independently develop and carry out research that establishes the scientific basis for prevention, evaluation, and treatment of impairments, functional limitations, and disability. The curriculum is flexible enough to accommodate research focusing on basic, applied, or clinical studies in the rehabilitation sciences. Students have access to the program's research laboratories (see "Research Facilities" later in this section).

Graduates who complete the program are prepared for academic appointments that emphasize research, scholarship, and teaching. They possess:

- theoretical and scientific knowledge to perform basic, applied, or clinical-level original research that leads to scientific presentations, publication in peer-reviewed journals, and competition for extramural funding through scientific grant writing;
- breadth of knowledge in exercise physiology, biomechanic, neuroscience, or motor control specialty areas as they relate to impairment, functional limitation, and disability; and
- theoretical and practical skills required for college or university teaching at the professional entry and advanced graduate levels.

**Curriculum**

Ph.D. students complete a minimum of 72 s.h. beyond the baccalaureate. Each student and his or her faculty advisor develop an individualized study plan. A preliminary study plan is developed within the first 9 s.h. of graduate study; a final plan is submitted to the Graduate College when the Ph.D. comprehensive examination is scheduled.

To ensure breadth of knowledge, all students complete specific core, research, and scientific specialty area content courses. Elective courses are selected to provide in-depth study of the specialty; they are complemented by an advanced seminar course specific to the student's specialty and taken in preparation for the comprehensive examination.

Students must satisfactorily complete the comprehensive examination, which is taken after all required course work is completed. Doctoral study culminates with 12 s.h. of thesis research and an oral examination.

**GENERAL CORE REQUIREMENT**

Ph.D. students must complete the following core requirements. Exception: the capstone course PTRS:7900 Rehabilitation Research Capstone Project is recommended but not required for students who enter the program with a master's or doctoral-level degree; however, it is required for all students who enter the program with a bachelor's degree.

All of these:

- PTRS:7812 Biomedical Instrumentation and Measurement 3 s.h.
- PTRS:7820 Seminar in Rehabilitation Science (taken twice) 2 s.h.
- PTRS:7826 Scientific Writing in Rehabilitation Science 3 s.h.
- PTRS:7880 Teaching Practicum arr.
- PTRS:7900 Rehabilitation Research Capstone Project arr.
- GRAD:7270 Principles of Scholarly Integrity 1 s.h.
- GRAD:7604 Principles of Scholarly Integrity 0 s.h.
- GRAD:7614 Principles of Scholarly Integrity 0 s.h.
PSQF:7385 Teaching and Learning in Higher Education 3 s.h.

One of these:

BIOS:5110 Introduction to Biostatistics 3 s.h.
STAT:4143 Introduction to Statistical Methods 3 s.h.

One of these:

BIOS:5120 Design and Analysis of Biomedical Studies 3 s.h.
STAT:6513 Intermediate Statistical Methods 4 s.h.

**RESEARCH REQUIREMENT**

Students complete at least 24 s.h. from the following.

PTRS:7884 Practicum in Research arr.
PTRS:7895 Advanced Seminar in Rehabilitation Science 3 s.h.
PTRS:7925 Independent Study arr.
PTRS:7927 Research in Rehabilitation Science arr.
PTRS:7990 Thesis: Rehabilitation Science 12 s.h.

**SPECIALTY CONTENT REQUIREMENT**

Each student must complete at least 9 s.h. in his or her scientific specialty area. Students may choose courses from the following list, but other courses suited to the student's background knowledge and interest area are considered.

**Anatomy and Cell Biology**

ACB:8401 Advanced Human Anatomy arr.

**Epidemiology**

EPID:6900 Design of Intervention and Clinical Trials 3 s.h.

**Health and Human Physiology**

HHP:4130 Skeletal Muscle Physiology 3 s.h.
HHP:4220 Biomechanics of Human Motion 3 s.h.
HHP:4300 Neural Control of Posture and Movement 3 s.h.
HHP:4410 Exercise Physiology 3 s.h.
HHP:4460 Cardiovascular Physiology 3 s.h.
HHP:6300 Seminar in Motor Control 1 s.h.

**Neuroscience**

ACB:8114 Medical Neuroscience 4 s.h.
NSCI:7235 Neurobiology of Disease 3 s.h.

**Occupational and Environmental Health**

OEH:4310 Occupational Ergonomics I 3 s.h.
OEH:6310 Clinical Ergonomics 3 s.h.
OEH:6320 Occupational Ergonomics II 3 s.h.

**Pharmacology**

PCOL:5137 Neurotransmitters 1 s.h.
PCOL:6035 Topics in Pain and Analgesia 1 s.h.
PCOL:6207 Ion Channel Pharmacology 1 s.h.
PCOL:6250 Advanced Problem Solving in Pharmacological Sciences 1 s.h.

**Physical Therapy**

PTRS:5210 Kinesiology and Pathomechanics 4 s.h.
PTRS:6224 Activity-Based Neural and Musculoskeletal Plasticity in Health Care 4 s.h.
PTRS:7875 Analysis of Activity-Based Neural and Musculoskeletal Plasticity 3 s.h.
PTRS:7885 Biomechanical Analysis in Rehabilitation 3 s.h.
PTRS:7899 Introduction to Pain: Overview of Theories, Concepts, and Mechanisms 1 s.h.
PTRS:7901 Clinical Correlates of Pain: Syndromes and Management 1 s.h.
PTRS:7902 Molecular, Cellular, and Neural Mechanisms of Pain 2 s.h.

**Admission**

Applicants must meet the admission requirements of the Graduate College; see the Manual of Rules and Regulations of the Graduate College. They should have a cumulative g.p.a. of at least 3.00 and scores at or above the 50th percentile for each section of the Graduate Record Exam (GRE) General Test. A minimum of two years of clinical experience is desirable.

Applicants whose first language is not English must score at least 100 (Internet-based) on the Test of English as a Foreign Language (TOEFL).

Application materials must include a complete Graduate College application form, test scores, transcripts, three letters of recommendation, and a statement of purpose. Completed applications should be sent to the Department of Physical Therapy and Rehabilitation Science.

Personal interviews are required of all applicants selected for consideration by the admissions committee. On-campus interviews are preferred, but telephone interviews may be substituted when necessary.

Application deadlines are October 15 for spring semester entry (notification by December 15); March 15 for summer entry (notification by May 15); and May 15 for fall semester entry (notification by July 15).

**Financial Support**

A number of research assistantships are available for Ph.D. students. Faculty advisors provide guidance for students seeking external scholarship support through foundations and federal programs that support Ph.D. training.

**Research Facilities**

The department's state-of-the-art research facilities include the Orthopedic Gait Analysis Laboratory and a spinal cord research laboratory at University Hospitals and Clinics; the Human Movement Control/Performance Laboratory; the Musculoskeletal Biomechanics and Sports Medicine Research Laboratory; the Neurobiology of Pain Laboratory; the Neuromuscular Biomechanics Laboratory; the Human Integrative and Cardiovascular Physiology Laboratory; and the Applied Neuroplasticity Laboratory. Use of other laboratories may be arranged.
Courses

PTRS:5100 Professional Issues and Ethics 1 s.h.
Evolution of physical therapy and rehabilitation science as a profession; contemporary issues in education and practice; ethical theory and approaches to analyzing and acting on ethical problems; professional and peer relationships.

PTRS:5101 Introduction to Physical Therapy Practice 2 s.h.
Lectures, case presentations, and group activities using the Guide to Physical Therapist Practice; elements of the patient/client management model, concepts of the disablement model, preferred practice patterns as applied in clinical problems; importance of professionalism, professional socialization; introduction to evidence-based practice; competence in medical terminology.

PTRS:5102 Principles of Physical Therapy I 2 s.h.
Patient management skills: interviewing, medical history taking, vital signs, positioning, draping, transfers, body mechanics, assisted gait, wheelchairs, and negotiation of architectural barriers.

PTRS:5103 Principles of Physical Therapy II 2 s.h.
Continuation of PTRS:5102; expansion of existing skills and provides new learning experiences in documentation, assessment of joint range of motion/goniometry, manual muscle testing, preambulatory intervention strategies, gait analysis; musculoskeletal, neuromuscular, and integumentary systems review. Prerequisites: PTRS:5102.

PTRS:5131 Therapeutic Physical Agents 2 s.h.
Theoretical and practical applications for safe, effective use of physical agents (superficial and deep heat, cold, hydrotherapy), electrotherapeutic modalities (biofeedback, NMES, TENS, iontophoresis); massage and soft tissue mobilization; emphasis on problem solving, clinical decision making.

PTRS:5144 Interprofessional Education I: Team-Based Approach to Health Care 1 s.h.
Development and interaction within small group of interprofessional students from physical therapy, medicine, pharmacy, dentistry, nursing, and public health; deans and faculty from each college facilitate; three-hour initial session for all disciplines followed by informal monthly electronic scenarios, second formal meeting followed by informal monthly electronic discussions.

PTRS:5201 Musculoskeletal Therapeutics I 3 s.h.
Musculoskeletal techniques and biomechanical principles applied to assessment and evaluation of common orthopedic problems of the spine; problem solving, case-study approach to clinical methods, skill acquisition.

PTRS:5205 Health Promotion and Wellness 3 s.h.
Overview of health promotion, fitness, and wellness strategies, including information on levels of health promotion, risk assessment, applied physiology (skeletal muscle, energy metabolism, and physiological responses to exercise), exercise testing and training guidelines, body composition assessment, and development of individual weight management and exercise training programs; classroom and laboratory experiences.

PTRS:5206 Cardiopulmonary Therapeutics 3 s.h.
Cardiorespiratory anatomy, physiology, and application of basic concepts, techniques in management of patients with acute and chronic cardiac, pulmonary disorders; laboratories.

PTRS:5209 Surface Anatomy 1 s.h.
Laboratory teaching activities that parallel the human anatomy course; observation, palpation, and problem solving skills; upper- and lower-limb, head and neck, thorax, and abdomen.

PTRS:5210 Kinesiology and Pathomechanics 4 s.h.
Normal and pathological movement based on understanding of muscle mechanics, segment and joint mechanics, muscle function; instructor- and student-centered learning experiences; EMG laboratories.

PTRS:5215 Applied Clinical Medicine 2 s.h.
Pathological disorders frequently encountered by physical therapists in clinical practice, addressed by physicians and health professionals who are not physical therapists; physical therapy management.

PTRS:5235 Case-Based Learning I 1 s.h.
Small group case study seminars and simulated patient instructor learning experiences; clinical problems coordinated with concurrent courses; student-centered, problem-based learning format with emphasis on evidence-based practice objectives. First in a two-course sequence.

PTRS:5236 Case-Based Learning II 1 s.h.
Small-group case study seminars and simulated patient instructor learning experiences; clinical problems coordinated with concurrent courses taken in curriculum; student centered, problem-based learning format; emphasis on evidence-based practice objectives. Second in a two-part series of integrated courses. Prerequisites: PTRS:5235.

PTRS:5790 Integrated Clinical Education in Physical Therapy I 1 s.h.
Integrated clinical experiences in area physical therapy clinics; overview of diverse nature of practice through half- or full-day experience; basic skills in examination, intervention, and documentation.

PTRS:5791 Integrated Clinical Education in Physical Therapy II 1 s.h.
Continuation of PTRS:5790; integrated half-day clinical experiences. Prerequisites: PTRS:5790.

PTRS:6120 Physical Therapy Management and Administration I 2 s.h.
The changing U.S. health care system; access to physical therapy services, reimbursement to health care providers, mechanisms for controlling costs while providing quality care; clinical vignettes, small group problem solving.

PTRS:6121 Physical Therapy Management and Administration II 1 s.h.
Principles of management in physical therapy practice; historical perspective, current health care environment; business principles; marketing, managing risk, medical/legal concerns, preparing for the future.

PTRS:6122 Psychosocial Aspects of Patient Care
Emotional reactions to disability, psychosocial aspects of disability as they relate to patient-physical therapist interaction; specific problems of the angry, non-compliant, or chronic-pain patient; complementary roles of other health professionals; cultural competence in professional behavior and patient treatment; importance of holistic health care.

PTRS:6133 Pain Mechanisms and Treatment
Introduction to basic science mechanisms, assessment, and management of pain; basic science mechanism involved in transmission and perception of painful stimuli after tissue injury, assessment and physical therapy management of pain; emphasis on scientific principles and published literature to support treatment techniques.

PTRS:6134 Physical Therapy Management of Integumentary System
Overview of physical therapy examination and management of the integumentary system; wound pathology, diagnosis associated with the integumentary system, inflammation and repair, examination and reexamination techniques, documentation, clinical decision making, lecture and laboratory formats; interventions, including patient/client information, physical agents, electrotherapy, wound dressing.

PTRS:6143 Selected Topics in Physical Therapy Practice
Specialty topics in physical therapy; geriatrics, wheelchair seating/positioning, women's health, home health, industrial physical therapy; alternative or new treatments; guest lectures, lab component.

PTRS:6145 Interprofessional Education II: Teaching Neural and Musculoskeletal Evaluation Principles
Active involvement in integrating anatomy, kinesiology, and movement control principles as applied to a select group of pathologies with the goal of being able to teach content area; preassigned student group leaders; emphasis on student as active learner; opportunity to teach academic areas previously studied in first and second years of curriculum; may include teaching several of these musculoskeletal principles in a first-year medical student anatomy course.

PTRS:6170 Management of People with Prosthetic and Orthotic Needs
Physical therapy management and assessment of patients in need of prosthetic and orthotic devices; principles and components of prosthetic and orthotic design and use.

PTRS:6172 Radiology/Imaging for Physical Therapists
Basic principles and procedures for acquisition and interpretation of radiology and imaging in clinical practice and research; plain film radiographs, CT, MRI, other common imaging modalities; case-based, multidisciplinary approach.

PTRS:6173 Differential Diagnosis in Physical Therapy
Use of physical therapy examination and evaluation skills to diagnose physical therapy problems; focus on use of good clinical decision-making skills when analyzing a patient's history and administering physical therapy tests and measures to confirm or rule out differential diagnoses; components of the medical examination; importance of collaboration between therapists and other health professionals; interactive case studies presented by clinical experts.

PTRS:6174 Physiologic and Anatomical Foundations of Musculoskeletal Therapeutics
Course topics include spine, extremities, and craniofacial regions of the body; pathologies, examination and measurement techniques, and management principles.

PTRS:6176 Pharmacology for Physical Therapists
Contemporary pharmacology; overview of basic pharmokinetic and pharmacodynamic principles; relation of drug therapy to therapeutic interventions provided by physical therapists; small group clinical case presentations.

PTRS:6200 Pediatric Physical Therapy
Preparation for physical therapy practice in pediatric settings using interdisciplinary family-centered practice; normal and abnormal development, standardized assessment, service-delivery settings, interventions, management strategies specific to pediatrics.

PTRS:6202 Musculoskeletal Therapeutics II
Pathology, assessment, management of orthopedic disorders of the upper quarter; problem-solving approach to evaluation and management of patients with musculoskeletal conditions. Prerequisites: PTRS:5201.

PTRS:6203 Musculoskeletal Therapeutics III
Pathology, assessment, management of orthopedic disorders of the lower quarter; problem-solving approach to evaluation and management of patients with musculoskeletal conditions. Prerequisites: PTRS:6202.

PTRS:6204 Progressive Functional Exercise
Therapeutic exercise options (e.g., isotonics, isokinetics, plyometrics, endurance exercises, stretching exercises) and training principles; application to functional activities, including those of daily living, work, recreation, and sport; laboratory component.

PTRS:6224 Activity-Based Neural and Musculoskeletal Plasticity in Health Care
Examination of neural, muscular, and skeletal plasticity to increased and decreased use in normal and pathological states (chronic inactivity, obesity, metabolic syndromes, orthopedic and neurological injuries); principles of genetic regulation with physical activity including underlying mechanisms contributing to acute and chronic adaptations of muscle, spinal circuitry, and supra/spinal centers; integration of movement control concepts through contemporary papers evaluating short and long latency reflexes, posture and balance control, spasticity, and motor learning in individuals with acute and chronic perturbations to the nervous system.

**PTRS:6225 Neuromuscular Therapeutics**  
Application of clinical neuroscience knowledge and motor control and motor learning concepts to the practice of neurological physical therapy; emphasis on diagnosis and therapeutic intervention for persons with central nervous system dysfunction of adult onset. Prerequisites: PTRS:6224.

**PTRS:6237 Service Learning I**  
Service-learning work experience with community partners; students develop individual learning goals for these experiences; classroom reflection on service activities, experiences with elderly and/or disabled, and social responsibility, advocacy, and professionalism in physical therapy; written reflection assignments. First in a two-course sequence.

**PTRS:6238 Service Learning II**  
Service-learning work experience with community partners; students develop individual learning goals for these experiences; classroom reflection on service activities, experiences with elderly and/or disabled, and social responsibility, advocacy, and professionalism in physical therapy; written reflection assignments. Second in a two-course sequence. Prerequisites: PTRS:6237.

**PTRS:6250 Research in Physical Therapy**  
Topics relevant to evidence-based practice and research design; identification of appropriate questions for research and clinical applications, location and evaluation of available evidence, identification of issues that affect validity of research designs, interpretation of basic statistical analyses.

**PTRS:6251 Critical Inquery in Physical Therapy I**  
Experience conducting group research projects under faculty supervision; data collection and analysis, manuscript preparation, oral defense of research findings during a formal poster presentation. Prerequisites: PTRS:6250.

**PTRS:6252 Critical Inquery in Physical Therapy II**  
Principles and procedures learned in PTRS:6250 and PTRS:6251 applied to a clinical setting; students write and present a case report with an evidence-based practice focus, using a clinical case from their final internships. Prerequisites: PTRS:6251. Requirements: Physical Therapy and Rehabilitation Science program enrollment.

**PTRS:6792 Integrated Clinical Education in Physical Therapy IV**  
Two-week, full-time clinical experience in physical therapy clinics in Iowa, under guidance of physical therapists; theory and practice of physical therapy procedures, competence building in basic skills. Prerequisites: PTRS:6793.

**PTRS:6793 Integrated Clinical Education in Physical Therapy III**  
Six-week, full-time clinical education experience with focus on acute, skilled, long term, or geriatric care in a general hospital, skilled nursing facility, long term care center, or home health setting. Prerequisites: PTRS:5791. Requirements: Doctor of Physical Therapy program enrollment.

**PTRS:6794 Terminal Clinical Education in Physical Therapy I**  
Nine week, full-time clinical education experience divided among various settings; development of competence in independent examination, evaluation, and treatment of patients under supervision of clinical faculty. Prerequisites: PTRS:6792. Requirements: Doctor of Physical Therapy program enrollment.

**PTRS:6795 Terminal Clinical Education in Physical Therapy II**  
Nine-week, full-time clinical education experience divided among various settings; development of competence in independent examination, evaluation, and treatment of patients under supervision of clinical faculty. Prerequisites: PTRS:6794. Requirements: Doctor of Physical Therapy program enrollment.

**PTRS:6796 Terminal Clinical Education in Physical Therapy III**  
Nine-week, full-time clinical education experience divided among various settings; development of competence in independent examination, evaluation, and treatment of patients under supervision of clinical faculty. Prerequisites: PTRS:6795. Requirements: Doctor of Physical Therapy program enrollment.

**PTRS:7812 Biomedical Instrumentation and Measurement**  
Introduction to biomedical instrumentation and measurement; understanding sources of error and noise in biomedical research applications; basic circuit analysis, calibration of measurement tools, A/D conversion, digital filtering; lab components. Offered fall semesters of even years.

**PTRS:7820 Seminar in Rehabilitation Science**  
Exploration of research related to rehabilitation science; lectures by faculty, graduate students, and guest scholars with expertise in areas relevant to rehabilitation science (e.g., neuroscience, physiology, medicine, engineering, pharmacology, integrated physiology).

**PTRS:7826 Scientific Writing in Rehabilitation Science**  
Knowledge of and experience related to scientific writing, critical review of scientific literature, publication in the biomedical sciences, thesis/dissertation writing, grant writing, scientific presentation, writing used in academic and scientific careers.
Mechanisms of Pain

PTRS:7875 Analysis of Activity-Based Neural and Musculoskeletal Plasticity
Examination of neural, muscular, and skeletal plasticity to increased/decreased use in normal and pathological states (chronic inactivity, obesity, metabolic syndromes, orthopedic and neurological injuries); genetic regulation with physical activity and underlying mechanisms contributing to acute and chronic adaptations of muscle, spinal circuitry, and supra-spinal centers; integration of movement control concepts through contemporary papers evaluating short and long latency reflexes, posture and balance control, spasticity, and motor learning in individuals with acute and chronic perturbations to the nervous system; individual research projects.

PTRS:7880 Teaching Practicum

PTRS:7884 Practicum in Research
Laboratory experiences connected with investigative process; individual instruction, observation, activities in methodological development, data acquisition, data analysis aspects of research.

PTRS:7885 Biomechanical Analysis in Rehabilitation
Assessment of pathological movement through human movement analysis techniques, including link segment modeling and analysis, mechanical energy and power analysis, electromyography and muscle modeling.

PTRS:7895 Advanced Seminar in Rehabilitation Science
Current status of research for biological, mechanical, psychological components pertinent to cardiopulmonary, musculoskeletal, neuromuscular areas of rehabilitation science; preparation for comprehensive exam.

PTRS:7899 Introduction to Pain: Overview of Theories, Concepts, and Mechanisms
Overview of pain concepts and mechanisms; general overview of pain, models of pain, peripheral and central mechanisms, and pain inhibition. Requirements: prior neuroscience course.

PTRS:7900 Rehabilitation Research Capstone Project
Specific phases of the research process; development of a research question and associated hypotheses, collection and analysis of data, interpretation and discussion of the information's meaning; presentation to sponsoring mentor's laboratory/program, and written document.

PTRS:7901 Clinical Correlates of Pain: Syndromes and Management
Common pain conditions and management of pain using an interdisciplinary focus; lectures by University of Iowa Hospitals and Clinics clinicians on a variety of acute and chronic pain conditions and management approaches. Requirements: prior neuroscience course.

PTRS:7902 Molecular, Cellular, and Neural Mechanisms of Pain
Basic science mechanisms of pain and pain modulation; understanding molecular basis for pain in nociceptive afferents (peripheral sensitization), underlying molecular and neuronal mechanisms of central processing of pain (central sensitization), cortical pain processing, animal and human experimental pain models; readings from past and current literature. Prerequisites: PTRS:7899. Requirements: prior neuroscience course.

PTRS:7903 Rehabilitation Management of Pain
Basic principles of rehabilitation for pain control including education, exercise, and electrophysical modalities; evidence-based approach to rehabilitation covering mechanisms of action and clinical effectiveness; case studies. Prerequisites: PTRS:7899 and PTRS:7901.

PTRS:7925 Independent Study
Problem-solving experience in physical therapy; commensurate with student's interest, ability.

PTRS:7927 Research in Rehabilitation Science
Placement of physical therapy on sound scientific base; therapy: initiation, refinement, establishment of methods in physical therapy evaluation, treatment; direct clinical and laboratory approach, philosophical treatise, or research proposal.

PTRS:7930 Critical Thinking in Neuro-Mechanical Systems
Problem solving experience in neuro-mechanical systems, commensurate with student interest, ability.

PTRS:7931 Critical Thinking in Pain
Problem solving experience in pain, commensurate with student interest, ability.

PTRS:7932 Critical Thinking in Biomechanics
Problem solving experience in biomechanics, commensurate with student interest, ability.

PTRS:7933 Critical Thinking in Movement Control/Human Performance
Problem solving experience in movement control/human performance, commensurate with student interest, ability.

PTRS:7934 Critical Thinking in Neural Plasticity
Problem solving experience in neural plasticity, commensurate with student interest, ability.

PTRS:7935 Critical Thinking in Sports Medicine
Problem solving experience in sports medicine, commensurate with student interest; ability.

PTRS:7936 Critical Thinking in Cardiovascular Physiology
Problem solving experience in cardiovascular physiology, commensurate with student interest, ability.
Physician Assistant Studies and Services

Chair
- David P. Asprey

Director
- Anthony Brenneman

Director, clinical education
- Carol Gorney

Director, curriculum and evaluation
- Theresa Hegmann

Medical director
- George Bergus

Graduate degree: M.P.A.S.

Faculty: http://www.medicine.uiowa.edu/pa/faculty/
Web site: http://www.medicine.uiowa.edu/pa/

The physician assistant profession is one of the newest and most exciting in health care. Physician assistants (PAs) are licensed to practice medicine with physician supervision. They are responsible for making medical decisions and providing a broad range of diagnostic and therapeutic services.

Physician assistants work in a variety of settings, including medical offices, hospital emergency rooms, nursing homes, rural satellite clinics, health maintenance organizations, and patients' homes.

In the traditional office setting, PAs see patients, obtain histories, perform physical examinations, and order necessary laboratory and/or radiological studies. Based on this information, the PA establishes a diagnosis, develops an appropriate management plan, and initiates treatment that may include prescribing medications. The physician is consulted as needed and remains ultimately responsible for the care provided by the physician/PA team. PAs also are involved in both patient and community health education.

The Department of Physician Assistant Studies and Services is part of the Carver College of Medicine. It is located on the University of Iowa health sciences campus, which includes University of Iowa Hospitals and Clinics, one of the nation's largest university-owned teaching hospitals.

Graduate Program of Study

- Master of Physician Assistant Studies

The Master of Physician Assistant Studies (M.P.A.S.) program emphasizes primary care medicine, particularly family medicine. It also offers elective clinical rotations in selected medical subspecialties. Students who complete the program are eligible to take the National Certifying Examination for Primary Care Physician Assistants, which they must complete successfully in order to register as physician assistants in the United States.

The Department of Physician Assistant Studies and Services is accredited by the Accreditation Review Commission on Education for the Physician Assistant and is a member of the Physician Assistant Education Association.

Master of Physician Assistant Studies

The Master of Physician Assistant Studies requires a minimum of 114 s.h. of credit. The curriculum spans 28 months and consists of a preclinical phase and a clinical phase. The program begins in August.

The Master of Physician Assistant Studies requires the following work.

Preclinical Curriculum

The M.P.A.S. program's preclinical phase is built on a triple-helix model whose three strands consist of clinical and professional skills (CAPS), mechanisms of health and disease (MOHD), and medicine and society (MAS). The strands are interwoven, assuring that their material is integrated and revisited throughout the preclinical phase, so that students' understanding and mastery of the material deepens progressively.

The preclinical curriculum consists of the following courses.

HUMAN ANATOMY AND FOUNDATIONS OF LIFE

ACB:8101 Medical Gross Human Anatomy involves complete dissection of the human body. Students learn to identify the human body's components and learn how their structures and locations relate to their functions. They also learn much of the language they will need in order to communicate accurately and specifically with patients and other physicians.

MED:8123 Foundations of Cellular Life covers genetics, embryology, molecular biology, biochemistry, cell biology, and histology. Students learn the molecular events required for cellular life and how cells grow and interact to form the basic tissues of the human body. This course provides the necessary framework students will need in order to begin the mechanisms of health and disease studies.

CLINICAL AND PROFESSIONAL SKILLS

The clinical and professional skills (CAPS) strand provides students with the knowledge, skills, and attitudes required for professional development and clinical excellence, including the sense of inquiry and lifelong habits of skill acquisition, self-assessment, and reflective practice. CAPS features developmental learning through increasingly challenging experiences across the curriculum, repeated practice opportunities, observation and feedback, and self-directed learning and reflection. CAPS requires the following three courses.

MED:8121 Clinical and Professional Skills I introduces students to concepts of clinical reasoning, communication, physical examination, and evidence-based clinical practice as well as the principles of biomedical ethics. The Longitudinal Clinical Mentor (LCM) program allows early clinical interactions and helps place classroom experiences into the context of patient care. Through interactions with students from other health sciences colleges, M.P.A.S. students begin to explore the interprofessional approach to caring for patients.

MED:8131 Clinical and Professional Skills II reinforces clinical reasoning concepts from MED:8121 and introduces
additional elements of clinical reasoning, which are practiced through interactions with standardized patients and through Longitudinal Clinical Mentor clinical visits. The varied experiences help students gain a deeper appreciation for issues in biomedical ethics. As part of interprofessional education, students focus on the strengths and barriers involved in providing comprehensive interdisciplinary patient care.

MED:8221 Clinical and Professional Skills III develops advanced clinical reasoning skills through focused patient encounters and interactions with special patient populations. Emphasis is on students’ ability to integrate and use concepts from the other curricular strands that are required for cost-conscious, patient-centered, interdisciplinary care.

MECHANISMS OF HEALTH AND DISEASE
The mechanisms of health and disease (MOHD) strand focuses on multisystem mechanisms. MOHD requires the following five courses.

MED:8124 Mechanisms of Health and Disease I covers normal and healthy processes within and among the mechanisms of oxygenation, metabolism, and genetics/development.

MED:8133 Mechanisms of Health and Disease II covers normal and healthy processes within and among the mechanisms of immunology/inflammation, locomotion/integument, and neuropsychiatry.

MED:8134 Mechanisms of Health and Disease III covers abnormalities or disruptions leading to disease within and among the mechanisms of oxygenation, metabolism, and genetics/development.

MED:8223 Mechanisms of Health and Disease IV covers abnormalities or disruptions leading to disease within and among the mechanisms of immunology/inflammation, locomotion/integument, and neuropsychiatry.

MED:8224 Mechanisms of Health and Disease Keystone provides a transition from classroom instruction in MED:8124, MED:8133, MED:8134, and MED:8223 to clinical practice. Foundational information from those courses is approached from the perspective of common clinical encounters. Students make diagnostic and management decisions about common important clinical problems using the foundational knowledge they gained from those courses.

MEDICINE AND SOCIETY
The medicine and society (MAS) strand teaches students about disease prevention, health promotion services, public health, epidemiology, health services organizations and delivery, and community dimensions of medical practice and patient safety.

FOUNDATIONAL CLINICAL EXPERIENCE
The foundational clinical experience consists of a six-week summer session that includes preclinical workshop material in cardiology and radiology. Students complete a two-week introduction to clinical medicine before beginning the clinical rotations. Foundational clinical experience requires the following five courses.

PA:8212 Fundamentals of EKG and ACLS for Physician Assistant Students 2 s.h.
PA:8213 Fundamentals of Radiology for Physician Assistant Students 1 s.h.
PA:8214 Fundamentals of Clinical Laboratory Medicine for Physician Assistant Students 1 s.h.
PA:8301 Seminar for Physician Assistant Students 1 s.h.
PA:8302 Physician Assistant Professional and Clinical Skills 1 s.h.

Clinical Curriculum
The program's second phase concentrates on clinical education. Students complete four weeks of preclinical workshops and rotations and a 36-week core of required primary care clinical rotations, including general internal medicine, surgery, family medicine, pediatrics, emergency medicine, gynecology, and psychiatry. Students then select eight weeks of electives, which may include rotations such as geriatrics, cardiology, dermatology, and orthopaedics.

The primary care clinical rotations are designed to provide instruction and experience in caring for patients in a way that enables students to integrate the knowledge, skills, behaviors, and attitudes they learned in the program’s didactic phase. Clinical training is provided at University of Iowa Hospitals and Clinics, the Iowa City Veterans Affairs Medical Center, the Veterans Affairs Central Iowa Health Care System and Broadlawns Medical Center in Des Moines, and other affiliated hospitals throughout Iowa. In elective rotations, students gain additional clinical experience through placement with selected preceptors involved in office-based practices, typically in medically underserved rural areas.

Students also complete a master's degree project as part of the clinical curriculum.

REQUIRED CLINICAL ROTATIONS
The following clinical rotations are required.

PA:8304 Emergency Medicine for Physician Assistant Students 4 s.h.
PA:8305 Gynecology for Physician Assistant Students 4 s.h.
PA:8306 Family Practice I for Physician Assistant Students 4 s.h.
PA:8307 Family Practice II for Physician Assistant Students 4 s.h.
PA:8308 General Surgery for Physician Assistant Students 6 s.h.
PA:8309 Internal Medicine for Physician Assistant Students 6 s.h.
PA:8310 Pediatrics for Physician Assistant Students 4 s.h.
Students select elective clinical rotations from these.

**ELECTIVE CLINICAL ROTATIONS**

Students select elective clinical rotations from these.

- **PA:8349 Occupational Medicine Elective** for Physician Assistant Students
- **PA:8350 Pediatrics (Neonatology) Elective** for Physician Assistant Students
- **PA:8351 Internal Medicine (Rheumatology) for Physician Assistant Students**
- **PA:8352 Medical Intensive Care for Physician Assistant Students**
- **PA:8353 International Medicine for Physician Assistant Students**
- **PA:8354 Interventional Radiology for Physician Assistant Students**
- **PA:8355 Gynecologic Oncology Elective** for Physician Assistant Students

**Admission**

Applicants must meet the admission requirements of the Graduate College; see the Manual of Rules and Regulations of the Graduate College.

Applicants must be citizens or permanent residents of the United States. They must have taken the Graduate Record Examination (GRE) General Test or the Medical College Admission Test (MCAT) no more than 10 years before they apply. Applicants whose first language is not English and who have not earned a master’s or doctoral degree from an accredited U.S. institution must score at least 93 (Internet-based) with a speaking score of at least 26 on the Test of English as a Foreign Language (TOEFL). Scores must be sent to the Department of Physician Assistant Studies and Services by the Educational Testing Service.

Applicants must hold a bachelor’s degree from an accredited institution in the United States and have a cumulative g.p.a. and a science g.p.a. of at least 3.00 on a 4.00 scale or a g.p.a. of at least 3.00 on their last 40 s.h. of college-level science course work. They must have completed preparatory science courses in organic and inorganic chemistry, introductory animal biology or zoology, and general statistics or biostatistics. They also must have completed an upper-level course in human or animal physiology (lower-level combined anatomy/physiology courses do not satisfy this requirement); a minimum of three upper-level natural science courses such as cell biology, cell physiology, endocrinology, genetics, histology, immunology, microbiology, molecular biology, neurobiology, and/or related disciplines; and an introductory biochemistry course (combined organic/biochemistry courses do not satisfy this requirement).

Applicants must have at least 1,000 clock hours of hands-on, direct patient health care experience.

The admissions committee gives special attention to applicants’ performance in science courses. Some successful applicants have had a g.p.a. of at least 3.70, both cumulative and in science; up to 141 s.h. of college credit, including at least 81 s.h. in the sciences; and more than 3,000 hours of clinical experience.

Satisfaction of the basic admission requirements does not ensure acceptance to the program. The admissions committee selects the applicants it considers best qualified. Previous health care experience involving direct patient contact is preferred. The committee requests interviews with the most qualified applicants.

Applications are accepted from April 16 to November 1 for entry the following August. Applicants must apply...
through the Central Application Service for Physician Assistants (CASPA). Application materials include three letters of recommendation, with one from an academic instructor and one from a health care supervisor; GRE or MCAT scores; and transcripts. The majority of prerequisite course requirements must be completed by the November 1 application deadline. All materials must be received by CASPA by the November 1 deadline.

Expenses
In addition to University of Iowa tuition and fees, students in the Department of Physician Assistant Studies and Services must purchase a laptop computer (specifications are given), their medical uniforms, and diagnostic equipment, an expense of approximately $4,000. Microscopes are not required.

Courses
PA:8209 Introduction to Medical History and Physical Examination for Physician Assistant Students
Development of skills vital to taking a comprehensive medical history, psychomotor skills, and physical examination techniques necessary for conducting a comprehensive physical exam.

PA:8210 Clinical Decision Making I
Review of basic concepts of research design and statistics as they apply to medical research literature; formation of a basis for sound, evidence-based, clinical decision making.

PA:8211 Clinical Decision Making II
Core concepts of evidence-based medicine; development of the knowledge and practical skills to search the medical literature for answers to clinical questions and critically appraise the evidence found.

PA:8212 Fundamentals of EKG and ACLS for Physician Assistant Students
Theory and practice with basic analysis of EKG strips and interpretation, including rhythm disturbances; completion of American Heart Association's Advanced Cardiac Life Support (ACLS) program.

PA:8213 Fundamentals of Radiology for Physician Assistant Students
Theory and practice for interpretation of radiographs including general radiology, body, chest, musculoskeletal, pediatrics, and neurology. Requirements: enrollment in physician assistant studies and services.

PA:8214 Fundamentals of Clinical Laboratory Medicine for Physician Assistant Students
Theory and practice of selected clinical laboratory techniques and procedures; emphasis on effective utilization of clinical laboratory in diagnosis and management of disease states. Requirements: enrollment in physician assistant studies and services.

PA:8200 Physician Assistant Clinical Second Year

PA:8300 Physician Assistant Clinical Second Year

PA:8301 Seminar for Physician Assistant Students
Knowledge and skills required for providing appropriate medical care to infants, children, and adolescents; initiation and promotion of interpersonal relationships.

PA:8311 Psychiatry for Physician Assistant Students 4 s.h.
Training in history and physical exams of psychiatry patients, including individual and family therapy, vocational testing and guidance, development of interviewing skills.

PA:8312 Long-Term Care for Physician Assistant Students 4 s.h.
Development of clinical knowledge and skill in diagnosing, treating, and performing procedures for patients of long-term care settings; knowledge of relevant conditions.

PA:8320 Dermatology Elective for Physician Assistant Students 3 s.h.
Recognizing dermatologic diseases and disorders, instituting appropriate management of patients with dermatologic problems.

PA:8321 Neurology Elective for Physician Assistant Students 3 s.h.
Performing general and neurological exams, establishing diagnosis, recommending lab studies, instituting appropriate management of common neurological diseases and disorders, recognizing the need for urgent treatment.

PA:8322 Obstetrics for Physician Assistant Students 3 s.h.
Proficiency in physical exam of OB patients; applying concepts of diagnostic techniques and therapy; following patients' course, including labor, delivery, and postpartum care.

PA:8323 Ophthalmology Elective for Physician Assistant Students 3 s.h.
Proficiency in recognizing ophthalmology problems; how to institute appropriate management of these conditions.

PA:8324 Otolaryngology Elective for Physician Assistant Students 3 s.h.
Proficiency in recognizing otolaryngology problems; how to institute appropriate management of these conditions; opportunity for involvement in varied surgical procedures.

PA:8325 Pediatric Elective for Physician Assistant Students 3 s.h.
Experience working with children and adolescents.

PA:8326 Radiology Elective for Physician Assistant Students 3 s.h.
Proficiency in systematic evaluation of normal and abnormal routine radiologic examinations; listing indications for special exam procedures, including details of prepping the patient.

PA:8327 Pediatric Elective (Bone Marrow Transplant) for Physician Assistant Students 3 s.h.
Basic clinical knowledge and skills for diagnosis, treatment, and management of pre- and post-bone-marrow transplant patients.

PA:8328 Pediatric (Cardiology) Elective for Physician Assistant Students 3 s.h.
Cardiovascular assessment and problem management of pediatric patients; experience with a range of acute, chronic, common, and rare cardiology diseases.

PA:8329 Psychiatry Elective for Physician Assistant Students 3 s.h.
Training in evaluation and treatment of psychiatry patients.

PA:8330 Surgery Elective for Physician Assistant Students 3 s.h.
Experience in a wide range of surgical problems, procedures, and treatments, including diagnosis, care and treatment, and postoperative courses of surgical patients.

PA:8331 Surgery Elective (Transplant/Organ Retrieval) for Physician Assistant Students 3 s.h.
Extensive experience in care of patients with end-stage organ failure; evaluation of potential transplant candidates, participation in surgical procedures on transplant service.

PA:8332 Surgery Elective (Burn Unit) for Physician Assistant Students 3 s.h.
Involvement in care on burn unit and in operating room; skills in burn debridement, grafting techniques, skin storage techniques, dressing changes, tub baths, and physical therapy procedures.

PA:8333 Surgery Elective (Cardiac Surgery) for Physician Assistant Students 3 s.h.
Development of technical skills in operating room; essentials of preoperative evaluation and postoperative management of cardiac surgical patient.

PA:8334 Orthopedics Elective for Physician Assistant Students 3 s.h.
Recognition of varied orthopedic problems and treatments; musculoskeletal diseases and disorders, both emergencies and common conditions, and how to establish appropriate management.

PA:8335 Internal Medicine Elective for Physician Assistant Students 3 s.h.
Training in varied internal medicine problems; recognition, appropriate treatment.

PA:8336 Internal Medicine (Cardiology) Elective for Physician Assistant Students 3 s.h.
Cardiovascular assessment and problem management; experience with wide range of acute, chronic, common, and rare diseases.

PA:8337 Internal Medicine (EKG) Elective for Physician Assistant Students 3 s.h.
Experience reading electrocardiograms, interpreting cardiac arrhythmias, performing and evaluating EKG stress tests.

PA:8338 Internal Medicine (Gastroenterology) Elective for Physician Assistant Students 3 s.h.
Experience with a wide range of gastrointestinal pathology; history and physical exams of gastrointestinal diagnostic procedures, follow-up care of patients through outpatient clinics.

**PA:8339 Internal Medicine (Oncology) Elective for Physician Assistant Students**
Experience to develop diagnostic skills in clinical oncology and gain familiarity with methods of staging common cancers; assistance in therapy and outpatient management of cancer patients.

**PA:8340 Internal Medicine (Geriatrics) Elective for Physician Assistant Students**
Familiarity with broad spectrum of medical conditions among the elderly; experience in history and physical exams, diagnosis of geriatric patients along with follow-up visits.

**PA:8341 Internal Medicine (Pulmonary) Elective for Physician Assistant Students**
Development of basic clinical knowledge and skills for diagnosis, treatment, and management of pulmonary diseases.

**PA:8342 Internal Medicine (Hospice) Elective for Physician Assistant Students**
Work on a hospice care team performing evaluation, treatment, and education of patients with terminal illnesses; dealing with the prospect of death.

**PA:8343 Internal Medicine (Infectious Disease) Elective for Physician Assistant Students**
Development of basic clinical knowledge and skills for diagnoses, treatment, and management of infectious diseases.

**PA:8345 Urology Elective for Physician Assistant Students**
Proficiency in managing patients with urologic conditions; skill in taking a urologic history, performing physical exams, interpreting laboratory studies and data.

**PA:8346 Family Practice Elective for Physician Assistant Students**
Proficiency in delivering ambulatory primary care.

**PA:8347 Gynecology Elective (Women’s Health) for Physician Assistant Students**
Experience in annual gynecologic exams, PAP screening, gynecology problems, contraception issues, STD screening and counseling, common gynecologic procedures.

**PA:8348 Migrant Health Elective for Physician Assistant Students**
Basic clinical knowledge and skills for diagnosis, treatment, and prevention of diseases, injuries, and conditions related to environmental exposure in migrant worker populations.

**PA:8349 Occupational Medicine Elective for Physician Assistant Students**
Basic clinical knowledge and skills for diagnosis, treatment, and prevention of work-related diseases, injuries, and conditions related to environmental exposure.

**PA:8350 Pediatrics (Neonatology) Elective for Physician Assistant Students**
Basic clinical knowledge and skill for diagnosis, treatment, and management of critically ill infants.

**PA:8351 Internal Medicine (Rheumatology) for Physician Assistant Students**
Basic clinical knowledge and skills for diagnosis, treatment, and management of rheumatologic diseases.

**PA:8352 Medical Intensive Care for Physician Assistant Students**
Basic clinical knowledge and skills for diagnosis, treatment, and management of critically ill patients.

**PA:8353 International Medicine for Physician Assistant Students**
Basic clinical knowledge and skills for diagnosis, treatment, and prevention of diseases, injuries, and conditions relevant to international medicine.

**PA:8354 Interventional Radiology for Physician Assistant Students**
Basic clinical knowledge and skills for diagnosis and treatment of conditions requiring interventional therapy.

**PA:8355 Gynecologic Oncology Elective for Physician Assistant Students**
Experience developing diagnostic skills in clinical gynecologic oncology, learning methods of staging specific cancers; and assisting in therapy and outpatient management of patients with varied cancers.

**PA:8356 Wilderness Medicine for Physician Assistant Students**
Four-week emergency medicine elective taken in conjunction with Carver College of Medicine; mix of didactic and experiential learning; ten-day trip to Colorado to learn about hypothermia, altitude medicine, search and rescue, field evaluation, treatment and evacuation of common back country injuries; lectures and simulations.
Psychiatry

Chair

- James Potash

Faculty: http://www.medicine.uiowa.edu/dept_primary_apr.aspx?appointment=Psychiatry
Web site: http://www.medicine.uiowa.edu/psychiatry/

The Department of Psychiatry teaches M.D. students, principally during their third year, and trains resident physicians for academic and clinical careers in psychiatry.

Residency Programs

The department offers a four-year training program approved by the Residency Review Committee of the American Medical Association. Training experiences are available at University of Iowa Hospitals and Clinics and at the Iowa City Veterans Affairs Medical Center. Additional experiences are available at affiliated institutions: Broadlawns Medical Center in Des Moines, the Iowa Medical and Classification Center at Oakdale, the Community Mental Health Center for Mid-Eastern Iowa in Iowa City, and the Independence Mental Health Institute (Iowa Department of Human Services).

The department also offers an approved two-year residency in child psychiatry. Fellowships in geriatrics and psychosomatic medicine are available after residency training.

Research

Department of Psychiatry staff members are involved in genetic and family studies of psychiatric disorders and research in genetic and biological psychiatry, neurochemistry, neuroimaging, neuropathology, neuropsychiatry, and psychosocial aspects of behavior.

The department’s students and residents have many research opportunities in psychiatry and in the basic science areas of neurochemistry, neuropathology, and electrophysiology. The clinical areas of psychology, child psychiatry, and psychotherapy also offer opportunities for research and further study to a limited number of students.

Courses

PSYC:8267 Psychiatric Epidemiology 3 s.h.
Population-based studies of psychiatric disorders and associated etiologic tools; diagnostic criteria used in psychiatric research, common structured interviews and rating scales; recent research relevant to common psychiatric disorders; experience writing a research idea using NIH PHS grant form. Offered spring semesters of even years. Prerequisites: EPID:4400. Recommendations: EPID:6400 or two years of resident training in psychiatry. Same as EPID:6670.

PSYC:8301 Clinical Psychiatry 4 s.h.
Requirements: third-year M.D. enrollment.

PSYC:8401 Adult Psychiatry, Pappajohn Pavilion 4 s.h.
Requirements: M.D. enrollment.

PSYC:8402 Child Psychiatry, Pappajohn Pavilion arr.
Roles of child psychiatry as a consultation service. Requirements: M.D. enrollment.

PSYC:8403 Adult Outpatient Psychiatry and Psychotherapy 2,4 s.h.
Diagnostic assessment, evaluation, treatment of psychiatric patients; exposure to both psychotherapeutic, psychopharmacologic treatments. Requirements: M.D. enrollment.

PSYC:8404 Women’s Wellness and Counseling Service 4 s.h.
Experience evaluating and treating patients with mental illness, with some emphasis on practitioner’s autonomy; four-week rotation. Requirements: psychiatry clerkship.

PSYC:8405 Subinternship in Medical Psychiatry 4 s.h.
Hands-on experience in evaluation and treatment of patients with combined medical and psychiatric disease; decisions regarding appropriate consultations, diagnostic tests, treatment; etiology and pathophysiology. Requirements: M.D. enrollment.

PSYC:8407 Advanced Clinical Psychiatry, Des Moines 4 s.h.
Work in adult psychiatry setting and/or child-adolescent psychiatry setting for a four-week rotation; optional participation in psychiatric emergency/crisis care team, substance abuse clinics, and/or ECT treatment sessions.

PSYC:8408 Subinternship in Mood/Psychotic Disorders 4 s.h.
Subinternship in adult psychiatry; experiences that maximize autonomy and responsibility; inpatient rotation focuses on one subspecialty area (psychotic disorders or mood disorders); emphasis on substantial medical comorbidity; assess and address medical and psychiatric needs of assigned patients in a collaborative and integrative fashion; assess and manage patients independently at the level of a psychiatry intern, reporting directly to the attending; call is required; didactic curriculum focuses on critical appraisal of medical literature. Prerequisites: PSYC:8301. Requirements: fourth-year M.D. enrollment.

PSYC:8409 Eating Disorders 2,4 s.h.
Inpatient rotation; emphasis on co-occurring psychiatric and comorbid medical conditions associated with eating disorders; patient assessment and management at an advanced level; direct patient care and engagement in clinical decision making for complex patients with substantial comorbidity; call is required; student experience maximizes autonomy and responsibility; didactic curriculum; focus on critical appraisal of relevant medical literature. Prerequisites: PSYC:8301. Requirements: fourth-year M.D. enrollment.

PSYC:8410 Intellectual Disability 2,4 s.h.
In-depth two week clinical experience in the interdisciplinary approach to assessment and management of individuals with intellectual disability. Requirements: M.D. enrollment.
PSYC:8411 Substance Abuse 2,4 s.h.
In-depth clinical experience in assessment and management of individuals with alcohol and drug abuse. Requirements: M.D. enrollment.

PSYC:8412 Emergency Psychiatry 2,4 s.h.
In-depth clinical experience in assessment and management of acute psychiatric illness under supervision of faculty with expertise in care within this setting; clinical experiences centered in emergency department at University of Iowa Hospitals and Clinics. Prerequisites: PSYC:8301. Requirements: third- or fourth-year M.D. enrollment.

PSYC:8450 Continuity of Care in Psychiatry 4 s.h.
Experience in Psychiatry Continuity of Care Clinic; maximizes autonomy and responsibility in an outpatient continuous care setting. Requirements: fourth-year M.D. enrollment.

PSYC:8497 Research Psychiatry arr.
Experience, training in practical application of scientific methodology; work with research project at Psychiatric Service or affiliated cooperating research centers. Requirements: fourth-year M.D. enrollment.

PSYC:8498 Psychiatry On Campus arr.
Arranged by student with departmental approval. Requirements: M.D. enrollment.

PSYC:8499 Psychiatry Off Campus arr.
Requirements: M.D. enrollment.
Radiation Oncology

Chair
- John M. Buatti

Faculty: http://www.medicine.uiowa.edu/dept_primary_apr.aspx?appointment=Radiation%20Oncology
Web site: http://www.medicine.uiowa.edu/radiationoncology/

Radiation oncology specializes in the delivery of radiation treatments for cancer patients. It includes treatments with linear accelerators as well as isotopes and temporary and permanent surgically implanted sources. Radiation oncologists also use these methods to treat some benign diseases, such as Graves' ophthalmopathy and trigeminal neuralgia.

The Department of Radiation Oncology is dedicated to educating undergraduate and graduate students, M.D. and other health professions students, and residents. Its faculty members provide instruction for Doctor of Philosophy students in the Free Radical and Radiation Biology (p. 1040) Program through their participation in FRRB:3110 Medical Physics I, FRRB:3215 Medical Physics II, FRRB:5000 Radiation Biology, FRRB:7000 Redox Biology and Medicine, and FRRB:7001 Molecular and Cellular Biology of Cancer.


The department provides a four-year physician residency training program in radiation oncology that includes clinical care and education. It also has a residency program in medical physics. M.D. students can elect a four-week radiation oncology rotation and/or a two-week multidisciplinary cancer care elective. Nursing students, dental residents, and fellows in gynecologic oncology and in adult and pediatric hematology and oncology complete rotations in the department.

The department also offers specialized research projects and sponsors postdoctoral students in biology, physics, and clinical disciplines by arrangement with the instructor or mentor.

Courses

RADO:8401 Radiation Oncology 2,4 s.h.
Integration of clinical oncology, physics, and cancer biology; clinical work with faculty mentors; experience in clinical evaluation, technical physics, biological application.

RADO:8498 Radiation Oncology On Campus arr.
Development of new markers for normal tissue toxicity following radiation treatment.
Radiation Sciences

Director, undergraduate program
• Anthony Knight

Director, student affairs
• Jennifer Maiers

Director, radiologic technology program
• Jean Wiese

Director, diagnostic medical sonography program
• Stephanie Ellingson

Director, radiation therapy program
• Mindi TenNapel

Undergraduate major: radiation sciences (B.S.)
Web site: http://www.medicine.uiowa.edu/radsci/

Radiation sciences professionals work with physicians to gather accurate patient information for diagnosis, treatment, and/or research of disease and injury. They provide direct patient care, produce quality images, and deliver treatment using a variety of radiation sources. The radiation sciences professional must apply knowledge, skill, and mature judgment while operating complex equipment safely and efficiently.

The University of Iowa's radiation sciences educational programs are designed to provide students with opportunities for intellectual, professional, and social growth. Students learn with faculty members and instructors who are committed to radiation sciences education.

Radiation sciences is one of two undergraduate majors in the field of medical imaging offered by the Carver College of Medicine. It encompasses radiologic technology, computed tomography, magnetic resonance imaging, cardiovascular interventional, diagnostic medical sonography, and radiation therapy programs. The other undergraduate major in medical imaging is nuclear medicine technology; see Nuclear Medicine Technology (p. 1060) in the Catalog.

The Carver College of Medicine is located on the University of Iowa health sciences campus, which includes University of Iowa Hospitals and Clinics, one of the nation's largest university-owned teaching hospitals. For information about the college's academic programs and resources, see Carver College of Medicine (p. 1005) in the Catalog.

Undergraduate Program of Study

• Major in radiation sciences (Bachelor of Science)

The Radiation Sciences Program offers two paths toward completing the major: an on-campus program for students who have not completed a radiation sciences modality (see "Bachelor of Science" below) and an online program for registered radiologic technologists who would like to earn a Bachelor of Science degree by distance education; see "RT to B.S. (Online)" later in this Catalog section.

Undergraduate study in radiation sciences is guided by the academic rules and procedures outlined under "Undergraduate Programs of Study" in the Carver College of Medicine (p. 1005) section of the Catalog.

Bachelor of Science

The Bachelor of Science with a major in radiation sciences requires a minimum of 120 s.h. Work for the degree includes a set of courses that are prerequisite to entering the radiation sciences major, completion of one of several radiation sciences professional programs, and elective course work sufficient to complete the minimum of 120 s.h. required for graduation. Students must complete the radiation sciences professional program at the University of Iowa.

Admission to the radiation sciences major is competitive. Students who wish to enter the major must first be admitted to the University of Iowa as College of Liberal Arts and Sciences (CLAS) students with a radiation sciences interest. As CLAS students, they must apply to the radiation sciences professional program of their choice by January 15 of the year in which they wish to enter it (see "Radiation Sciences Professional Programs" below). Students who are accepted enter the professional program, the radiation sciences major, and the Carver College of Medicine the following fall semester.

Applicants for admission to the University of Iowa whose first language is not English are strongly encouraged to complete the University of Iowa English proficiency evaluation and satisfy the University's English proficiency requirements before they apply to a professional program. Students must have permission to register for a full academic load before they may be admitted to a radiation sciences professional program.

The radiation sciences major requires students to complete a minimum of two years of a high school world language prior to admission.

For additional information on UI admission requirements, contact the University's Office of Admissions.

First-year and transfer applicants who are admitted to CLAS as radiation sciences interest students must complete all courses that are prerequisite to the radiation sciences major (including approved transfer equivalents) by June 1 before they may begin one of the radiation sciences professional programs and enter the major. Prerequisite courses vary slightly depending on which professional program a student wishes to enter.

Students who have declared a radiation sciences interest but have not yet applied and been accepted to a professional program are advised at the University's Academic Advising Center. After they have been accepted to a professional program, they are advised by the Radiation Sciences Program.

When students complete the professional multimodality program, they are eligible to take national certification exams for their program's specialty area(s). Once they have completed the professional program and all other requirements for graduation, they are granted a Bachelor of Science degree.

The Bachelor of Science with a major in radiation sciences requires the following work.
PREREQUISITES TO THE RADIATION SCIENCES MAJOR

Students who wish to enter a radiologic technology or diagnostic medical sonography professional program must complete the following prerequisite courses (25-27 s.h.) before they may enter the program and the major. Students who wish to enter the radiation therapy professional program must complete a total of 60 s.h. of college course work, including the following prerequisites, before they may enter the program and the major.

Rhetoric:

RHET:1030 Rhetoric 4 s.h.

Anatomy—one of these:

ACB:1199 Human Anatomy and Basic Physiology for Radiation Science 4 s.h.
ACB:3110 Principles of Human Anatomy 3 s.h.
ACB:3113 Human Anatomy Online 4 s.h.
HHP:1100 Human Anatomy 3 s.h.

Natural sciences—one of these (students who wish to enter a diagnostic medical sonography program or the radiation therapy program must choose PHYS:1400 or PHYS:1511):

BIOL:1140 Human Biology 4 s.h.
CHEM:1070 General Chemistry I 3 s.h.
CHEM:1110 Principles of Chemistry I 4 s.h.
HHP:1300 Fundamentals of Human Physiology 3 s.h.
HHP:3500 Human Physiology 3 s.h.
PHYS:1400 Basic Physics 3-4 s.h.
PHYS:1511 College Physics I 4 s.h.

Quantitative or formal reasoning—one of these:

MATH:1020 Elementary Functions 4 s.h.
MATH:1440 Mathematics for the Biological Sciences 4 s.h.

Social science:

PSY:1001 Elementary Psychology 3 s.h.

Medical terminology:

CLSA:3750 Medical and Technical Terminology 2 s.h.

Culture, society, and the arts—3 s.h. each in two of these areas (total of 6 s.h.):

Historical Perspectives approved course work 3 s.h.
International and Global Issues approved course work 3 s.h.
Literary, Visual, and Performing Arts approved course work 3 s.h.
Values, Society, and Diversity approved course work 3 s.h.

See General Education Program (p. 313) (College of Liberal Arts and Sciences) in the Catalog for approved courses in the culture, society, and arts areas listed above.

RECOMMENDED PRE-MAJOR WORK

The Radiation Sciences Program recommends that before students enter a radiation sciences professional program and the major, they job-shadow a professional who works in their area of interest, gain hands-on experience with patient care, and complete the following additional preparatory courses.

This course:

RSP:1100 Introduction to the Radiation Sciences 1 s.h.

One of these:

CS:1020 Principles of Computing 3 s.h.
CS:1110 Introduction to Computer Science 3 s.h.

One of these:

STAT:1020 Elementary Statistics and Inference 3 s.h.
STAT:3510 Biostatistics 3 s.h.
STAT:4143 Introduction to Statistical Methods 3 s.h.

For students interested in entering the radiation therapy professional program, one of these sequences:

CHEM:1070 & CHEM:1080 General Chemistry I-II 6 s.h.
CHEM:1110 & CHEM:1120 Principles of Chemistry I-II 8 s.h.

ELECTIVES

In order to earn the minimum of 120 s.h. required for graduation, students may need to complete elective course work in addition to the prerequisite course work listed above and one of the professional programs in medical imaging described below. They should plan their elective courses in consultation with their advisor.

RADIATION SCIENCES PROFESSIONAL PROGRAMS

Students must complete one of the following radiation sciences professional programs at University of Iowa Hospitals and Clinics. Each program offers modality-specific didactic and supervised clinical education courses. Graduates of the professional programs and associated internships are eligible to take one or more certification exams.

The radiologic technology programs and diagnostic medical sonography programs last three years, and the radiation therapy program lasts two years. Each program begins in fall.

Students must apply to the program of their choice by January 15 of the year in which they intend to enter the program.

Admission to all radiation sciences professional programs is competitive; each program accepts a limited number of students. In addition to the prerequisite courses listed above, students must have earned a cumulative college g.p.a. of at least 2.50 prior to professional program admission.

Radiologic Technology and Computed Tomography

The radiologic technology component of this program provides education in pathology, radiation biology, radiation protection, patient care, and ethics. Students learn about radiographic procedures, imaging, and evaluation. They become acquainted with imaging equipment, study quality assurance, and participate in supervised clinical education in radiography and computed
tomography (CT). The computed tomography component concentrates on sectional anatomy, single and multislice CT, electron beam CT, physiologic and 3-D imaging, CT simulation, physics and imaging, and procedures and pathology.

Upon completing the program, graduates are eligible to take the national certification exams in radiography and computed tomography.

Students typically apply to this three-year program during their first year and begin it in fall of their sophomore year. Application deadline is January 15.

Radiologic Technology and Magnetic Resonance Imaging

The radiologic technology component of this program provides education in pathology, radiation biology, radiation protection, patient care, and ethics. Students learn about radiographic procedures, imaging, and evaluation. They become acquainted with imaging equipment, study quality assurance, and participate in supervised clinical education in radiography and magnetic resonance imaging (MRI). The magnetic resonance imaging component offers intensive study and practice in MRI, including patient care procedures, pathophysiology, physics, sectional anatomy, and instrumentation.

Upon completing the program, graduates are eligible to take the national certification exams in radiography and magnetic resonance imaging.

Students typically apply to this three-year program during their first year and begin it in fall of their sophomore year. Application deadline is January 15.

Radiologic Technology and Cardiovascular Interventional

The radiologic technology component of this program provides education in pathology, radiation biology, radiation protection, patient care, and ethics. Students learn about radiographic procedures, imaging, and evaluation. They become acquainted with imaging equipment, study quality assurance, and participate in supervised clinical education in radiography, cardiac interventional, and peripheral/neurological interventional. The cardiovascular interventional component concentrates on imaging equipment; pharmacology; sterile techniques; cardiac monitoring; vascular anatomy and physiology; cardiovascular, peripheral, and neurological procedures and pathology; therapeutic intervention techniques; and digital angiography.

Upon completing the program, graduates are eligible to take the national certification exams in radiography, vascular interventional technology, and cardiac interventional technology.

Students typically apply to this three-year program during their first year and begin it in fall of their sophomore year. Application deadline is January 15.

Diagnostic Medical Sonography and General and Vascular Sonography

The diagnostic medical sonography program and general and vascular sonography provides a multispecialty education in obstetrical, abdominal, and vascular sonography (ultrasound imaging). Students learn about sonographic imaging and evaluation, hemodynamics and Doppler evaluation, sonography equipment, sectional anatomy, pathology, patient care, medical ethics, and quality assurance methods. They become proficient in using sonographic imaging equipment and in performing obstetrical and gynecological, abdominal, and vascular sonographic procedures, including invasive procedures, emergency exams, and 3-D imaging. They also participate in supervised clinical education. Elective courses are available in neurosonography and breast sonography.

Upon completing the program, graduates are eligible to take the national certification exams in diagnostic medical sonography in the specialty areas of obstetrics and gynecology, abdomen, and vascular technology.

Students typically apply to this three-year program during their first year and begin it in fall of their sophomore year. Application deadline is January 15.

Diagnostic Medical Sonography and Cardiac and Vascular Sonography

The diagnostic medical sonography program and cardiac and vascular sonography provides a multispecialty education in cardiac (echocardiography) and vascular sonography (ultrasound imaging). Students learn about sonographic imaging and evaluation, hemodynamics and Doppler evaluation, sonography equipment, sectional anatomy, pathology, patient care, medical ethics, and quality assurance methods. They become proficient in using sonographic imaging equipment and in performing cardiac and vascular sonographic procedures, including invasive procedures, emergency exams, and 3-D imaging. They also participate in supervised clinical education. Elective courses are available in neurosonography and breast sonography.

Upon completing the program, graduates are eligible to take the national certification exams in diagnostic medical sonography in the specialty areas of cardiac (echocardiography) and vascular technology.

Students typically apply to this three-year program during their first year and begin it in fall of their sophomore year. Application deadline is January 15.

Radiation Therapy and Computed Tomography

The radiation therapy professional program teaches theory and techniques of radiation therapy technology, with emphasis on competence in areas of oncology treatment planning, treatment delivery, dosimetry, and use of megavoltage radiation-producing equipment to administer treatment. Students participate in clinical education in radiation therapy. The computed tomography (CT) portion of this program concentrates on sectional anatomy, single and multislice CT, electron beam CT, physiologic and 3-D imaging, CT simulation, physics and imaging, and procedures and pathology.

Upon completing the program, graduates are eligible to take the national certification exam in radiation therapy. Students will have completed the course work but not the clinical component to take the national certification exam in computed tomography.

Students typically apply to this two-year program during their sophomore year and begin it in fall of their junior year. Application deadline is January 15.

RT to B.S. (Online)

The RT to B.S. is an online program designed for registered radiologic technologists who wish to earn a Bachelor of
Science degree with a major in radiation sciences by distance education. The program requires a minimum of 120 s.h. Students are awarded 60 s.h. of credit for the completed radiologic technology program plus course work that is prerequisite to entering the major. Upon admission to the major, students complete an online modality, advanced courses, and electives to complete the credit required for graduation.

Students choose one of three online modalities: cardiovascular interventional (CVI), computed tomography (CT), or magnetic resonance imaging (MRI). The modalities do not require an internship.

In order to be admitted to the radiation sciences major, students must pass the American Registry of Radiologic Technologists (ARRT) radiography board certification exam. They also must have completed all course work prerequisite to entering the major with a g.p.a. of at least 2.50; see "Prerequisites to the Radiation Sciences Major" under "Bachelor of Science" above. Students may count approved transfer credit toward the required prerequisites; learn more by visiting Transfer Courses in ISIS.

Once students are admitted to the Carver College of Medicine and the radiation sciences major, they must complete at least 30 s.h. of University of Iowa course work: two advanced courses (6 s.h.), an online modality (19-25 s.h., depending on the modality), and sufficient elective course work to complete the 120 s.h. of credit required for graduation.

**ADVANCED COURSES**

Management and leadership—the online section of one of these:

- COMM:1819 Organizational Leadership 3 s.h.
- MGMT:2100 Introduction to Management 3 s.h.
- MGMT:3500 Nonprofit Organizational Effectiveness I 3 s.h.

Statistics—the online section of one of these:

- STAT:1020 Elementary Statistics and Inference 3 s.h.
- STAT:4143 Introduction to Statistical Methods 3 s.h.

**ONLINE MODALITY**

Students complete one of the following three online modalities.

**Cardiovascular Interventional**

The cardiovascular interventional online modality requires the following course work (total of 23 s.h.).

- RSCI:4110 Vascular Anatomy 3 s.h.
- RSCI:4120 CVI Principles 4 s.h.
- RSCI:4130 Electrocardiogram and Hemodynamics 3 s.h.
- RSCI:4140 CVI Peripheral Procedures and Pathology 3 s.h.
- RSCI:4150 CVI Neurology and Nonvascular Procedures and Pathology 3 s.h.
- RSCI:4160 CVI Cardiac Procedures and Pathology 4 s.h.
- RSCT:4100 Sectional Anatomy for Imaging Sciences 3 s.h.

**Computed Tomography**

The computed tomography online modality requires the following course work (total of 19 s.h.).

- RSCI:4110 Vascular Anatomy 3 s.h.
- RSCT:4100 Sectional Anatomy for Imaging Sciences 3 s.h.
- RSCT:4110 CT/MRI Pathology 3 s.h.
- RSCT:4120 Computed Tomography Procedures I 3 s.h.
- RSCT:4125 Computed Tomography Procedures II 3 s.h.
- RSCT:4130 Computed Tomography Physical Principles and QC 4 s.h.

**Magnetic Resonance Imaging**

The magnetic resonance imaging online modality requires the following course work (total of 25 s.h.).

- RSCI:4110 Vascular Anatomy 3 s.h.
- RSCT:4100 Sectional Anatomy for Imaging Sciences 3 s.h.
- RSCT:4110 CT/MRI Pathology 3 s.h.
- RSMR:4110 Fundamentals for the MRI Technologist 3 s.h.
- RSMR:4120 MRI Procedures I 4 s.h.
- RSMR:4130 MRI Procedures II 3 s.h.
- RSMR:4140 MRI Acquisition and Principles I 3 s.h.
- RSMR:4150 MRI Acquisition and Principles II 3 s.h.

**ELECTIVES**

Students choose elective course work to complete the 120 s.h. required for graduation.

**Courses**

**Cardiovascular Interventional Program**

**RSCI:4110 Vascular Anatomy** 3 s.h.

Normal arterial and venous anatomy of the circulatory system, illustrated through angiographic, magnetic resonance imaging (MRI), and computed tomography (CT) images; common variants. Prerequisites: ACB:3110 or ACB:3113 or HHP:1100 or ACB:1199.

**RSCI:4120 CVI Principles** 4 s.h.

Imaging and accessory equipment for vascular interventional and cardiac interventional procedures; imaging equipment quality control; fundamental principles of vascular and cardiac procedures; patient preparation and care, radiation safety, contrast medium, pharmacology, and sedation. Corequisites: RSCI:4110. Requirements: acceptance to B.S. radiation science RT/CVI track or ARRT primary RT certification.

**RSCI:4130 Electrocardiogram and Hemodynamics**

ECG analysis, hemodynamic principles and waveform analysis, cardiac output, vascular resistance, calculations of stenotic valves. Prerequisites: ACB:3110 or ACB:3113 or HHP:1100 or ACB:1199.

**RSCI:4140 CVI Peripheral Procedures and Pathology** 3 s.h.
Angiographic and interventional procedures of the abdomen, thorax, and upper and lower extremities; associated pathologies. Prerequisites: RSCI:4110. Corequisites: RSCI:4120, if not taken as a prerequisite. Requirements: RSCI:4110 or three months CVI experience.

**RSCI:4150 CVI Neurology and Nonvascular Procedures and Pathology** 3 s.h.
Angiographic and interventional procedures of the head and neck; associated pathologies. Prerequisites: RSCI:4110. Corequisites: RSCI:4120, if not taken as a prerequisite. Requirements: RSCI:4110 or three months CVI experience.

**RSCI:4160 CVI Cardiac Procedures and Pathology** 4 s.h.
Cardiac diagnostic and interventional procedures; associated pathologies. Prerequisites: RSCI:4110. Corequisites: RSCI:4120 and RSCI:4130, if not taken as prerequisites. Requirements: RSCI:4110 or three months CVI experience.

**RSCI:4170 Cardiac Interventional Clinical Internship** 4.6 s.h.
Scheduled cardiac-interventional clinical time at UI Hospitals and Clinics and Mercy Hospital, Iowa City; rotations in adult cardiac, electrophysiology, and pediatric catheterization; competency and objective-based education provided with clinical performance evaluations and constructive feedback from CI staff and clinical coordinator; clinical coordinator facilitates schedules, rotations, learning objectives, evaluations, and competencies. Corequisites: RSCI:4130 and RSCI:4160, if not taken as prerequisites. Requirements: acceptance to B.S. radiation sciences RT/CT track.

**RSCI:4180 Vascular Interventional Clinical Internship** 4.6 s.h.
Scheduled vascular-interventional clinical time at UI Hospitals and Clinics; labs specialize in peripheral, neuro- and non-vascular procedures; competency and objective-based education; clinical performance evaluations providing constructive feedback from VI staff and clinical coordinator; clinical coordinator facilitates schedules, rotations, learning objectives, evaluations, and competencies. Corequisites: RSCI:4140 and RSCI:4150, if not taken as prerequisites. Requirements: acceptance to B.S. radiation sciences RT/CT track.

**RSCI:4190 CVI Clinical Internship** 2 s.h.
Introduction to VI and CI labs, including basic set up, equipment, and procedures; preparation to spend more concentrated time in each area for future internships; provides 192 hours of clinical experience over a 12-week period. Requirements: acceptance to radiation sciences RT/CTV degree track or CVI clinical internship.

**Computed Tomography Program**

**RSCT:4100 Sectional Anatomy for Imaging Sciences** 3 s.h.
Sectional anatomy identifiable on computed tomography and magnetic resonance imaging, including transverse, coronal, and sagittal planes. Prerequisites: ACB:3110 or ACB:3113 or HHP:1100 or ACB:1199.

**RSCT:4105 Computed Tomography Clinical Internship I** 1.6 s.h.
Clinical internship scheduled at UI Hospitals and Clinics; rotation through CT scanners, 3-D lab, and radiation therapy departments; competency and objective-based education with required clinical performance evaluations; clinical coordinator facilitates schedules, rotations, learning objectives, evaluations, and competencies; experience facilitated by CT technologists, radiologists, residents, and coordinator; participation in routine and advanced CT scans; performance expectations become progressively higher as student gains experience and skills. Requirements: acceptance to B.S. radiation sciences RT/CT track.

**RSCT:4110 CT/MRI Pathology** 3 s.h.
Common pathological conditions found in CT and MRI images; protocol appearance variations; units of CNS, musculoskeletal, neck/thorax, and abdominopelvic pathology; textbook readings, in-class discussions, special projects including case studies and presentations. Requirements: concurrent enrollment in RSCT:4100, if not taken as a prerequisite, or at least 3 months fulltime CT/ MRI clinical experience.

**RSCT:4115 Computed Tomography Clinical Internship II** 3 s.h.
CT scanners, 3-D lab, and radiation therapy department rotation at University of Iowa Hospitals and Clinics; competency and objective-based education with required clinical performance evaluations; clinical coordinator facilitates schedule, rotations, learning objectives, evaluations, and competencies; experience facilitated by CT technologists, radiologists, residents, and coordinator; participation in routine and advanced CT scans; performance expectations become progressively higher as students gain experience and skills. Prerequisites: RSCT:4105.

**RSCT:4120 Computed Tomography Procedures I** 3 s.h.
Computed tomography procedures of the head, neck, thorax, mediastinum, abdomen, and pelvis; positioning techniques, patient preparation, monitoring and care, indications and contraindications for procedures; contrast media usage; basic protocol information with adjustments to tailor procedures for patient's indications; brief units on patient care relevant to CT; CT parameters and equipment. Corequisites: RSCT:4100. Requirements: acceptance to B.S. radiation sciences RT/CT track or ARRT primary certification in radiologic technology, nuclear medicine, or radiation therapy.

**RSCT:4125 Computed Tomography Procedures II** 3 s.h.
Imaging information in musculoskeletal exams, 3-D reconstruction, CTAs; cardiac, including gating, biopsies, drains, post-myelography, radiation therapy planning, and 4-D imaging; CT arthrography, PET/CT, SPECT/CT, virtual colonoscopy; procedure indications and contraindications, patient and room preparation, positioning techniques, contrast media usage, and scan parameters; basic protocol information and how to tailor procedures to a patient's indications. Prerequisites: RSCT:4120. Corequisites: RSCI:4110, if not taken as a prerequisite.

**RSCT:4130 Computed Tomography Physical Principles and QC** 4 s.h.
Physical principles and instrumentation; historical development and evolution of CT; characteristics of radiation, beam attenuation, linear attenuation coefficients, tissue characteristics, Hounsfield numbers, data acquisition, image manipulation techniques, tube configuration, collimation design and function, detectors, image quality factors, functions of CT computer and array processor; image processing and display examined from data acquisition through postprocessing and archiving; radiation protection practices and QC. Requirements: acceptance to B.S. radiation sciences RT/CT degree track or ARRT primary certification in radiologic technology, nuclear medicine, or radiation therapy.

**RSMR:4140 MRI Procedures II**
MRI techniques related to neck, thorax, breast, abdomen, and pelvis; specific clinical applications; available coils and their use; considerations in imaging parameters; specific choices in protocols and positioning criteria. Prerequisites: RSMR:4120.

**RSMR:4140 MRI Acquisition and Principles I**
Physics and hardware used in obtaining a magnetic resonance signal, including magnetism, NMR signal production, tissue characteristics, spatial localization, pulse sequencing, imaging parameters and options, and special applications; exploration of skills useful in maximizing MR image quality. Prerequisites: RSMR:4110. Requirements: concurrent registration in RSMR:4110, if not taken as a prerequisite; or three months MRI experience.

**RSMR:4150 MRI Acquisition and Principles II**
Advanced MRI techniques; MR angiography and further investigation of fast image acquisition sequences; overview of MR magnets, installation, operation, and facility design; computers and digital image acquisition as they apply to MR; outline of quality assurance procedures. Prerequisites: RSMR:4140.

**RSMR:4160 MRI Clinical Internship I**
MRI clinical internship scheduled at UI Hospitals and Clinics; rotation through each MRI department scanning room; competency and objective-based education with required clinical performance evaluations; clinical preceptor facilitates schedules, rotations, learning objectives, evaluations, and competencies; experience facilitated by MRI technologists, radiologists, residents, and preceptor; participation in routine and advanced MRI scans; performance expectations become progressively higher as students gain experience and skills. Prerequisites: RSMR:4110, if not taken as a prerequisite.

**RSMR:4170 MRI Clinical Internship II**
MRI clinical internship scheduled at UI Hospitals and Clinics; rotation through each MRI department scanning room; competency and objective-based education with required clinical performance evaluations; clinical preceptor facilitates schedules, rotations, learning objectives, evaluations, and competencies; experience facilitated by MRI technologists, radiologists, residents, and preceptor; participation in routine and advanced MRI scans; performance expectations become progressively higher as student gains experience and skills. Prerequisites: RSMR:4110. Corequisites: RSMR:4120 and RSMR:4140, if not taken as prerequisites. Requirements: acceptance to B.S. radiation sciences RT/MRI track.

**Magnetic Resonance Imaging Program**

**RSMR:4110 Fundamentals for the MRI Technologist**
Care-giving skills specific to patients undergoing MRI examinations, including techniques in effectively communicating for safety and comfort; maintaining patient and personnel safety; patient preparation, monitoring, and venipuncture; technologist's role in a wide variety of MRI examinations and patient conditions. Prerequisites: RSMR:4110. Requirements: acceptance to B.S. radiation sciences RT/MRI track or ARRT primary certification in radiologic technology, nuclear medicine, or radiation therapy; and acceptance to CT internship.

**RSMR:4120 MRI Procedures I**
Imaging techniques related to central nervous and musculoskeletal systems; specific clinical applications; available coils and their use; considerations in imaging parameters; specific choices in protocols and positioning criteria; anatomical structures and the plane that best demonstrates anatomy; signal characteristics of normal and abnormal structures. Prerequisites: RSCT:4100 and RSMR:4110. Requirements: concurrent registration in RSMR:4110, if not taken as a prerequisite; or three months MRI experience.
RSMR:4175 MRI Clinical Internship III 4 s.h.
Rotation through MRI department scanning rooms at University of Iowa Hospitals and Clinics; competency and objective-based education with required clinical performance evaluations; clinical preceptor facilitates schedules, rotations, learning objectives, evaluations, and competencies; experience facilitated by MRI technologists, radiologists, residents, and preceptor; participation in routine and advanced MRI scans; performance expectations become progressively higher as students gain experience and skills. Prerequisites: RSMR:4170.

Diagnostic Medical Sonography Program

RSMS:3100 Cardiac Sonography I 3 s.h.
Normal sonographic anatomy, exam protocols, imaging techniques, and basic pathology of human heart. Prerequisites: RSCT:4100. Corequisites: RSMS:3110, if not taken as a prerequisite. Requirements: acceptance to radiation sciences MS degree track or successful completion of a two-year radiologic technology program.

RSMS:3101 Cardiac Sonography I Lab 1 s.h.
Simulated application of basic sonographic cardiac imaging; clinical history analysis. Corequisites: RSMS:3100. Requirements: acceptance to radiation sciences MS degree track.

RSMS:3110 Foundations of Sonography 3 s.h.
Sonography history, ergonomics, terminology, image orientation; basic theories of sound waves, echo production, transducers, equipment operation, body imaging, Doppler, hemodynamics. Requirements: PHYS:1400 or radiologic technology program physics course or diagnostic medical sonography physics course.

RSMS:3111 Foundations of Sonography Lab 1 s.h.
Sonography history, ergonomics, terminology, image orientation; basic theories of sound waves, echo production, transducers, equipment operation, body imaging, Doppler, and hemodynamics. Corequisites: RSMS:3110.

RSMS:3115 Diagnostic Medical Sonography Clinical Internship I 2 s.h.
Development of basic understanding of sonography clinical environment and professional practice standards; experience in health care setting. Requirements: acceptance to radiation sciences MS degree track.

RSMS:3120 Abdominal Sonography I 3 s.h.
Embryology, anatomy, and physiology of various abdominal structures imaged sonographically; abdominal vasculature, hepatobiliary system, pancreas, urinary system, adrenals, spleen, male anatomy; proper sonographic imaging techniques, including appearance of normal anatomy, imaging protocol, proper instrument settings. Prerequisites: RSCT:4100. Corequisites: RSMS:3110, if not taken as a prerequisite. Requirements: successful completion of a two-year radiologic technology or diagnostic medical sonography program.

RSMS:3121 Abdominal Sonography I Lab 1 s.h.
Simulated application of basic sonographic abdominal imaging, normal anatomy, examination protocols, and clinical history analysis. Corequisites: RSMS:3120. Requirements: acceptance to radiation sciences MS degree track.

RSMS:3130 Obstetrical and Gynecological Sonography I 3 s.h.
Embryology, anatomy, and physiology of the female reproductive system and developing fetus; proper sonographic imaging techniques, including appearance of normal anatomy, imaging protocol, proper instrument settings. Prerequisites: RSCT:4100. Corequisites: RSMS:3110, if not taken as a prerequisite. Requirements: successful completion of a two-year radiologic technology or diagnostic medical sonography program.

RSMS:3131 Obstetrical and Gynecological Sonography I Lab 1 s.h.
Simulated application of basic sonographic obstetrical and gynecological imaging; clinical history analysis. Corequisites: RSMS:3131. Requirements: acceptance to radiation sciences MS degree track.

RSMS:3140 Vascular Sonography I 3 s.h.
Embryology, anatomy, and physiology of peripheral and cerebral vascular system; normal and abnormal hemodynamics, Doppler waveforms, pressure measurements, plethysmography, sonographic appearance, scanning techniques; common types of pathology of the lower extremity arterial and venous system, cerebrovascular system. Prerequisites: RSCI:4110. Corequisites: RSMS:3110, if not taken as a prerequisite. Requirements: successful completion of a two-year radiologic technology or diagnostic medical sonography program.

RSMS:3141 Vascular Sonography I Lab 1 s.h.
Simulated application of basic sonographic vascular imaging, vascular physiologic testing, and clinical history analysis. Corequisites: RSMS:3140. Requirements: acceptance to radiation sciences MS degree track.

RSMS:3150 Cardiac Physiology and Hemodynamics 3 s.h.
Analysis of cardiac physiology, hemodynamics, diagnostic testing, and evaluation techniques specifically related to sonographic imaging. Prerequisites: RSCI:4130. Corequisites: RSMS:3110, if not taken as a prerequisite. Requirements: acceptance to radiation sciences MS degree track, or successful completion of two-year radiologic technology or diagnostic medical sonography program.

RSMS:3205 Cardiac Sonography II 3 s.h.
Sonographic evaluation of advanced pathophysiology of human heart; sonographic appearance, imaging techniques, and exam modification. Prerequisites: RSMS:3110.

RSMS:3206 Cardiac Sonography II Lab 1 s.h.
RSMS:3215 Diagnostic Medical Sonography Clinical Internship II
3 s.h.
Development of basic skills for sonographic imaging and physiologic vascular testing in health care setting. Prerequisites: RSMS:3115. Requirements: acceptance to radiation sciences MS degree track.

RSMS:3230 Sonography Principles, Physics, and Instrumentation
3 s.h.
Physical principles of sound waves, their applications to imaging of the human body, operation and physical characteristics of various ultrasound transducers, method by which the sound wave is converted into a visual image, instrumentation components and their functions, Doppler principles, image artifacts, advanced hemodynamics, and spectral Doppler waveform analysis. Prerequisites: RSMS:3110.

RSMS:3231 Sonography Principles, Physics, and Instrumentation Lab
1 s.h.
Simulated application of sonographic imaging; emphasis on physics principles; instrumentation and quality assurance testing. Corequisites: RSMS:3230. Requirements: acceptance to radiation sciences MS degree track.

RSMS:3240 Abdominal Sonography II
3 s.h.
Pathophysiology of abdominal structures imaged sonographically, including the GI system, abdominal wall, peritoneal, retroperitoneal, and superficial structures from RSMS:3120; interventional sonographic procedures (aspirations, biopsies, intraoperative procedures, sterile technique, needle-guide use); post-procedure protocol; clinical findings, laboratory studies, prognosis correlated with sonographic findings; appropriate image analysis and documentation of pathology. Prerequisites: RSMS:3120.

RSMS:3250 Obstetrical and Gynecological Sonography II
3 s.h.
Sonographically-related pathological and abnormal congenital conditions of gynecology and obstetrics, infertility, assisted reproductive therapy, invasive procedures in obstetrics and gynecology, postpartum complications and maternal-fetal bonding; clinical findings, laboratory studies, and prognosis correlated with sonographic findings; appropriate image analysis and documentation of pathology. Prerequisites: RSMS:3130.

RSMS:3260 Breast Sonography
2 s.h.
Embryology, anatomy, physiology, and pathophysiology of the breast as it relates to sonographic imaging; proper sonographic imaging techniques, including appearance of normal anatomy, imaging protocol, proper instrument settings; sonographic findings of diseases involving the breast. Prerequisites: RSMS:3110. Requirements: successful completion of a two-year radiologic technology or diagnostic medical sonography program.

RSMS:3270 Vascular Sonography II
3 s.h.
Pathophysiology of peripheral, cerebral, and abdominal vascular systems as evaluated sonographically; normal and abnormal hemodynamics, Doppler waveforms, pressure measurements, plethysmography, sonographic appearance, scanning techniques; sonographic findings of diseases involving the lower extremity arterial and venous system, upper extremity arterial and venous system, cerebrovascular system, and abdominal vascular system. Prerequisites: RSMS:3140.

RSMS:3300 Neurosonography
2 s.h.
Normal sonographic anatomy, exam protocols, imaging techniques, and pathology of neonatal brain and pediatric spinal cord. Prerequisites: RSMS:3110. Requirements: acceptance to a radiation sciences degree track, or successful completion of two-year radiologic technology or diagnostic medical sonography program.

RSMS:3315 Diagnostic Medical Sonography Clinical Internship III
4 s.h.
Development of skills for sonographic imaging and physiologic vascular testing in health care setting. Prerequisites: RSMS:3215. Requirements: acceptance to radiation sciences MS degree track.

RSMS:3325 Abdominal Sonography II Lab
1 s.h.
Simulated application of advanced sonographic abdominal imaging and clinical history analysis. Corequisites: RSMS:3240, if not taken as prerequisite. Requirements: acceptance to radiation sciences MS degree track.

RSMS:3376 Vascular Sonography II Lab
1 s.h.
Simulated application of advanced sonographic vascular imaging; non-imaging vascular physiologic testing; clinical history analysis. Corequisites: RSMS:3270, if not taken as prerequisite. Requirements: acceptance to radiation sciences MS degree track.

RSMS:4100 Diagnostic Medical Sonography I
0,9 s.h.

RSMS:4110 Advanced Sonography
3 s.h.
Exploration of advanced sonographic imaging techniques and new technologies. Prerequisites: RSMS:3240 and RSMS:3250.

RSMS:4111 Advanced Sonography Lab
1 s.h.
Simulated application of advanced sonographic imaging techniques and new technologies. Prerequisites: RSMS:4110. Requirements: acceptance to radiation sciences MS degree track.

RSMS:4115 Diagnostic Medical Sonography Clinical Internship IV
5 s.h.
Development of high-level skills for sonographic imaging and physiologic vascular testing in health care setting. Prerequisites: RSMS:3315. Requirements: acceptance to radiation sciences MS degree track.

RSMS:4120 Advanced Cardiac Sonography
3 s.h.
Advanced cardiac sonographic imaging techniques, quantifications, and new technologies. Prerequisites: RSMS:3205.

RSMS:4121 Advanced Cardiac Sonography Lab
1 s.h.

RSMS:4150 Diagnostic Cardiac Sonography 0 s.h.
Principles, methods in using ultrasound; specialties including adult and stress echocardiography; six-month program; national certification examination required at completion. Requirements: completion of an accredited medical sonography or vascular technology program.

RSMS:4200 Diagnostic Medical Sonography II 0,9 s.h.
Principles and methods in using ultrasound as an imaging modality; abdomen, obstetrics and gynecology, neurosonography, and vascular technology specialties; 18-month program; national certification required at completion. Prerequisites: RSMS:4100. Requirements: completion of an allied health program or bachelor's degree with course work in physics, anatomy, patient care, and algebra.

RSMS:4215 Diagnostic Medical Sonography Clinical Internship V 5 s.h.
Development of advanced skills for sonographic imaging and physiologic vascular testing in health care setting. Prerequisites: RSMS:4115. Requirements: acceptance to radiation sciences MS degree track.

RSMS:4220 Multidisciplinary Capstone Seminar 3 s.h.
Completion of student preparation for professional work environment; case-based learning. Prerequisites: RSMS:4110.

RSMS:4250 Cardiac Sonography Clinical Course 0 s.h.
Using ultrasound as an imaging modality; specialties, including adult echocardiography, stress echocardiography; six-month program; national certification examination required at completion. Requirements: completion of an accredited medical sonography or vascular technology program.

RSMS:4300 Diagnostic Medical Sonography III 0,3 s.h.
Prerequisites: RSMS:4200. Requirements: completion of an allied health program or bachelor's degree with course work in physics, anatomy, patient care, medical technology, and algebra.

RSMS:4400 Diagnostic Medical Sonography IV 0,9 s.h.
Principles and methods in using ultrasound as an imaging modality; specialties including abdomen, pediatrics, obstetrics, gynecology, interventional procedures, vascular imaging, neurosonography; 18-month program; national certification examination required at completion. Prerequisites: RSMS:4300. Requirements: completion of an allied health program or bachelor's degree with course work in physics, anatomy, patient care, medical technology, and algebra.

RSMS:4500 Diagnostic Medical Sonography V 0,6 s.h.
Prerequisites: RSMS:4400. Requirements: completion of an allied health program or bachelor's degree with course work in physics, anatomy, patient care, medical technology, and algebra.

Radiation Sciences Program

RSP:1100 Introduction to the Radiation Sciences 1 s.h.
Exploration of radiation sciences field (radiologic technology, nuclear medicine and PET, diagnostic medical sonography, radiation therapy, computed tomography, magnetic resonance imaging, cardiovascular interventional); introduction to basic principles and modalities associated with the field in preparation for application to radiation sciences or nuclear medicine technology major.

RSP:2110 Pathology for Radiation Sciences 2 s.h.
General pathologic processes; introduction to imaging modalities; pathological terms that describe the body's response to stress and disease; how the body responds to and forms pathological diseases (e.g., infectious and parasitic diseases, inflammation and repair, immunopathology, neoplasia, genetic disorders, dietary deficiencies and excesses, hemodynamic disorders, trauma and emergencies). Requirements: acceptance to radiation science degree track.

RSP:2120 Patient Care for the Radiation Sciences 3 s.h.
Foundation for providing care to clients during radiographic examinations; taking medical histories, basic life support, medical emergencies, vital sign assessment, body mechanics, infection control, sterile techniques, intravenous equipment, administration; advance concepts in client assessment and monitoring, including evaluation and monitoring of clients in pain, and clients in acute and chronic states of illness; communication techniques, role playing. Requirements: acceptance to radiation science degree track.

RSP:3130 Radiation Safety and Radiobiology 2 s.h.
Instruction on safe operation of radiation producing equipment and handling of radioactive materials; origin and/or derivation of certain formulae and techniques useful in radiation protection programs; regulatory agencies, regulations, and regulatory guides pertinent to student's field; emphasis on applied aspects of radiation protection; characteristics and biological effects of ionizing radiations, properties and uses of radioisotopes, medical applications, and biological basis for protection procedures. Requirements: enrollment in radiation sciences or nuclear medicine technology program. Same as FRRB:3130.

RSP:3210 Medical Ethics and Law 2 s.h.
Introduction to ethical reasoning and problem solving; integration of knowledge about patient care and ethical/legal issues which occur in process of providing care; ethical principles of autonomy, beneficence, justice, nonmaleficence, paternalism, Patient's Bill of Rights, resolving moral dilemmas; legal principles of malpractice, intentional torts, negligence. Requirements: radiation science or nuclear medicine technology major.
RSP:3220 Radiation Sciences Quality Management and Health Care Administration
Introduction to health care administration; quality management, safety, and patient satisfaction concepts for the radiation sciences professional. Requirements: radiation sciences or nuclear medicine technology major.

RSP:4110 Research Methodology for Radiation Sciences
Introduction to research concepts and methods for the radiation science professional. Requirements: radiation sciences or nuclear medicine technology major.

Radiologic Technology Program
RSRT:2110 Radiographic Procedures and Analysis I
Introduction to radiographic positioning principles; technical, positioning, and analysis information needed to perform and evaluate images of chest and abdomen on adult and pediatric patients; emphasis on quality patient care and adaptation to a variety of patient conditions; labs. Prerequisites: (ACB:1199 or ACB:3110 or ACB:3113 or HHP:1100) and CLSA:3750. Requirements: acceptance to radiation sciences RT/CT, CVI, or MRI degree track.

RSRT:2120 Radiologic Technology Clinical Internship I
Student rotations through different radiography-related areas of University of Iowa Hospitals and Clinics; assist, practice, and test radiographic examinations learned in didactic setting; skill building for care and management of patients; conduction of performance assessments and completion of guideline objectives for each rotation; performance expectations become progressively higher as students gain experience and skills. Requirements: acceptance to radiation sciences RT/CT, CVI, or MRI degree track.

RSRT:2215 Radiographic Procedures and Analysis II
Technical, positioning, and analysis information needed to perform and evaluate images of upper and lower extremity, shoulder, and gastrointestinal and biliary radiographic procedures; emphasis on quality patient care and adaptation to a variety of client conditions; labs. Prerequisites: RSRT:2110.

RSRT:2225 Radiologic Technology Clinical Internship II
Student rotation through different radiography-related areas of University of Iowa Hospitals and Clinics; assist, practice, and test radiographic examinations learned in didactic setting; skill building for care and management of patients; conduction of performance assessments and completion of guideline objectives for each rotation; performance expectations become progressively higher as students gain experience and skills. Prerequisites: RSRT:2120.

RSRT:2325 Radiologic Technology Clinical Internship III
Student rotation through different radiography-related areas of University of Iowa Hospitals and Clinics; assist, practice, and test radiographic examinations learned in didactic setting; skill building for care and management of patients; conduction of performance assessments and completion of guideline objectives for each rotation; performance expectations become progressively higher as students gain experience and skills. Prerequisites: RSRT:2225.

RSRT:3115 Radiographic Procedures and Analysis III
Technical, positioning, and analysis information needed to perform and evaluate images of hip, pelvis, thorax, skull, and GU system radiographic procedures; emphasis on quality patient care and adaptation to a variety of client conditions; labs. Prerequisites: RSRT:2225.

RSRT:3125 Radiologic Technology Clinical Internship IV
Student rotation through different radiography-related areas of University of Iowa Hospitals and Clinics; assist, practice, and test radiographic examinations learned in didactic setting; skill building for care and management of patients; conduction of performance assessments and completion of guideline objectives for each rotation; performance expectations become progressively higher as students gain experience and skills. Prerequisites: RSRT:2325.

RSRT:3140 Radiographic and Digital Imaging
Factors that govern and influence production of radiographic image; X-ray and scatter production; patient interactions; function of kVp, mAs, and distance as applied to contrast and spatial resolution; practical issues concerning automatic exposure control and grid usage; labs to practice and apply theoretical principles associated with production of quality images. Prerequisites: MATH:1020 or MATH:1440. Requirements: acceptance to radiation sciences RT/CT, CVI or MRI degree track.

RSRT:3210 Radiographic and Digital Quality Control Lab
Exploration and performing radiographic and digital quality control tests.

RSRT:3215 Radiographic Procedures IV
Technical, positioning, and analysis information needed to perform and evaluate images performed in advanced radiographic procedures; emphasis on quality patient care and adaptation to a variety of client conditions. Prerequisites: RSRT:3115.

RSRT:3225 Radiologic Technology Clinical Internship V
Student rotation through different radiography-related areas of University of Iowa Hospitals and Clinics; assist, practice, and test radiographic examinations learned in didactic setting; skill building for care and management of patients; conduction of performance assessments and completion of guideline objectives for each rotation; performance expectations become progressively higher as students gain experience and skills. Prerequisites: RSRT:3215.
RSRT:3230 Radiographic Physics and Imaging Equipment 4 s.h.
Characteristics of atomic structure, electricity, and X-ray machines; properties of X-rays and their interaction with matter; measurement of radiation exposure; construction principles and theories of operation of specialized imaging equipment, including fundamentals of acquisition for imaging intensification, geometric tomography, mobile/portable radiography, and magnification principles. Prerequisites: MATH:1020 or MATH:1440.

RSRT:3325 Radiologic Technology Clinical Internship VI 2 s.h.
Student rotation through different radiography-related areas of University of Iowa Hospitals and Clinics; assist, practice, and test radiographic examinations learned in didactic setting; skill building for care and management of patients; conduction of performance assessments and completion of guideline objectives for each rotation; performance expectations become progressively higher as students gain experience and skills. Prerequisites: RSRT:3225.

RSRT:4125 Radiologic Technology Clinical Internship VII 1 s.h.
Student rotation through different radiography-related areas of University of Iowa Hospitals and Clinics; assist, practice, and test radiographic examinations learned in didactic setting; skill building for care and management of patients; conduction of performance assessments and completion of guideline objectives for each rotation; performance expectations become progressively higher as students gain experience and skills. Prerequisites: RSRT:4125.

RSRT:4225 Radiologic Technology Clinical Internship VIII 1 s.h.
Student rotation through different radiography-related areas of University of Iowa Hospitals and Clinics; assist, practice, and test radiographic examinations learned in didactic setting; skill building for care and management of patients; conduction of performance assessments and completion of guideline objectives for each rotation; performance expectations become progressively higher as students gain experience and skills. Prerequisites: RSRT:4225.

Radiation Therapy Program

RSTH:3100 Introduction to Radiation Therapy 2 s.h.
Introduction to cancer as a disease; defining methods to treat cancer with emphasis on radiation therapy; simulation, planning, and treatment delivery of radiation therapy. Prerequisites: ACB:1199 and CLSA:3750. Requirements: acceptance to radiation sciences therapy program.

RSTH:3110 Medical Physics I 2-3 s.h.
Introduction to radiation used in clinical setting; fundamental physical units, measurements, principles, atomic structure and types of radiation; X-ray generating equipment, X-ray production, and its interaction with matter. Requirements: acceptance to radiation sciences therapy program, and maxillofacial or radiation oncology resident. Same as FRRB:3110.

RSTH:3120 Radiation Therapy Clinical Internship I 3 s.h.
Student rotations through different radiation therapy related areas; assist, practice, and test radiation therapy principles learned in didactic setting; skill building for care and management of patients; conduction of performance assessments and completion of guideline objectives for each rotation; performance expectations become progressively higher as students gain experience and skills. Requirements: acceptance to radiation sciences therapy program.

RSTH:3205 Principles of Radiation Therapy I 2 s.h.
Didactic and laboratory work in principles of radiation therapy; historic and current aspects of cancer treatment; role of radiation therapist; patient care, treatment delivery accessories, tumor localization treatment delivery protocols. Prerequisites: RSTH:3100. Requirements: enrollment in radiation sciences therapy program.

RSTH:3215 Medical Physics II 2-3 s.h.
Treatment units used in external radiation therapy; beam calculations, isodose distributions, brachytherapy, quality assurance and quality management, protection and safety. Prerequisites: RSTH:3110. Same as FRRB:3215.

RSTH:3225 Radiation Therapy Clinical Internship II 3 s.h.
Student rotations through different radiation therapy related areas; assist, practice, and test radiation therapy principles learned in didactic setting; skill building for care and management of patients; conduction of performance assessments and completion of guideline objectives for each rotation; performance expectations become progressively higher as students gain experience and skills. Prerequisites: RSTH:3120. Requirements: acceptance to radiation sciences therapy program.

RSTH:3325 Radiation Therapy Clinical Internship III 6 s.h.
Student rotations through different radiation therapy related areas; assist, practice, and test radiation therapy principles learned in didactic setting; skill building for care and management of patients; conduction of performance assessments and completion of guideline objectives for each rotation; performance expectations become progressively higher as students gain experience and skills. Prerequisites: RSTH:3225. Requirements: acceptance to radiation sciences therapy program.

RSTH:4100 Radiation Therapy I 0,12 s.h.
Theory and techniques of radiation therapy technology; emphasis on areas of oncology treatment planning, treatment set-up, dosimetry, use of megavoltage radiation-producing equipment to administer treatments. Requirements: completion of radiologic technology program and eligibility for registration with a national certification program.

RSTH:4105 Principles of Radiation Therapy II 2 s.h.
Evaluation and management of neoplastic disease using knowledge in arts and sciences; critical thinking and basis of ethical clinical decision making; epidemiology, etiology, detection, diagnosis, patient condition, treatment and prognosis of neoplastic disease. Prerequisites: RSTH:3205. Requirements: enrollment in radiation sciences therapy program.

RSTH:4125 Radiation Therapy Clinical Internship IV
4 s.h.
Student rotations through different radiation therapy related areas; assist, practice, and test radiation therapy principles learned in didactic setting; skill building for care and management of patients; conduction of performance assessments and completion of guideline objectives for each rotation; performance expectations become progressively higher as students gain experience and skills. Prerequisites: RSTH:3325. Requirements: acceptance to radiation sciences therapy program.

RSTH:4200 Radiation Therapy II
0,12 s.h.
Theory and techniques of radiation therapy technology; emphasis on areas of oncology treatment planning, treatment set-up, dosimetry, use of megavoltage radiation-producing equipment to administer treatment; one-year program ending in eligibility for national certification examination in radiation therapy. Prerequisites: RSTH:4100. Requirements: graduation from an accredited radiography program and eligibility for registration with a national certification program.

RSTH:4225 Radiation Therapy Clinical Internship V
4 s.h.
Student rotations through different radiation therapy related areas; assist, practice, and test radiation therapy principles learned in didactic setting; skill building for care and management of patients; conduction of performance assessments and completion of guideline objectives for each rotation; performance expectations become progressively higher as students gain experience and skills. Prerequisites: RSTH:4125. Requirements: acceptance to radiation sciences therapy program.

RSTH:4230 Radiation Therapy Capstone
3 s.h.
Professional development; review of concepts. Requirements: acceptance to radiation sciences therapy program.

RSTH:4300 Radiation Therapy III
0,6 s.h.
Prerequisites: RSTH:4200.
Radiology

Interim head

- Joan E. Maley

Faculty: http://www.medicine.uiowa.edu/radiology/people/

Web site: http://www.medicine.uiowa.edu/radiology/

The Department of Radiology has a three-fold mission of education, research, and patient care. It trains Doctor of Medicine students, residents, and fellows and offers programs for medical professionals. It is a leader in innovative research relating to diagnosis and treatment across the clinical subspecialties, including MRI, PET, breast imaging, cardiac and pulmonary imaging, and imaging informatics. Residents, fellows, medical students, and graduate students have opportunities to participate in research projects in the department. The radiology library provides varied resources and services for department faculty and staff.

The department also provides diagnostic and therapeutic radiology services for patients and families in Iowa and surrounding states through its clinical services at University of Iowa Hospitals and Clinics. Visit the Department of Radiology web site to learn more about the department's activities and resources.

Undergraduate Education

The Department of Radiology offers clinical education to students in the Nuclear Medicine Technology (p. 1060) and Radiation Sciences (p. 1092) Programs.

M.D. Student Training

The Department of Radiology offers a clerkship for Doctor of Medicine students and provides additional courses, research experiences, and externships for students interested in learning more about radiology. Several of the department's programs are open to medical students from other institutions. See Medical Student Education Programs and Externship Program on the Department of Radiology web site.

Residency Programs, Fellowships

The department offers two residency programs: one in diagnostic radiology and one in nuclear medicine. Fellowships are available in the following specialties: body imaging, breast imaging, musculoskeletal radiology, neuroradiology, pediatric radiology, and PET-CT imaging. Practicing radiologists have access to several departmental traineeships that provide category 1 continuing medical education credit through the Carver College of Medicine; see Traineeships on the Department of Radiology web site.

Courses

RAD:8301 Clinical Radiology 2 s.h.
Two-week clerkship. Requirements: M.D. enrollment.

RAD:8401 Advanced Clinical Radiology arr.
Requirements: M.D. enrollment.
Stead Family Department of Pediatrics

Chair
- Raphael Hirsch

Faculty: http://www.medicine.uiowa.edu/dept_primary_apr.aspx?appointment=Pediatrics
Web site: http://www.medicine.uiowa.edu/pediatrics/

The Stead Family Department of Pediatrics provides a solid foundation for M.D. students and postgraduate trainees. It offers extensive opportunities for general pediatrics and subspecialties training.

Affiliated programs add depth to the educational program in community pediatrics and primary care. The department is affiliated with the child and maternal health programs of the Bureau of Family Health, Iowa Department of Public Health; the University of Iowa Children's Hospital; the Center for Disabilities and Development; the Blank Children's Hospital in Des Moines; and community sites.

M.D. Student Training

Didactic lectures and physical examination of newborns, toddlers, and older children provide M.D. students with their initial pediatric patient contact. This experience includes taking a history, performing a physical examination, appraisal of growth and development, nutrition, and symptomatology of newborns, toddlers, and adolescents.

For junior and senior medical students, the inpatient service provides training in the complex problems of disease and critical illness. Students participate in daily rounds involving general pediatrics and all subspecialties. Challenging and interesting cases are presented for discussion of diagnosis and treatment.

Outpatient experience, available in the junior clerkship and fourth-year electives, stresses principles and practices required for the maintenance of children's health, treatment of common general pediatric disorders, and the diagnosis and treatment of subspecialty ambulatory patients.

Residency Program, Fellowships

The department offers an accredited three-year residency program designed to prepare trainees for professional careers in general pediatrics or for further fellowship training. The program meets the eligibility requirements of the American Board of Pediatrics (ABP) and is approved for 13 residents per year by the Accreditation Council for Graduate Medical Education (ACGME).

Fellowships are available in multiple pediatrics subspecialties. Fellowship programs encourage development of knowledge and skill through research and clinical orientations in the chosen discipline. Upon satisfactory completion of the program, fellows meet the ABP eligibility requirements in their subspecialty.

Facilities

The Stead Family Department of Pediatrics has inpatient and outpatient facilities in the University of Iowa Children's Hospital at University of Iowa Hospitals and Clinics. Additional outpatient facilities are located at Iowa River Landing in Coralville.

The pediatric inpatient service has approximately 120 beds, and more than 50,000 patients are seen each year in the general, specialty, continuity care, and field clinics and in the University's Emergency Department. The Center for Disabilities and Development provides resources for children with developmental disabilities, cerebral palsy, or mental retardation.

The department maintains a number of laboratories that perform both clinical and research studies.

Courses

**PEDS:6101 Primary Care: Infants, Children, and Adolescents II**
Enhancement of clinical knowledge and skills for infant, child, adolescent care; development and refinement of knowledge and skills in primary health care delivery.

**PEDS:7245 Evaluation of Children with ADHD and LD**
Clinical experience in conducting pediatric neuropsychology examinations in the Pediatric Attention/ Learning Disorders Clinic. Requirements: course on psychological testing (including IQ) and graduate psychology standing (school, counseling, rehabilitation, clinical). Same as PSQF:7245.

**PEDS:7251 Clinical Pediatric Neuropsychology**
Learning and behavior disorders resulting from central nervous system dysfunction; clinical experience in assessment of cognitive, behavioral patterns.

**PEDS:7252 Assessment of Attention Deficit Disorder**
Participation in clinical, research, didactic work in evaluating children with attention deficit disorder.
Requirements: experience in intellectual assessment of children. Recommendations: previous experience with IQ testing and interviewing.

**PEDS:7253 Assessment of Behavior Disorders**
Experience in diagnostic and behavioral assessments of children with conduct disorders.

**PEDS:7255 Autism Spectrum Disorders**
Overview of autism spectrum disorders (ASDs), including autistic disorder, Asperger's disorder, other pervasive developmental disorders; ASD diagnoses and their etiology; tools used in assessing individuals with ASDs; common interventions for ASDs; resources for work with individuals who have ASDs.

**PEDS:7256 Pediatric Psychology Inpatient Practicum**
1-3 s.h.
Knowledge and practical skills in implementing psychological practice with hospitalized pediatric patients; referrals include challenging behaviors (e.g., treatment adherence, disruptive behaviors), neuropsychological assessment (e.g., child with seizure disorder, child with TBI), and social-emotional evaluation; how to consult with medical teams and work with families with children who have acute and chronic health conditions, including asthma, diabetes, cancer, brain tumors, burns, head injury. Requirements: enrollment in an applied doctoral program in a psychological field. Recommendations: completion of a practicum in an outpatient Pediatric Psychology Clinic.

**Peds:7258 Seminar in Pediatric Psychology**  
Basic introduction to the field of pediatric psychology; professional issues in pediatric psychology; consultation and professional relations with physicians; psychological services in pediatric psychology; specialized populations, such as childhood chronic illness, children's hospitalization and surgery. Requirements: enrollment in an applied doctoral program in a psychological field.

**Peds:7260 Neurobehavioral Assessment and Intervention**  
Experience evaluating the interaction between a child's neurocognitive profile and their behavior at school and home; interviews with parents/children, assessments to assist in identifying cognitive and learning disorders, behavior analyses to identify interventions; follow-up with families and school teams.

**Peds:7261 Autism Assessment and Behavioral Intervention**  
Foundation in evidence-supported psychological assessment, behavioral assessment, and/or intervention for children with autism spectrum disorders (ASDs); emphasis on evaluating and providing treatment services to young children with ASDs and their families.

**Peds:7262 Biobehavioral Assessment and Intervention**  
Experience conducting brief functional assessments and behavioral treatments for children and adults with developmental disabilities; interviews with caregivers, behavioral assessments, matched treatments (e.g., functional communication training); follow-up with caregivers.

**Peds:7263 Evaluation and Treatment of Pediatric Feeding Disorders**  
Experience evaluating children with varied feeding disorders, such as food overselectivity by texture or type, dependence on gastrostomy or nasogastrostomy tubes, failure to grow adequately due to inadequate caloric intake; methods to evaluate feeding behaviors, evaluate design interventions, and measure outcomes; caregiver training and follow-up.

**Peds:7264 Clinical Applications of Applied Behavior Analysis**  
Experience behavioral observations, consultation, and/or conducting behavioral assessments (including preference assessments and functional analyses), matched treatments; interviews with care providers, collect behavioral data, conduct behavioral assessments, matched treatments; follow-up with care providers.

**Peds:7265 Research in Applied Behavior Analysis**  
Experience developing and conducting research in applied behavior analysis; conduct behavioral observations, behavioral assessments, matched treatments; weekly readings and lab meetings; participate in research sessions as data collector or therapist.

**Peds:7300 Pediatric Independent Study**  

**Peds:8104 Medical Genetics**  
Gene structure and function, basic genetics concepts, application to problems in human disease. Offered fall semesters. Requirements: M.D. enrollment or graduate standing in related health field.

**Peds:8301 Clinical Pediatrics**  
Principles, practices of health maintenance and treatment of acute and chronic illnesses in children; emphasis on diagnosis and evaluation, nutrition, behavior problems, disorders affecting children; patient care, daily rounds, ward work. Requirements: third-year M.D. enrollment.

**Peds:8401 Pediatric Inpatient Care Subinternship**  
Experience on pediatric inpatient team caring for patients ranging from infants through adolescents; evaluation, formulation of differential diagnoses, diagnostic workups, appropriate therapy programs. Requirements: fourth-year M.D. enrollment.

**Peds:8402 Subinternship in Pediatrics: Blank Children's Hospital, Des Moines**  
Experience in the care of general pediatric inpatients; daily rounds and teaching by senior residents and faculty members; daily didactic conferences. Requirements: fourth-year M.D. enrollment.

**Peds:8403 Neonatology (NICU) Arr.**  
Experience caring for ill neonates, proficiency in using diagnostic tests and procedures; responsibility for care of several infants; reference and literature review, conferences, teaching, clinical rounds. Requirements: fourth-year M.D. enrollment.

**Peds:8404 Critical Care (PICU)**  
Direct care of critically ill children in a multidisciplinary medical/surgical/cardiac intensive care unit, under supervision of pediatric residents and staff; participation in educational activities and formal clinical rounds. Requirements: fourth-year M.D. enrollment.

**Peds:8405 Emergency Room Blank Children's Hospital, Des Moines**  
Pediatric emergencies and urgent care, proficiency in pediatric medicine procedures; expansion of basic knowledge. Requirements: fourth-year M.D. enrollment.
PEDS:8406 Pediatric Allergy
Experience in evaluating and treating respiratory and allergic diseases in infants, children, and adolescents. Requirements: fourth-year M.D. enrollment.

PEDS:8407 Pediatric Cardiology
Participation in clinical activities; observation of cardiac catheterization; experience in cardiac auscultation, ECG, radiography; emphasis on physical diagnosis, approach to heart disease and murmurs in children. Requirements: fourth-year M.D. enrollment.

PEDS:8408 Pediatric Gastroenterology
Diagnosis, management, treatment of diseases of gastrointestinal tract, liver, pancreas in children; ward rounds, consultations, clinics, diagnostic procedures, conferences. Requirements: fourth-year M.D. enrollment.

PEDS:8409 Pediatric Hematology/Oncology
Basic concepts of clinical approach to hematologic and oncologic problems in children and adolescents; primarily outpatient experience. Requirements: fourth-year M.D. enrollment.

PEDS:8410 Pediatric Neurology
Participation in outpatient and inpatient activities, teaching, morning ward rounds. Requirements: fourth-year M.D. enrollment.

PEDS:8411 Child Abuse and Neglect
Hospital- and community-based multidisciplinary responses to child abuse and neglect; experience developing diagnostic skills to recognize, assess, and report cases of child abuse and neglect. Requirements: fourth-year M.D. enrollment.

PEDS:8412 Developmental and Behavioral Pediatrics
Normal developmental sequence of gestation and early childhood, impact of environmental influences; antecedents of developmental disabilities; methods to detect cognitive and motor delays in preschool children; long-term consequences of developmental disabilities for children, their families; advantages of interdisciplinary teamwork. Requirements: fourth-year M.D. enrollment.

PEDS:8413 General Pediatric Outpatient Clinic
Work in general pediatric outpatient clinics with acutely or chronically ill patients and with well children. Requirements: fourth-year M.D. enrollment.

PEDS:8415 Medical Genetics for the Senior Student
Participation in diagnostic, therapeutic problems; techniques for evaluation, appropriate counseling in genetic cases; conferences. Requirements: fourth-year M.D. enrollment.

PEDS:8416 Neonatal Intensive Care Unit, Blank Children's Hospital
Experience equivalent to intern on neonatal intensive care unit teaching service at Blank Children's Hospital, Des Moines; four-week rotation.

PEDS:8417 Community Pediatric Outpatient Elective
Opportunity to participate as active members of a community-based general pediatric office; work directly with community-based faculty and non-physician team members; build on clinical skills developed in M3 pediatric clerkship. Requirements: M.D. enrollment.

PEDS:8420 Pediatric Palliative Care
Palliative medicine as a specialty which enhances quality of life, reduces suffering for patients with serious illnesses, and provides education and support for their families; interdisciplinary consult team working with patient's primary medical providers for inpatient or outpatient management of symptoms, goal setting, and decision making; introduction to pediatric palliative care with option to be involved in adult palliative care and local hospice services. Requirements: M.D. enrollment.

PEDS:8421 Pediatric Endocrinology
Diagnosis, management, and treatment of pediatric endocrine diseases: growth disorders (short stature, tall stature, delayed puberty, precocious puberty), thyroid disorders (hyperthyroidism, hypothyroidism, thyroid nodules), diabetes mellitus, diabetes insipidus, dysgenetic syndromes, ambiguous genitalia, adrenal insufficiency or adrenal steroid excess, and hypopituitarism. Requirements: M.D. enrollment.

PEDS:8431 Pediatric Nephrology
Introduction to general pediatric nephrology cases and management. Requirements: M.D. enrollment.

PEDS:8450 Continuity of Care in Outpatient General Pediatrics
Work with experienced general pediatrician in a longitudinal clinical experience for the academic year; paired with faculty pediatrician to see patients in a weekly clinic, provide clinical care to a defined patient population; growth and development, health supervision, and management of common acute and chronic clinical problems. Requirements: fourth-year M.D. enrollment.

PEDS:8495 Pediatric Intensive Care Off Campus
Arranged by student and department. Requirements: fourth-year M.D. enrollment.

PEDS:8498 Pediatrics On Campus
Requirements: fourth-year M.D. enrollment.

PEDS:8499 Pediatrics Off Campus
Requirements: fourth-year M.D. enrollment.
The Department of Surgery offers didactic instruction as well as clinical and other practical experiences for medical students. It also hosts a wide spectrum of clinical and scientific research.

M.D. Student Training
Department of Surgery courses provide a unique combination of experience oriented toward patient care and understanding of surgery's place among a physician's skills. Surgery courses are open only to M.D. students and qualified students in associated health sciences.

Students develop an awareness of surgery's role in the treatment of disease. Emphasis is placed on general surgery, basic emergency surgery, trauma, oncology, burns, gastrointestinal and biliary tract disease, endocrine disease, pediatric surgery, transplantation, plastic and reconstructive surgery, and peripheral vascular surgery.

The majority of surgery courses involve patient-centered discussions and practical exercises interwoven with operating room experience. Lectures and conferences are scheduled regularly on specific topics.

The department offers independent study courses in selected surgery topics and clinical experiences; some are available to fourth-year M.D. students by arrangement with the faculty.

Faculty
The faculty's strengths center in pathophysiology and problems of severe burns, trauma, organ transplantation, surgical control of morbid obesity, surgical oncology, bowel disease, biliary tract disease, pediatric surgery, endocrine disease, plastic surgery, and vascular surgery.

Facilities
Abundant patient contact provides education in a wide variety of surgical diseases. The Department of Surgery provides training in the only burn unit in Iowa approved by the American College of Surgeons and in the Level I Trauma Center at University of Iowa Hospitals and Clinics.

Laboratories provide equipment, space, and technical expertise to support teaching and a wide spectrum of clinical and scientific research. Projects are available in gastrointestinal surgery, surgical microbiology, peripheral vascular surgery, transplantation, wound healing, organ preservation, vascular surgery, pediatric surgery, and surgical oncology.

Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SURG:8301</td>
<td>Clinical Surgery</td>
<td>6 s.h.</td>
</tr>
<tr>
<td>SURG:8401</td>
<td>Advanced General Surgery</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>SURG:8402</td>
<td>Subinternship in General Surgery</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>SURG:8406</td>
<td>General Surgery, Des Moines, IA</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>SURG:8407</td>
<td>Intensive Care Unit—Trauma, Iowa Methodist</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>SURG:8409</td>
<td>General Surgery, Davenport, IA</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>SURG:8411</td>
<td>Multidisciplinary Breast Elective</td>
<td>2,4 s.h.</td>
</tr>
<tr>
<td>SURG:8498</td>
<td>Surgery On Campus</td>
<td>arr.</td>
</tr>
<tr>
<td>SURG:8499</td>
<td>Surgery Off Campus</td>
<td>arr.</td>
</tr>
</tbody>
</table>
Urology

Chair

• Karl J. Kreder

Faculty: http://www.medicine.uiowa.edu/dept_primary_apr.aspx?appointment=Urology
Web site: http://www.medicine.uiowa.edu/urology/

Urology encompasses the subspecialty areas of urologic nephrology, oncology, and endocrinology; male reproductive physiology; erectile dysfunction; neurourology; pediatric urology; urinary tract stone and infection, including endourology; laparoscopic and robotic urology; trauma and reconstructive urology; urodynamics and female urology; diagnostic urology; and urinary tract obstruction.

The Department of Urology offers instruction in all of these areas to M.D. and graduate students and provides continuing education for the delivery of urologic care.

M.D. Student Training

The Department of Urology cooperates with several University of Iowa basic science departments to educate first-year M.D. students in the relationship between urology and the basic sciences. It collaborates with the Department of Microbiology (p. 1050) in teaching and research concerning immunology of genitourinary cancers and renal transplantation.

In the second-year M.D. course, MED:8215 Foundations of Clinical Practice IV ICD, the department presents illustrative lectures and demonstrations related to diagnosis and treatment of genitourinary tract diseases.

Third- and fourth-year M.D. students take Department of Urology courses that provide experience in all areas of urology. The department’s selective two-week clerkship covers the fundamentals of these areas through experience in outpatient clinics and inpatient units at University of Iowa Hospitals and Clinics, the Iowa River Landing, and the Iowa City Veterans Affairs Medical Center. Fourth-year M.D. students can take advanced elective courses of intensive study in any of the urologic subspecialties.

Continuing Education

The department offers continuing education activities throughout the year for urologic and family practitioners. These activities are conducted by the senior staff, whose interests include pediatric urology, reproductive physiology and male infertility, urologic oncology, urinary tract stone (including endourology/laparoscopy), robotic surgical procedures, reconstructive and trauma urology, female urology, and prostatic diseases.

Research

The department has earned international recognition for its studies of prostatic diseases. The urological laboratories conduct research and offer instruction in experimental oncology, cellular immunology, and infertility.

Courses

**URO:8301 Clinical Urology** 2 s.h.
Work in urology unit, clinic; responsibility for patient care, working with residents.

**URO:8401 Advanced Clerkship in Urology** 4 s.h.
Experience as integral member of urological staff, junior resident level.

**URO:8402 Advanced Clerkship Pediatric Urology** 2,4 s.h.
In-depth study of pediatric urology topics. Prerequisites: URO:8301. Requirements: M.D. enrollment.

**URO:8403 Urology Oncology** 2,4 s.h.
Multispecialty exposure to diagnosis and treatment of patients with current and newly-diagnosed urologic malignancies. Requirements: M.D. enrollment.

**URO:8404 Female Pelvic Floor Dysfunction** 2,4 s.h.
Requirements: M.D. enrollment.

**URO:8496 Individual Study and Research** arr.
Preclinical or clinical projects; may include research presentation, collaboration on a publication.

**URO:8499 Urology Off Campus** arr.
Individually arranged by students with department approval.
College of Nursing

Dean
• Rita A. Frantz

Executive associate dean for academic affairs
• Thad R. Wilson

Associate dean for faculty
• Keela Herr

Associate dean for research
• Ann Marie McCarthy

Associate dean for undergraduate programs
• Ellen Cram

Director, M.S.N. and D.N.P. programs
• Virginia Conley

Director, Ph.D. program
• Sue Moorhead

Undergraduate major: B.S.N.
Graduate degrees: M.S.N.; D.N.P.; Ph.D. in nursing
Graduate certificate: advanced practice nursing
Faculty: http://www.nursing.uiowa.edu/faculty-staff
Web site: http://www.nursing.uiowa.edu/

The College of Nursing is an integral part of the University of Iowa health science campus, sharing in and contributing to teaching, research, and patient care resources that have earned international recognition. The University provides an unusually fine setting for nursing preparation because the educational and clinical resources vital to educating nurses are available on or near the campus. Faculty and students participate fully in University life and contribute their time, interests, and abilities to the many general and special activities of a major research university.

The college's Bachelor of Science in Nursing (B.S.N.), Master of Science in Nursing (M.S.N.), clinical nurse leader (in the M.S.N.), and Doctor of Nursing Practice (D.N.P.) programs are accredited by the Commission on Collegiate Nursing Education (CCNE), an autonomous accrediting arm of the American Association of Colleges of Nursing (AACN). They also are approved by the Iowa Board of Nursing. The anesthesia nursing program (in the Doctor of Nursing Practice) is accredited by the Council on Accreditation of Nurse Anesthesia Educational Programs.

Graduates of the prelicensure B.S.N. qualify to take the licensure examination required for practice as registered nurses (RN). Graduates of advanced practice majors in the graduate program are eligible to take certification examinations and apply for Advanced Registered Nurse Practitioner (ARNP) licensure.

Undergraduate Program of Study
• Bachelor of Science in Nursing

The College of Nursing offers two paths to the Bachelor of Science in Nursing (B.S.N.): a prelicensure program for students who do not hold a nursing license (see "Bachelor of Science in Nursing" below) and a program for registered nurses (see "RN-B.S.N. for Registered Nurses" below).

The B.S.N. programs prepare students for careers caring for patients in hospitals and in community agencies such as public health services, schools, homes, and industries. They also provide a base for graduate study in nursing.

In addition to combining general education with specialized career preparation, the University of Iowa programs in nursing offer the advantages of full participation in the social, cultural, and recreational activities of a highly diverse campus community. A university education enables students to prepare for a career as well as a life of thought and action informed by knowledge, introspection, and contemplation.

The B.S.N. programs provide a basis for nurses' roles in wellness and health promotion, in acute care, and in long-term care for chronic illness. The professional nurse may provide care to individuals, families, groups, and communities along a continuum of health, illness, and disability in any sector of the health care system.

In addition to providing care, the nurse serves as a coordinator of health care by organizing and facilitating the delivery of comprehensive, efficient, and appropriate service to individuals, families, groups, and communities. The nurse demonstrates the ability to conceptualize the total continuing health needs of the patient, including legal and ethical aspects of care. The University of Iowa programs' goal is to produce graduates who are competent, committed, creative, and compassionate.

Bachelor of Science in Nursing

The Bachelor of Science in Nursing prelicensure program of study requires 128 s.h., including 64 s.h. in the nursing major and 64 s.h. in supporting course work that is prerequisite to the nursing major. The program is intended for students beginning their education in nursing. A B.S.N. program for registered nurses is described under "RN-B.S.N. for Registered Nurses" below.

B.S.N. students may complete their entire program at Iowa, enrolling in the College of Liberal Arts and Sciences to complete courses that are prerequisite to the nursing major, or they may transfer from an institution that offers comparable prerequisite courses that are approved by the University of Iowa and the College of Nursing. They must earn competitive admission to the College of Nursing once they have completed the prerequisite course work. Highly qualified applicants may be admitted to the College of Nursing directly from high school under the B.S.N. early decision program; see "Admission" later in this Catalog section.

Students who are part of the B.S.N. early decision program spend their first four semesters (two years) on prerequisite course work and complete the requirements for the nursing major during the next four semesters (their third and fourth years), earning the B.S.N. in a total of four academic years. Students who earn competitive admission to the College of Nursing have five semesters to complete prerequisite course work. They begin work for the nursing major in spring of their third year and complete the major in four semesters, earning the B.S.N.

University of Iowa students who have declared an interest in the prelicensure nursing program are advised at the University's Academic Advising Center until they are admitted to the College of Nursing. After admission to
the college, each student is assigned a College of Nursing faculty advisor and a professional advisor in the college's Office of Student Services.

Nursing courses are based on concepts of health, deviations from health, and nursing intervention. Course work progresses in complexity across the curriculum. The curriculum reflects the current trend in health care delivery toward emphasis on nursing as a service provided both inside and outside hospitals. Students have access to clinical experiences selected from a multitude of agencies in Iowa and around the country.

The B.S.N. prelicensure program requires the following course work. Students must complete the prerequisite course work before beginning work required for the major in nursing.

**B.S.N.: PREREQUISITE COURSES**

Early decision students complete all of the following prerequisites during their first and second years of enrollment at the University of Iowa. Competitive admission students must complete all of the following prerequisites, with the exception of two natural science courses and two social science courses, before they may apply for admission to the College of Nursing.

General education prerequisites (13 s.h.):

- RHET:1030 Rhetoric
  - 4 s.h.
- International and Global Issues course
  - 3 s.h.
- Literary, Visual, and Performing Arts course
  - 3 s.h.
- Values, Society, and Diversity course
  - 3 s.h.

Natural science prerequisites (23 s.h.):

- ACB:3110 Principles of Human Anatomy
  - 3 s.h.
- BIOL:1141 Introductory Animal Biology
  - 4 s.h.
- CHEM:1070 General Chemistry I
  - 3 s.h.
- CHEM:1080 General Chemistry II
  - 3 s.h.
- HHP:1300 Fundamentals of Human Physiology
  - 3 s.h.
- HHP:2310 Nutrition and Health
  - 3 s.h.
- MICR:3164 Nursing Microbiology
  - 4 s.h.

Social science prerequisites—both of these (6 s.h.):

- NURS:1030 Human Development and Behavior
  - 3 s.h.
- PSY:1001 Elementary Psychology
  - 3 s.h.

And one of these (3 s.h.):

- SOC:1010 Introduction to Sociology
  - 3-4 s.h.
- SOC:1020 Social Problems
  - 3-4 s.h.

Other prerequisites (19 s.h.):

- NURS:3110 Healthcare Finance
  - 3 s.h.
- MATH:1440 Mathematics for the Biological Sciences
  - 4 s.h.

Electives
- 12 s.h.

**B.S.N.: COURSES REQUIRED FOR THE MAJOR**

Early decision students and competitive admission students complete the following courses for the major in nursing.

First semester in the major (17 s.h.):

- NURS:3128 Health Assessment and Communication Across the Lifespan
  - 3 s.h.

Second semester in the major (18 s.h.):

- NURS:3138 Nursing and Pharmacological Interventions I
  - 5 s.h.
- NURS:3150 Clinical Simulation Laboratory I
  - 3 s.h.
- NURS:3160 Professional Role I: Professionalism and Patient Safety
  - 3 s.h.
- NURS:3518 Pathology
  - 3 s.h.

Third semester in the major (15 s.h.):

- NURS:3630 Parent-Child Nursing
  - 3 s.h.
- NURS:3635 Parent Child Nursing Practicum
  - 2 s.h.
- NURS:3640 Psychiatric/Mental Health Nursing
  - 3 s.h.
- NURS:3645 Mental Health Nursing Practicum
  - 2 s.h.
- NURS:3660 Professional Role III: Improving Health Systems
  - 3 s.h.
- Elective
  - 2 s.h.

Fourth semester in the major (14 s.h.):

- NURS:3650 Community and Public Health Nursing
  - 3 s.h.
- NURS:3655 Community and Public Health Nursing Practicum
  - 2 s.h.
- NURS:4155 Senior Nursing Internship
  - 5 s.h.
- NURS:4160 Professional Role IV: Leadership and Professional Engagement
  - 3 s.h.
- Elective
  - 1 s.h.

See B.S.N. Plans of Study on the College of Nursing website for semester-by-semester study plans for early decision and competitive admission students.

**RN-B.S.N. for Registered Nurses**

The RN-B.S.N. program of study requires 32 s.h. of credit. RN-B.S.N. students must hold a valid Iowa nursing license (RN) and an Associate Degree in Nursing or Diploma in Nursing.

The program is designed to offer registered nurses the opportunity to build on their nursing knowledge and experience by earning a Bachelor of Science in Nursing. RN-B.S.N. students take courses that focus on professionalism and patient safety, research, improvement of health systems, leadership, professional engagement, and community and public health.

Students may transfer course work completed at other colleges and universities to satisfy the prerequisites, general education requirements, electives, and the world language requirement for admission to the College of Nursing (see "Admission to the RN-B.S.N. Program" below). Once a student is admitted to the RN-B.S.N. program, he or she has the option of completing the required 32 s.h. in three semesters or in five semesters.

Most of the RN-B.S.N. program is delivered online, with limited face-to-face meetings that are associated with
the practicum experience. Students must complete a practicum experience in Iowa and may be required to drive up to 100 miles to a regional practicum setting.

The College of Nursing participates as a receiving institution in the Iowa Statewide Articulation Plan for Nursing Education: RN to Baccalaureate.

The RN-B.S.N. program requires the following College of Nursing course work.

**RN-B.S.N.: COURSES REQUIRED FOR THE MAJOR**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>NURS:3110</td>
<td>Healthcare Finance</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>NURS:3160</td>
<td>Professional Role I: Professionalism and Patient Safety</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>NURS:3460</td>
<td>Professional Role II: Research</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>NURS:3518</td>
<td>Pathology</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>NURS:3650</td>
<td>Community and Public Health</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>NURS:3655</td>
<td>Community and Public Health Nursing Practicum</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>NURS:3660</td>
<td>Professional Role III: Improving Health Systems</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>NURS:3734</td>
<td>Introduction to Human Genetics</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>NURS:4160</td>
<td>Professional Role IV: Leadership and Professional Engagement</td>
<td>5 s.h.</td>
</tr>
<tr>
<td>NURS:4170</td>
<td>Baccalaureate Seminar</td>
<td>1 s.h.</td>
</tr>
<tr>
<td>Nursing electives</td>
<td></td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

See RN-B.S.N. Plans of Study on the College of Nursing web site for semester-by-semester views of required course work for full-time (three semesters) and part-time (five semesters) study.

**Honors in Nursing**

The College of Nursing Honors Program provides seminars and independent study experience for qualified students. In order to pursue honors studies in nursing, students must maintain a University of Iowa g.p.a. of at least 3.33 and a nursing major g.p.a. of at least 3.50.

The honors program in nursing enables students to explore subject matter based on individual interests, needs, and goals. It provides opportunities for self-initiative, research experience, and intellectual and personal development and challenges students to grow and excel. Students who fulfill the requirements of the program graduate with honors in nursing.

In addition to honors in their majors, prelicensure B.S.N. students have a variety of opportunities for honors study and activities through membership in the University of Iowa Honors Program; visit Honors at Iowa to learn about the University’s honors program.

**Related Certificate or Minor: Aging Studies**

College of Nursing students may participate in the Aging Studies Program, which provides undergraduate students with a multidisciplinary approach to gerontology. The program offers a certificate (21 s.h.) and a minor (15 s.h.). Students plan their course of study with their academic advisor in close cooperation with the Aging Studies Program coordinator. See Aging Studies (p. 34) in the Catalog for details. The Aging Studies Program is administered by the School of Social Work (College of Liberal Arts and Sciences).

**Expenses and Insurance**

Students pay University of Iowa student fees throughout the B.S.N. program. They must purchase uniforms, shoes, a stethoscope, and a watch with a full-sweep second hand, and they must pay the cost of computer testing, supplies, and materials for required nursing courses. All nursing students arrange and pay for their own health screening requirements, health insurance, and transportation once they are enrolled in clinical nursing courses. They also pay fees that cover the cost of criminal background checks, laboratory equipment, and professional liability insurance.

**MANDATORY HEALTH INSURANCE**

Upon admission to the College of Nursing and each August afterward, all students must provide verification that they have obtained and currently hold health insurance that satisfies the following minimal standards of coverage (or an equivalent alternative health care plan):

- **$250,000 lifetime benefit**
- coverage for hospitalization, including coverage for room and board, physician visits, surgeon services, X-ray, and lab services;
- inpatient deductible under an individual policy not exceeding $500 per admission and a 20 percent copayment/coinsurance requirement;
- coverage for medically necessary care, including physician services, X-ray, and lab services for treatment of emergencies, illness, accident, and injury.

**PROFESSIONAL LIABILITY INSURANCE**

All students in the College of Nursing are required to carry professional liability insurance throughout the duration of their program. Agencies that provide clinical practicums for College of Nursing programs require that students have insurance coverage. The College of Nursing provides students with information about the liability insurance requirement during orientation.

B.S.N. prelicensure students are covered by a group policy supported by student fees.

RN-B.S.N. students must provide verification that they are covered by professional liability insurance for registered nurses with a minimum coverage of $1 million per single occurrence and $3 million aggregate coverage.

**Admission**

Students entering the University who are not licensed registered nurses (RN) apply to the B.S.N. prelicensure program. Registered nurses apply to the RN-B.S.N. program.

All entering first-year and undergraduate transfer students who have earned fewer than 24 s.h. when they apply for admission to the University of Iowa must complete the American College Test (ACT) or the Scholastic Aptitude Test (SAT). For information about the American College Test, visit the ACT web site; for information about the Scholastic Aptitude Test, visit the College Board web site. Applicants to the B.S.N. and RN-B.S.N. programs whose first language is not English must score at least 550 (paper-based) or 81 (Internet-based) on the Test of
English as a Foreign Language (TOEFL). Registered nurses educated outside the United States are required to present verification of having passed the Commission on Graduates of Foreign Nursing Schools (CGFNS) examination and specified Excelsior baccalaureate nursing examinations.

Applicants admitted to the College of Nursing are expected to be able to meet the curriculum's performance standards; see "Core Performance Standards" below.

A criminal background check is conducted for all prelicensure and undergraduate students before they begin the nursing major. Admission to all programs is conditional pending successful review of criminal background and abuse registry.

**ADMISSION TO THE B.S.N. PRELICENSURE PROGRAM**

All applicants to the B.S.N. prelicensure program (early decision applicants and competitive admission applicants) must have satisfied the following minimum high school course requirements.

**English:** four years

**Mathematics:** three years, including algebra I, algebra II, and geometry

**Science:** one year of biology, one year of chemistry, and one year of physics

**Social science:** three years

**World languages:** four years (fourth-level proficiency) of the same world language or two years (second-level proficiency) in each of two world languages

**B.S.N. Early Decision Admission**

A select group of highly qualified students are admitted to the College of Nursing directly from high school through the B.S.N. Early Decision Program (EDP). To be considered for the EDP, students must meet three of the following four requirements:

- an ACT composite score of at least 28;
- an ACT science reasoning score of at least 25;
- a g.p.a. of at least 3.80; and
- completion of the minimum high school course requirements listed under "Admission to the B.S.N. Prelicensure Program" above.

Students admitted through the Early Decision Program must maintain a cumulative g.p.a. of at least 3.00 and clean criminal and student life records during their first four semesters in the program. Students who fail to meet these requirements may be subject to probation or dismissal from the EDP.

**B.S.N. Competitive Admission**

In order to apply for competitive admission to the College of Nursing, students must:

- have a cumulative g.p.a. of at least 3.00;
- have a minimum of 48 s.h. of college credit;
- have completed the minimum high school course requirements listed under "Admission to the B.S.N. Prelicensure Program" above, with any deficiencies satisfied through college course work;
- have completed all B.S.N. prerequisite course work listed under "Bachelor of Science in Nursing" above (a maximum of two natural science prerequisites and two social science prerequisites may be in progress or planned at the time of application); and
- must have a grade of C (2.00) or higher on all prerequisite course work.

In order to enter the College of Nursing, successful competitive admission applicants must:

- maintain a cumulative g.p.a. of at least 3.00;
- have a minimum of 64 s.h. of college credit; and
- have completed any remaining prerequisite course work listed under "Bachelor of Science in Nursing" above, including any remaining natural science and/or social science prerequisites.

Successful competitive admission students must complete any remaining natural science prerequisite no more than 10 years before they enter the College of Nursing and enroll in course work for the nursing major.

**ADMISSION TO THE RN-B.S.N. PROGRAM**

Applicants to the RN-B.S.N. program must hold an RN license and an Associate Degree in Nursing or Diploma in Nursing. They must have a cumulative g.p.a. of at least 3.00. Admission is highly competitive, with emphasis on the natural sciences (anatomy, biology, chemistry, microbiology, physiology), writing (composition I and II), and mathematics (statistics).

Applicants must be enrolled in or have completed prerequisite course work at the time of application to the RN-B.S.N. program and additional elective course work before entering the program. They may complete these requirements at a community college.

They also must complete course work in one or more world languages; the requirement varies according to the applicant's year of high school graduation:

- before 1991: applicant is exempt from the world language requirement;
- 1991 and after: applicant must demonstrate second-level proficiency in a single world language.

**CORE PERFORMANCE STANDARDS**

Applicants to the College of Nursing are expected to be capable of completing the entire nursing curriculum and of earning a B.S.N. degree. Nursing is a practice discipline with cognitive, sensory, affective, and psychomotor performance requirements. The college's core performance standards provide an objective measure on which to base informed decisions about whether individual students will be able to participate in the nursing program. The core performance standards also help students determine whether they will need accommodations or modifications in order to participate.

The core performance standards are provided to all students before matriculation and are available online in the B.S.N. Student Handbook; see Section VIII: Clinical Course and Health Science Student Requirements. A student with disabilities who believes that he or she may need assistance in meeting the core performance standards should contact Student Disability Services.
The Master of Science in Nursing requires a minimum of 39 s.h. of graduate credit. The program has a clinical nurse leader focus. It is designed to build on general and professional baccalaureate study. The M.S.N. curriculum consists of a core component of 28 s.h., which students take with College of Nursing doctoral students, and a specialization component of 11 s.h. that centers on the clinical nurse leader role.

Students must maintain a g.p.a. of at least 2.75 and must successfully complete a thesis, project, or portfolio.

Graduate students in the College of Nursing must adhere to all Graduate College policies regarding academic standing, probation, and dismissal; see the Manual of Rules and Regulations of the Graduate College.

Doctor of Nursing Practice

The Doctor of Nursing Practice requires a minimum of 72 s.h. of graduate credit. Students may complete the program in three to five years, depending on their focus area. Individuals who have been granted an M.S.N. may complete the D.N.P. with a minimum of 27 s.h. of graduate credit.

The D.N.P. program prepares nurses for leadership and advanced practice roles. Students choose from a number of specialties, including adult/gerontology nurse practitioner, anesthesia nursing, family nurse practitioner, neonatal nurse practitioner, pediatric nurse practitioner —primary care, pediatric nurse practitioner—acute care, psychiatric/mental health nurse practitioner; and health systems work.

All D.N.P. students complete basic graduate core courses, specialty courses, advanced core courses, and practicums. In didactic courses, they explore clinical leadership, public policy and advocacy, specialty systems, change theory, finance and business, and entrepreneurial tools. Visit D.N.P. Plans of Study on the College of Nursing web site to view required course work for each D.N.P. specialty.

D.N.P. students must complete a minimum of 1,000 practice experience hours. Individuals who enter the program having completed an M.S.N. may transfer approved clinical hours from their M.S.N. program to the D.N.P. program. The clinical hours requirement is evaluated for each student who has completed an M.S.N. with a specialty program. Students who completed more than 1,000 practice experience hours in an M.S.N. advanced practice program still must complete the number of D.N.P. practicum and capstone project hours determined in consultation with their advisor and the D.N.P. program director.

Transfer credit applicable to the D.N.P. is limited and must be approved by the College of Nursing executive associate dean for academic affairs. Transcripts for individuals who have completed an M.S.N. are evaluated individually.

Graduate students in the College of Nursing must adhere to all Graduate College policies regarding academic standing, probation, and dismissal. Course work taken 10 or more years before a student plans to graduate from the D.N.P. program must be updated according to University policy.
**Doctor of Philosophy**

The Doctor of Philosophy program in nursing requires a minimum of 74 s.h. of graduate credit. The program prepares students to advance nursing science and contribute to the body of nursing knowledge. It emphasizes student participation with faculty members on research teams; focused course work; preparation and publication of research-based knowledge; and interdisciplinary learning experiences. Graduates are prepared for careers as researchers, college and university faculty members, consultants, and leaders in the profession.

The program is open to individuals who have earned a bachelor's degree in nursing or a master's degree. Applicants who hold a bachelor's degree in nursing and an advanced degree outside nursing may be admitted; their curriculum is based on a review of their transcript.

Graduate students in the College of Nursing must adhere to all Graduate College policies regarding academic standing, probation, and dismissal. Course work taken 10 or more years before a student plans to graduate from the Ph.D. program must be updated according to University policy.

The Ph.D. in nursing requires the following work.

**REQUIRED COURSES**

Basic core (required for students who enter with a bachelor's degree in nursing):

- **NURS:5007** Applied Epidemiology 3 s.h.

Advanced core:

- **NURS:5008** Foundations of Nursing Science I 3 s.h.
- **NURS:6802** Health Policy, Law, and Advocacy 3 s.h.
- **NURS:6811** Social Determinants of Health and Health System Inequities 3 s.h.
- **NURS:7002** Designing Research 3 s.h.
- **NURS:7801** Seminar: Research Scholarship Role Development 3 s.h.
- Intermediate statistics 3 s.h.
- Clinical specialization courses 6 s.h.
- Elective course 3 s.h.

Advanced research methods:

- **NURS:7000** Foundations of Nursing Science II 4 s.h.
- **NURS:7001** Qualitative Research 4 s.h.
- **NURS:7003** Quantitative Research 4 s.h.
- **NURS:7803** Research Practicum I 1 s.h.
- **NURS:7804** Research Practicum II 1 s.h.
- **GRAD:7270** Principles of Scholarly Integrity 0-1 s.h.
- Advanced statistics 6 s.h.

**Content focus:**

- **NURS:7403** Advanced Seminar in Health Research (may be taken twice) 3 s.h.
- Cognate courses 6-9 s.h.

**Dissertation (students must earn a minimum of 11 s.h.):**

- **NURS:7805** Dissertation Research arr.

**COMPREHENSIVE EXAM AND DISSERTATION**

All Ph.D. students must complete a written and oral comprehensive examination before they begin work on the dissertation. They must write the dissertation and defend it orally.

**Certificate**

The Certificate in Advanced Practice Nursing program enables D.N.P. students who are certified in a specialty area to pursue clinical training in a second specialty area. Students choose one of four certificate subprograms: adult/gerontology nurse practitioner, family nurse practitioner, pediatric nurse practitioner, or psychiatric/mental health nurse practitioner. Certificate requirements include advanced clinical core courses and a sequence of specialty courses determined by the coordinator of the specialty area. Students who complete the D.N.P. program and the certificate requirements are qualified to sit for a professional certification examination. Visit DNP—Plans of Study for information about certificate program requirements.

**Related Certificate: Informatics**

The Graduate College offers the Certificate in Informatics with a subprogram in health informatics, which requires 18 s.h. of credit. The subprogram emphasizes the organization, management, and use of health care information; health care research, education, and practice; and information technology developments in the socioeconomic context of health care.

College of Nursing students working toward the certificate complete IGPI:5200 Health Informatics I, which explores decision-making processes and technological tools to support health care administration, management, and practice; and EPID:5200 Principles of Public Health Informatics, which focuses on systematic applications of information science, computer science, and technology to public health practice, research, and learning; methods of disease surveillance, data collection, analysis, and reporting with health informatics.

Students earn an additional 12 s.h. of credit in foundational informatics course work, including one elective chosen in consultation with their major program advisor and their certificate advisor. Students who earn credit for a thesis, project, or independent study in their major program of study may apply the credit as an elective if the certificate advisor determines that the subject matter is pertinent.

To learn more, see "Certificate" in the Informatics (p. 942) (Graduate College) section of the Catalog. For additional information, see Health Informatics on the Graduate College web site.

**Admission**

Applicants to College of Nursing graduate programs must meet the admission requirements of the Graduate College; see the Manual of Rules and Regulations of the Graduate College.

Applicants must have a g.p.a. of at least 3.00. The College of Nursing has additional application requirements, as follows.

Applicants whose first language is not English must score at least 81 (Internet-based) on the Test of English as a
Foreign Language (TOEFL); or they must score at least 7.0 on the International English Language Testing System (IELTS).

A criminal background check is required for all graduate students upon admission.

ADMISSION TO THE M.S.N. AND D.N.P. PROGRAMS

Application requirements specific to the M.S.N. and D.N.P. programs are:

- a bachelor's degree with a major in nursing from an accredited program;
- satisfaction of the legal requirements for the practice of nursing in Iowa;
- current written recommendations from three persons knowledgeable about the applicant's competence in the practice of nursing and potential for leadership and scholarship (forms required);
- a current résumé, goal statement, and supplemental/information form;
- transcripts from all undergraduate and graduate course work; and
- completion of an upper-level statistics course within five years of the application deadline; acceptable University of Iowa courses include BIOS:4120, PSOF:4143, STAT:3510, and STAT:4143; see Transfer Courses on ISIS for information about using equivalent courses from other institutions.

Application deadline for the M.S.N. program is February 1.

Application deadline for the D.N.P. program is February 1 for all specialties except anesthesia nursing, which has a June 1 application deadline.

Applications to both programs are reviewed once a year. In order to be reviewed, the application must be complete, with all materials submitted.

Applicant interviews are required for the D.N.P. and M.S.N. programs; in some cases, telephone interviews may be arranged. D.N.P. applicants with master's degrees in nursing from other schools must provide verification of completed clinical hours from their school's graduate director or must submit appropriate course syllabi.

Due to the level of web-based course work required, international students in the M.S.N.-Clinical Nurse Leader and Doctor of Nursing Practice programs of study are not eligible for F-1 or J-1 student immigration status. Questions regarding visas and immigration documentation should be directed to International Student and Scholar Services (ISSS).

ADMISSION TO THE PH.D. PROGRAM

The Ph.D. program accepts applications from individuals who have earned a bachelor's degree in nursing.

Applicants to the Ph.D. program must have taken the Graduate Record Examination (GRE) General Test, preferably within the preceding five years. They must have completed an accredited basic nursing program and must hold a current license to practice nursing (special license for international students). They also must have a g.p.a. of at least 3.00. Applicants must submit:

- a two-to-three-page statement describing their educational objectives, career goals, and an area of research for their doctoral study;
- three recommendations from nursing professionals that speak to the applicant's potential as a scholar;
- a current résumé or curriculum vitae; and
- a complete transcript of all college programs and courses.

Applicants who hold a master's degree must have successfully completed at least one graduate-level course in research and inferential statistics (3 s.h.).

Applicants with a bachelor's degree in nursing who apply directly to the Ph.D. program must have successfully completed an upper-level course in statistics. They also must submit a strong statement of their educational goals, career goals, and potential area of research.

Application deadlines for the Ph.D. program are November 15, March 1, and June 1. In order to be reviewed, the applicant's file must be complete, with all materials submitted.

Professional Improvement

Registered nurses who wish to take University of Iowa course work to fulfill professional or personal improvement objectives may request admission in the professional improvement (PI) category. This admission status allows students to take some graduate courses at the University without committing to a degree objective.

Admission as a nursing professional improvement student requires a formal application, including submission of three current written recommendations and all academic transcripts. GRE General Test scores, required by the University, must be submitted before the end of first semester registration.

Application deadlines are July 15 for fall semester admission, December 1 for spring semester admission, and May 1 for summer session admission.

Since acceptance as a PI student does not influence acceptance to the college's graduate degree programs, PI students interested in earning a graduate degree in nursing must apply for admission to the degree program (see "Admission" under "Graduate Programs" above). Students may count a maximum of 6 s.h. or two required nursing core courses that they complete as PI students toward M.S.N. requirements. Professional improvement students may not enroll in Ph.D. courses.

Continuing Education

The college offers nonacademic, short-term continuing education programs for registered nurses. Continuing Education Units (CEUs) are awarded for these programs. The College of Nursing is an Iowa Board of Nursing approved provider of continuing education, Provider Number 1.

Student Organizations

All College of Nursing B.S.N. prelicensure students are members of the National Student Nurses Association and its local chapter, the Iowa Association of Nursing Students (IANS). The University of Iowa Association of Nursing Students (UIANS) provides opportunities for
professional growth and development in nursing. UIANS representatives are members of the University of Iowa Student Government (UISG).

The University of Iowa Multicultural Nursing Association (UIMNA) provides support and network opportunities for leadership and professional growth and development for underrepresented students who are undergraduate nursing interest and nursing majors, graduate nursing students, and underrepresented nursing professionals in the region.

University of Iowa Men in Nursing (UIMIN) provides opportunities for nurses to meet, to recruit, to talk, and to influence the environment for men in nursing. It is open to all nursing students.

The college’s Association of Graduate Nursing Students (AGNS) provides opportunities for professional growth, sharing of research, and representation on varied college and University committees.

Facilities

The College of Nursing Building is centrally located on the University’s main campus, in close proximity to the Carver College of Medicine, the College of Dentistry, the College of Pharmacy, the College of Public Health, University of Iowa Hospitals and Clinics, Bowen Science Building, and the Hardin Library for the Health Sciences.

The college’s building was completed in 1971. Administrative offices are located on the first floor, a research suite is on the second floor, and faculty offices are on the third and fourth floors. The lower level houses the Office of Student Services; a student lounge; a computer lab; and the Ph.D. student office, with desk space, access to computers, a printer, a copier, and a meeting space. Classrooms are located throughout the building.

The Nursing Clinical Education Center provides clinical experiences for nursing students and serves as a resource for the University’s professional nursing staff. Opened in 2006 at University of Iowa Hospitals and Clinics, the center offers the latest technology in an 11-room clinical simulation lab. It also has an 86-seat classroom, a resource library, and gathering spaces for private study. The center is operated collaboratively by the College of Nursing and UI Hospitals and Clinics Department of Nursing Services and Patient Care.

Courses

Lower-Level Undergraduate

NURS:1020 First-Year Seminar 1 s.h.
Introduces first-year undergraduate students to the intellectual life of the University of Iowa; provides an opportunity to work closely with a faculty member or senior administrator; seminars help students make the transition to college-level learning through active participation in their own learning.

NURS:1030 Human Development and Behavior 3 s.h.

Normal developmental transitions experienced by individuals and family systems throughout the lifespan, including physical, cognitive, and social-emotional development. Prerequisites: PSY:1001. Requirements: nursing or nursing-interest major.

NURS:1800 Basic Aspects of Aging 3 s.h.

Upper-Level Undergraduate and Graduate

NURS:3099 Leadership U 1-3 s.h.
Development of leadership in nursing; application of leadership theory in practice by participating in activities such as attending professional organization meetings, acting as a delegate, writing legislation, holding a board position, or being part of a multidisciplinary or international team to organize events for community involvement. Requirements: nursing major.

NURS:3110 Healthcare Finance 3 s.h.
Basic structure of U.S. health care system and how it is funded; tools for making decisions about available financial resources.

NURS:3128 Health Assessment and Communication Across the Lifespan 3 s.h.
Assessment and communication skills; development and application of cognitive skills to perform systematic, holistic, and culturally competent health assessments; emphasis on application of clinical reasoning involving assessment, nursing diagnoses, interventions, and outcomes. Corequisites: NURS:3138 and NURS:3150 and NURS:3160 and NURS:3518. Requirements: admission to the College of Nursing.

NURS:3138 Nursing and Pharmacological Interventions I 5 s.h.
First of a two-part series focusing on basic biophysical concepts that inform nursing and pharmacological interventions, including sleep, immobility, skin care, wound healing, infection, and human response to illness; selected disorders and/or diseases, including GI disease, disorders of bowel and urine elimination, diabetes, and cancer; introduction to health literacy and principles of health education. Prerequisites: ACB:3110 and BIOL:1141 and CHEM:1070 and CHEM:1080 and HHP:3500 and MATH:1440 and MICR:3164. Corequisites: NURS:3128 and NURS:3150 and NURS:3160 and NURS:3518. Requirements: 64 s.h. of undergraduate course work, including successful completion of required science courses and general education liberal arts and sciences requirements and electives.
NURS:3150 Clinical Simulation Laboratory I 3 s.h.
First of a two-part series focusing on laboratory-based learning and simulation experience involving basic biophysical and psychosocial assessment skills needed to provide safe and effective nursing care across diverse settings and populations; emphasis on development of nurse-patient and intra- and inter-professional communication skills. Requirements: admission to the College of Nursing.

NURS:3160 Professional Role I: Professionalism and Patient Safety 3 s.h.
Introduction to inherent nursing values, history, theories, and scope of professional nursing; concepts of safety, risk identification, and clinical decision making; information technologies that promote quality and safety. Requirements: admission to the College of Nursing.

NURS:3198 Distance Education: Independent Study 1-3 s.h.
Supervised study designed for individual undergraduate students.

NURS:3199 Independent Study arr.
Supervised study designed for individual undergraduate students.

NURS:3438 Nursing and Pharmacological Interventions II 5 s.h.
Second of a two-part series focusing on complex biophysical concepts that inform nursing and pharmacological interventions, including fluids and electrolytes, shock, and perioperative care; focus on selected disorders and/or diseases, including neurological, immune, musculoskeletal, cardiovascular, respiratory, renal, and endocrine disorders. Prerequisites: NURS:3138 and NURS:3150. Corequisites: NURS:3450 and NURS:3460 and NURS:3620 and NURS:3625.

NURS:3450 Clinical Simulation Laboratory II 2 s.h.
Second of a two-part series focusing on laboratory-based learning and simulation experience involving complex biophysical and psychosocial assessment skills, critical thinking, and decision making needed to provide safe and effective nursing care across diverse settings and populations; emphasis on development of clinical reasoning skills across the lifespan, including end-of-life care. Prerequisites: NURS:3128 and NURS:3138 and NURS:3150 and NURS:3160 and NURS:3518. Corequisites: NURS:3438.

NURS:3460 Professional Role II: Research 3 s.h.
Introduction to concepts and process of research in nursing; primary focus on understanding research and its foundation for nursing practice. Requirements: basic statistics. Recommendations: upper-level statistics.

NURS:3518 Pathology 3 s.h.
Introduction to abnormal functioning of cells, tissues, organs, and systems over the human lifespan; focus on hematological, immune, neurological, musculoskeletal, cardiovascular, respiratory, renal, gastrointestinal, endocrine, and reproductive system; alterations in metabolic processes and alterations in homeostatic mechanisms impacting the internal milieu; emphasis on critical thinking. Prerequisites: ACB:3110 and BIOL:1141 and CHEM:1070 and CHEM:1080 and HHP:3500 and MICR:3164.

NURS:3595 Nonprofit Organizational Effectiveness I 3 s.h.

NURS:3600 Nonprofit Organizational Effectiveness II 3 s.h.
Qualities for leadership of nonprofit organizations, including relationships with staff and volunteers; relationship of nonprofit and outside world; marketing, public relations, advocacy strategies for nonprofits. Same as MGMT:3600, SSW:3600, RELS:3701.

NURS:3615 Adult Medical/Surgical Nursing Practicum 3 s.h.
In-depth clinical experience; application of basic and complex concepts of nursing care for adults of all ages in a variety of settings, focus on older adults; development and application of critical thinking skills necessary to understand disease process, associated signs and symptoms; emphasis on interventions and outcomes. Prerequisites: NURS:3128 and NURS:3138 and NURS:3150 and NURS:3160 and NURS:3518. Corequisites: NURS:3438 and NURS:3450 and NURS:3460 and NURS:3620 and NURS:3625.

NURS:3620 Gerontological Nursing 3 s.h.
Nurse's role in promoting, maintaining, and restoring the health of aging adults; internal and external influences on older adults, application of nursing science to the care of older adults in diverse settings. Prerequisites: NURS:3128 and NURS:3138 and NURS:3150 and NURS:3160 and NURS:3518. Corequisites: NURS:3438 and NURS:3450 and NURS:3460 and NURS:3620.

NURS:3625 Gerontological Nursing Practicum 2 s.h.
In-depth clinical experience designed to apply basic and complex concepts of nursing care for adults of all ages in a variety of settings; focus on older adults; development and application of critical thinking skills necessary to understand disease process and the associated signs and symptoms, interventions, and outcomes. Prerequisites: NURS:3128 and NURS:3138 and NURS:3150 and NURS:3160 and NURS:3518. Corequisites: NURS:3438 and NURS:3450 and NURS:3460 and NURS:3615 and NURS:3620.
NURS:3630 Parent-Child Nursing  3 s.h.
Promoting, maintaining, and restoring the health of parents, infants, children, and adolescents in childbearing and childrearing families; nursing care prior to and during pregnancy, labor, and delivery; care of newborns, well children, and children with acute and chronic illness examined within the context of family and community. Prerequisites: NURS:3128 and NURS:3138 and NURS:3150 and NURS:3438 and NURS:3450 and NURS:3518. Corequisites: NURS:3640 and NURS:3645 and NURS:3660.

NURS:3635 Parent Child Nursing Practicum  2 s.h.
Application of nursing knowledge to promote, maintain, and restore health; vulnerable populations of interest including persons with mental health disorders, infants, children, adolescents, their families; processes of childbearing and childrearing within context of families. Prerequisites: NURS:3615 and NURS:3625. Corequisites: NURS:3630 and NURS:3640 and NURS:3645 and NURS:3660. Requirements: successful completion of two semesters in B.S.N. curriculum.

NURS:3640 Psychiatric/Mental Health Nursing  3 s.h.
General principles and practices of psychiatric/mental health nursing; psychiatric disorders, populations at risk, continuity of care, and problems in daily living; unique needs of diverse populations. Prerequisites: NURS:3128 and NURS:3138 and NURS:3150 and NURS:3438 and NURS:3450 and NURS:3518. Corequisites: NURS:3630 and NURS:3645 and NURS:3660.

NURS:3645 Mental Health Nursing Practicum  2 s.h.
Application of nursing knowledge to promote, maintain, and restore health; vulnerable populations of interest including persons with mental health disorders, infants, children, adolescents, their families; processes of childbearing and childrearing within context of families. Prerequisites: NURS:3615 and NURS:3625. Corequisites: NURS:3630 and NURS:3635 and NURS:3640 and NURS:3660. Requirements: successful completion of two semesters in B.S.N. curriculum.

NURS:3650 Community and Public Health Nursing  3 s.h.
Role of nursing in the relationship between community conditions and public health; emphasis on principles of public health combined with nursing knowledge and skills to address health needs of individuals, families, communities, and populations. Prerequisites: NURS:3110 and NURS:3160 and NURS:3460 and NURS:3518 and NURS:3660. Corequisites: NURS:3655. Requirements: for pre-licensure B.S.N. student — successful completion of NURS:3620, NURS:3625, and NURS:3645, and concurrent enrollment in NURS:4155 and NURS:4160; for post-licensure RN-B.S.N. student — successful completion of NURS:4160, 6 s.h. of required nursing elective courses, and completion of general education electives.

NURS:3655 Community and Public Health Nursing Practicum  2 s.h.
Learning opportunities to apply principles of public health with nursing knowledge and skills to address health promotion, disease and injury prevention, and nursing management of infectious disease and chronic health conditions; nursing activities focus on improvement of health outcomes at individual, family, community, and global levels within the context of population-focused practice. Corequisites: NURS:3650. Requirements: for pre-licensure B.S.N. student — successful completion of NURS:3625 and NURS:3645, and concurrent enrollment in NURS:4155 and NURS:4160; for post-licensure RN-B.S.N. student — successful completion of NURS:3310 and NURS:3360 and NURS:3460 and NURS:3518 and NURS:3660 and NURS:3734 and NURS:4160, 6 s.h. of required nursing electives, completion of general education electives, RN licensure in state of practicum, and concurrent enrollment in NURS:3734, if not taken as a prerequisite.

NURS:3660 Professional Role III: Improving Health Systems  2-3 s.h.
Legal and regulatory processes that impact health care, how disparities influence health care, and evidence-based approaches for improving quality of care; strategies for working effectively in intra and interdisciplinary teams; integration of a culture of safety. Prerequisites: NURS:3160 and NURS:3460.

NURS:3712 Human Sexuality, Diversity, and Society  1-3 s.h.
Physiological, psychological aspects; parameters defined by students, instructor. Same as SSW:3712.

NURS:3715 Health Disparities and Cultural Competence  2-4 s.h.
Characteristics, causes, and effects of health disparities in the U.S. health care system; foundation for development of knowledge, attitudes, and skills required of culturally competent health care providers; definitions and models of cultural competence, characteristics of culturally effective practitioners and workplaces; health disparities among specific populations, evidence for cultural competence as a remedy; taking a culturally appropriate history; working with interpreters; legal and professional imperatives for cultural competence. Same as PHAR:8715.

NURS:3728 Patient Safety for Health Professional Students  2 s.h.
Interprofessional experience using multiple pedagogic methods, including team-based simulation to teach about patient safety and teamwork; collaboratively taught by representatives from anesthesia, pediatrics, internal medicine, Office of Consultation and Research in Medical Education, College of Nursing, College of Public Health, and office of UIHC chief quality officer. Same as MED:8410.

NURS:3730 Teaching and Learning Online  3 s.h.
Synthesis and critical evaluation of current knowledge regarding use of online learning as a tool; empirical research, best practices, and available resources to support effective implementation and management of online learning; skill development and practice; web-based course.

NURS:3734 Introduction to Human Genetics  3 s.h.
Supervised study designed for individual honors students.

**NURS:4098 Honors Seminar** 1 s.h.
Supervised study designed for individual honors students.

**NURS:4098 Honors Seminar** 1 s.h.

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**NURS:3739 Women and Their Bodies in Health and Illness** 3 s.h.
Basic facts about structure and functioning of female body; particular attention to adjustments the body makes during normal physiological events (menstruation, sexuality, reproduction, menopause) and during illness processes; women's mental and physical health issues in relation to women's lives and roles in society; relationship of women as consumers, practitioners, and activists to health system; achievements and limitations of women's health movements; anti-oppression, intersectionalities, and cross-cultural perspectives. Same as GWSS:3177.

**NURS:3740 End-of-Life Care for Adults and Families** 2-4 s.h.

**NURS:3742 Selected Topics in Nursing** 1-2 s.h.
In-depth study of topics in professional nursing practice and health care; workshop format.

**NURS:3746 Clinical Instruction in Nursing Education** 3 s.h.
Role and functions of the nurse educator in the clinical setting; development of teaching strategies and learning activities that support effective clinical and laboratory instruction; evidence-based teaching and evaluation practices; how to incorporate the core concepts of critical thinking for clinical decision-making, effective communication, and cultural competence into clinical experiences; learners with diverse learning styles and backgrounds; ethical and legal implications in clinical teaching and evaluation of learning; technology and emerging trends that impact teaching in the clinical setting. Requirements: RN-B.S.N. or graduate standing.

**NURS:4096 Distance Education: Honors Independent Study** 1-3 s.h.
Supervised study designed for individual honors undergraduate students.

**NURS:4099 Honors Independent Study** 1-3 s.h.
Supervised study designed for individual honors students.

**NURS:4155 Senior Nursing Internship** 5 s.h.
Immersion capstone experience to engage in practice under direct supervision of a professional registered nurse mentor; design, provide, coordinate, and evaluate care; work with teams to deliver evidence-based care; improve quality, patient safety, and outcomes. Prerequisites: NURS:3128 and NURS:3138 and NURS:3150 and NURS:3160 and NURS:3438 and NURS:3450 and NURS:3460 and NURS:3518 and NURS:3620 and NURS:3625 and NURS:3630 and NURS:3640 and NURS:3645 and NURS:3660. Corequisites: NURS:3650 and NURS:3655 and NURS:4160.

**NURS:4160 Professional Role IV: Leadership and Professional Engagement** 3,5 s.h.
Concepts of leadership, followership, management, informatics, and professional engagement; quality improvement strategies and skills; professional development, career trajectory, and role transitions. Prerequisites: NURS:3160 and NURS:3460. Corequisites: NURS:3660, if not taken as a prerequisite.

**NURS:4170 Baccalaureate Seminar** 1 s.h.
Examination of didactic and clinical learning experiences; documentation of changes in knowledge, skills, and attitudes to demonstrate achievement of relevant competencies; group discussion and reflective writing assignments to evaluate professional growth that has occurred during the B.S.N. program.

**NURS:4205 Communication for the Professional Nurse** 0 s.h.
Communication with all members of a health care team to deliver safe, high quality care; introduction to transition stages, survival strategies, journaling and reflecting; how to develop a professional growth plan; first in a three-part series. Requirements: enrollment in online nurse residency program.

**NURS:4210 Responsibilities of the Professional Nurse** 0 s.h.
Understanding and application of concepts of safety, quality improvement, and evidence-based practice to improve patient care; second in a three-part series. Prerequisites: NURS:4205. Requirements: enrollment in online nurse residency program.

**NURS:4215 Decision Making at the Point of Care** 0 s.h.
Making the right decision when providing care to all patients to deliver safe and high quality care; third in a three-part series. Prerequisites: NURS:4205 and NURS:4210. Requirements: enrollment in online nurse residency program.

**NURS:4216 Group Facilitation in Human Sexuality** 0-3 s.h.
Principles of group dynamics, group process; leadership skills for small, task-oriented discussion groups on human sexuality. Prerequisites: SSW:3712. Same as SSW:4216.
Graduate courses are offered only if minimum enrollments are maintained.

**NURS:5002 Leadership and Management Essentials** 3 s.h.
Roles and strategies for leading and managing others in health care environments to influence health care delivery and provide a healthy, innovative working environment; focus on selected leadership and organizational concepts essential to leaders in health care. Requirements: graduate standing.

**NURS:5007 Applied Epidemiology** 3 s.h.
Basic principles and methods of epidemiology; application to field of nursing and nursing research; historical perspective of epidemiology, epidemiological models of health and disease, measures of disease occurrence and association, disease screening, causal inference, study design and application of epidemiological approaches to clinical practice, program planning and evaluation.

**NURS:5008 Foundations of Nursing Science I** 3 s.h.
Integration of interdisciplinary theories and philosophies of science relevant to nursing; emphasis on application of theory and philosophy in advanced nursing practice and research. Requirements: doctoral standing.

**NURS:5009 Evaluating Evidence for Practice** 3 s.h.
Opportunity for clinicians to develop proficiency in use of research- and evidence-based practice; essentials of the research process, qualitative and quantitative research, components of evidence-based practice; acquisition of knowledge and skills necessary for research (knowledge) utilization initiatives and application of evidence-based practice principles in clinical settings; identification of appropriate research questions, synthesis of knowledge base for evidence-based practice, revision of clinical practice guidelines, and evaluation of research utilization and evidence-based practice initiatives.

**NURS:5015 Health Systems, Finance, and Economics** 3 s.h.
Global, economic, organizational, legal, political, and technological contexts in advanced nursing practice; knowledge and skills necessary for understanding the evolution of health care services, financing of health care, and relationships among socioeconomic systems influencing health care and nursing practice; impact of macrosystems on distribution, acquisition, and use of financial and economic principles in delivery of health care services. Prerequisites: NURS:5002.

**NURS:5016 Healthcare Infrastructure and Policy** 3 s.h.
Health care infrastructure; health care reform and its implementation; political theories, policy definition, role of health professionals in policy-making process, information technology and its role in patient care, cultural factors affecting access and quality of care.

**NURS:5017 Quality and Safety** 3 s.h.
Foundation for understanding concepts of safety and quality across health care settings; providing a safe environment; elevating staff performance and clinical outcomes related to safety and quality; methods for continuous improvement.

**NURS:5018 Clinical Education in the Care Environment** 3 s.h.
Preparation to assume role of educator with individuals, groups, and communities, including staff and students; teaching/learning process for providing client education; knowledge and skills needed to effectively fill role of preceptor/mentor.

**NURS:5019 Role Development: Educator in a Practice Discipline** 3 s.h.
Becoming an educator in a practice discipline; unique knowledge, skills, approaches to didactic and clinical teaching; overview of curriculum development process that affects revision/development; faculty role in curriculum development and evaluation; knowledge and skills to create a learner-centered environment for professional students; key facilitation and evaluation strategies; application of concepts during field experience working directly with experienced faculty.

**NURS:5021 Physiology, Pathophysiology, and Pharmacology I for the Clinical Nurse Leader** 3 s.h.
Basic scientific concepts required for B.S.N. and clinical nursing experience; matches physiology and pathophysiology with pharmacological treatments as combined core elements; focus on regulation of cellular, organ, and system functions; regulation of internal milieu; functional interrelationships among body systems; cellular and body-wide defense mechanisms; synthesis of information related to pathophysiological phenomena; pharmacokinetic and pharmacodynamics principles essential for general practice; specific drug classes used in management of clinical conditions. Two semesters.

**NURS:5022 Physiology, Pathophysiology, and Pharmacology II for the Clinical Nurse Leader** 3 s.h.
Basic scientific concepts required for B.S.N. and clinical nursing experience; matches physiology and pathophysiology with pharmacological treatments as combined core elements; focus on regulation of cellular, organ, and system functions; regulation of internal milieu; functional interrelationships among body systems; cellular and body-wide defense mechanisms; synthesis of information related to pathophysiological phenomena; pharmacokinetic and pharmacodynamics principles essential for general practice; specific drug classes used in management of clinical conditions. Two semesters. Prerequisites: NURS:5021.

**NURS:5023 Pathophysiology for Advanced Clinical Practice I** 2 s.h.
Builds on foundational knowledge of human physiology; in-depth study of pathophysiologic processes across lifespan; focus on disregulation of cellular, organ, and system functions, clinical manifestations of common disease states, resultant physiological responses to internal milieu, interrelationships among body system; cellular and body-wide defense mechanisms; synthesis of evidence-based information from varied sources related to selected pathophysiological phenomena. Two semesters. Prerequisites: MPB:5200. Corequisites: NURS:5033.
NURS:5024 Pathophysiology for Advanced Clinical Practice II
Builds on foundational knowledge of human physiology; in-depth study of pathophysiologic processes across lifespan; focus on dis regulates of cellular, organ, and system functions, clinical manifestations of common disease states, resultant physiological responses to internal milieu; interrelationships among body system, cellular and body-wide defense mechanisms; synthesis of evidence-based information from varied sources related to selected pathophysiological phenomena. Two semesters. Prerequisites: NURS:5023. Corequisites: NURS:5034.

NURS:5025 Physiology and Pathophysiology for Advanced Clinical Practice
Regulation of cellular, organ, and system function; regulation of internal milieu; functional interrelationships among body systems; cellular and body-wide mechanisms of self-defense; illustrative examples of pathological phenomena.

NURS:5029 Pharmacotherapeutics for Advanced Clinical Practice
Pharmacologic, pharmacokinetic, and pharmacodynamic principles essential for advanced clinical practice; classes of drugs frequently used in management of common clinical conditions; legal considerations in prescriptive authority. Prerequisites: NURS:5025.

NURS:5031 Health Promotion and Assessment for Advanced Clinical Practice
Didactic and clinical laboratory instruction; emphasis on knowledge and skills necessary for advanced health assessment and health promotion interventions for individuals and families across the lifespan; emphasis on selected populations and persons with specific pathology.

NURS:5032 Mental Disorders in Advanced Practice
Foundation for advanced practice nurse to provide care for common mental health disorders; presentation of neurophysiological, genomic, environmental/social, and developmental theories to understand etiology and presentation of common mental health conditions; psychopharmacological and nonpharmacological principles and modalities for treatment of common mental health problems. Requirements: admission to direct care DNP program.

NURS:5033 Pharmacotherapeutics for Advanced Practice Nursing I
Pharmacotherapeutic principles essential for advanced clinical practice; specific drug classes frequently used in management of clinical conditions experienced by various patient populations; legal considerations related to prescriptive authority and prescribing patterns. First in a two-course series. Corequisites: NURS:5023.

NURS:5034 Pharmacotherapeutics for Advanced Practice Nursing II
Pharmacotherapeutic principles essential for advanced clinical practice; specific drug classes frequently used in management of clinical conditions experienced by various patient populations; legal considerations related to prescriptive authority and prescribing patterns. Second in a two-course series. Prerequisites: NURS:5033. Corequisites: NURS:5024.

NURS:5035 Graduate Pharmacology Specialty
Principles of pharmacology learned in NURS:5033 and NURS:5034; principles and practices necessary for safe prescribing and medication management of a specialty population (e.g., pediatrics, geriatrics, adult care, mental health). Prerequisites: MPB:5200 and NURS:5023 and NURS:5024 and NURS:5033 and NURS:5034.

NURS:5401 The Care of the Frail Elderly
Clinical management of the elderly; emphasis on economic considerations, principles of gerontological care, common syndromes, ethical issues; clinical application experience in a long-term care setting. Prerequisites: NURS:5029. Same as ASP:5401.

NURS:5500 Advanced Practice Genetic Nursing I
Advanced practice genetic nursing for those at risk for genetic conditions or a condition with a genetic component; application of genetic/genomic science to nursing practice including chromosomal variations; Mendelian and nontraditional inheritance; preconception and prenatal health care in genetics; dysmorphology examinations; developmental delay associated with genetic conditions; application of molecular methodology to clinical and research practice; beliefs about race and ethnicity in the genomic era; ethical, legal, and social implications of genetic nursing. Corequisites: NURS:3734. Requirements: enrollment in APN-Genetics M.S.N. program.

NURS:5501 Advanced Practice Genetic Nursing II
Advanced practice genetic nursing for individuals, families, and populations who are at risk for genetic conditions or who have a condition with a genetic component; application of genetic science to nursing assessments, interventions, and outcomes; genomics and the delivery of health care in primary and public health; pharmacogenetics; genomic therapeutics; childhood onset genetic disorders; adult onset genetic disorders; part two of the Advanced Practice Nursing Genetics course series. Prerequisites: NURS:3734 and NURS:5500. Requirements: enrollment in APN-Genetics M.S.N. program.

NURS:5636 Clinical Nurse Leader Seminar
Evolution of clinical nurse leader (CNL) role, eight core role functions, and the process of integration of CNL role into health care system. Requirements: admission to M.S.N.-CNL program.

NURS:5666 Leadership in the Microsystem
Assessment of the microsystem of practice, clinical nurse leader role as leader embedded in a microsystem, and identification of opportunities to enhance care delivery in the microsystem. Requirements: admission to M.S.N.-CNL program.
NURS:5696 CNL Capstone Clinical Immersion 6 s.h.
Intensive immersion in role and practice expectations of the CNL; experienced leaders within the microsystem, who are experts in the provision of clinical services at the point of care/services, serve as mentors. Requirements: concurrent enrollment in master's portfolio.

NURS:5800 Independent Study arr.
Supervised study and/or clinical practice adjusted to needs of master's degree students. Requirements: M.S.N. enrollment.

NURS:5801 Master's Project 2-3 s.h.
Opportunity for in-depth analysis and synthesis of a chosen topic that contributes to some aspect of nursing practice.

NURS:5802 Master's Portfolio 0 s.h.
Opportunity for clear and cohesive synthesis of clinical or professional experiences and competencies, including those gained in graduate study, that portray graduates' clinical or professional strengths and career goals.

NURS:5803 Distance Education: Master's arr.
Independent Study
Supervised study and/or clinical practice adjusted to needs of master's degree students. Requirements: M.S.N. enrollment.

NURS:5804 Distance Education: Master's Portfolio 0 s.h.
Clear and cohesive synthesis of clinical or professional experiences and competencies, including those gained in graduate study; students' clinical or professional strengths and career goals. Requirements: M.S.N. enrollment.

NURS:5805 Thesis arr.
Opportunity for systematic investigation of a nursing problem of student's choice under guidance of faculty.

NURS:6000 Human Anatomy for Advanced Practice 3 s.h.
Integrated study of interrelationships between anatomic structure and physiological function in health and disease at various points in the lifespan; mechanisms governing and supporting cellular, organ, and system function; internal milieu; relationship of study to clinical assessment of functional integrity of individual organ systems utilizing pertinent objective and subjective data; implications of pathophysiology for anesthesia and implications of anesthesia for pathophysiology; foundation for clinical practicums and courses in nurse anesthesia. Requirements: admission to anesthesia nursing program. Recommendations: completion of an undergraduate human anatomy and physiology course. Same as ACB:6000.

NURS:6005 Chemical and Physical Principles of Anesthesia Practice 3 s.h.
Basic chemical and physical properties of molecules fundamental to practice of anesthesia; relationship of these properties in relation to physiological processes and pharmacological principles essential in monitoring a patient's physical status and administration of anesthesia medications; basic chemical and physical calculations, properties of substances in solution, measurement of such chemical species, behavior of gases and other fluids, effects of heat transfer, specific chemistry of inhaled and intravenous anesthetics and adjuvant drugs. Requirements: admission to anesthesia nursing program. Same as ANES:6005.

NURS:6006 Pharmacology of Anesthesia Practice 3 s.h.
Builds on content from foundational graduate pharmacology course; focus on safe prescribing, administration, and management of medications used to provide general, regional, or local anesthesia and analgesia for all patient populations across lifespan undergoing varied surgical, obstetrical, or other procedures in any health care setting. Prerequisites: PCOL:6204. Requirements: grade of 2.75 or higher in PCOL:6204 and enrollment in anesthesia nursing program. Same as ANES:6006.

NURS:6007 Basic Principles of Anesthesia Practice 5 s.h.
Overview and integration of anesthetic agents and techniques; patient assessment, preoperative airway evaluation, anesthetic planning, principles of fluid management, and arterial blood gas interpretation; principles of general and regional anesthesia and techniques as they pertain to each surgical specialty; Occupational, Safety and Health Administration (OSHA), The Joint Commission (TJC), and institutional regulations and requirements pertinent to anesthesia practice. Prerequisites: NURS:6006 and NURS:6016. Requirements: grade of 2.67 or higher in NURS:6006 and NURS:6016. Same as ANES:6007.

NURS:6010 Advanced Principles of Anesthesia Practice I 4 s.h.
Special needs and intraoperative anesthetic management of complex patient populations and those with advanced pathologic states; anesthetic techniques for specific surgical subspecialties including obstetrics, neurosurgery, cardiac, vascular, thoracic, transplant, trauma, EENT, dental, and aesthetic or reconstructive procedures; pertinent pathophysiology and anesthetic monitoring and management techniques; clinical case conferences provide opportunities to discuss perianesthetic complications and challenges. Prerequisites: NURS:6007 or ANES:6007. Requirements: grade of 2.67 or higher in NURS:6007. Same as ANES:6010.

NURS:6012 Advanced Principles of Anesthesia Practice II 1 s.h.
Acute and chronic pain treatment modalities for all patients presenting for a variety of medical or surgical procedures across the lifespan. Prerequisites: NURS:6007 or ANES:6007. Requirements: grade of 2.67 or higher in NURS:6007. Same as ANES:6012.
NURS:6016 Equipment and Technological Principles of Anesthesia Practice 3 s.h.
Introduction to gas and anesthesia delivery systems, ancillary equipment, monitoring devices, infusion devices, invasive line placement, airway management equipment, and anesthesia electronic medical record keeping; correlation of applicable chemical and physical principles for use, safe operation, and care of all anesthesia and related equipment. Prerequisites: NURS:6005 or ANES:6005. Corequisites: NURS:6006. Requirements: anesthesia nursing program enrollment. Same as ANES:6016.

NURS:6050 Introductory Clinical Anesthesia 2 s.h.
Initial mentorship in clinical anesthesia; development of basic clinical skills needed for a career as nurse anesthetist; application and integration of theoretical knowledge in clinical setting. Prerequisites: NURS:6006 and NURS:6016. Corequisites: NURS:6007. Same as ANES:6050.

NURS:6051 Clinical Anesthesia I 2 s.h.
Mentored clinical anesthesia experience; advancement and enhancement of clinical skills in providing anesthesia for various surgical subspecialties including general, orthopedic, pediatric, gynecologic, urologic, dental, ENT, ambulatory surgery, and invasive diagnostic procedures. Prerequisites: NURS:6050 or ANES:6050. Corequisites: NURS:6010. Same as ANES:6051.

NURS:6052 Clinical Anesthesia II 2 s.h.
Additional mentored clinical anesthesia experience; advancement and enhancement of clinical skills in providing anesthesia for various surgical subspecialties including general, orthopedic, pediatric, gynecologic, urologic, dental, ENT, ambulatory surgery, and invasive diagnostic procedures. Prerequisites: NURS:6051 or ANES:6051. Same as ANES:6052.

NURS:6053 Advanced Clinical Anesthesia 2 s.h.
Mentored clinical anesthesia at selected sites; development of advanced clinical skills and critical thinking by providing anesthesia for all surgical specialties and invasive diagnostic procedures in all anesthetizing locations; providing anesthesia for all patients in all settings, including on call emergency surgeries. Prerequisites: NURS:6052. Same as ANES:6053.

NURS:6054 Obstetrical Anesthesia 2 s.h.
Experience delivering analgesia and anesthesia for parturients during labor and delivery process. Same as ANES:6054.

NURS:6055 Rural Anesthesia 2 s.h.
Opportunity to develop experience providing anesthesia and associated health care services at UI-affiliated clinical sites in rural settings. Prerequisites: NURS:6052. Same as ANES:6055.

NURS:6100 Primary Care: Infants, Children, and Adolescents I 3 s.h.
Enhancement of clinical knowledge and skills for infant, child, adolescent care. Prerequisites: NURS:5025 and NURS:5029.

NURS:6101 Primary Care: Infants, Children, and Adolescents II 3 s.h.

NURS:6200 Primary Care: Infants, Children, and Adolescents II 3 s.h.
Enhancement of clinical knowledge and skills for infant, child, adolescent care; development and refinement of knowledge and skills in primary health care delivery. Requirements: for NURS:6200 — NURS:6201 or NURS:6200; for PEDS:6101 — NURS:6100 and NURS:6200. Same as PEDS:6101.

NURS:6201 Primary Care: Adults and Older Individuals I 3 s.h.
Continuation of NURS:6200. Prerequisites: NURS:6200.

NURS:6202 Primary Care: Adults and Older Individuals II 3 s.h.
Continuation of NURS:6201. Prerequisites: NURS:6201.

NURS:6500 Psychiatric/Mental Health Nursing Theory I 4 s.h.
Introduction to psychological and theories related to mental health across the life span, intersections between physical and mental health, and role of advanced practice nurse in psychiatric/mental health care; examination of psychological theory in a life span developmental framework from infancy to older adult; role of cultural diversity in mental health; emphasis on assessment, diagnosis, and management of mental disorders common in adults. Prerequisites: NURS:5025 and NURS:5032. Corequisites: NURS:6701.

NURS:6501 Psychiatric/Mental Health Nursing Theory II 4 s.h.
Builds on prior life span content with specific focus on selected populations, families, and groups; define and expand practice of psychiatric/mental health nursing based on integration of theory, standardized languages, and research; varied approaches and issues of service delivery; emphasis on methods and skills for completing a comprehensive mental health assessment and managing common psychiatric illness in childhood/adolescence and late life. Prerequisites: NURS:6500 and NURS:6701. Corequisites: NURS:6702.

NURS:6550 Executive Leadership and Management 3-4 s.h.
Leadership and management concepts and theories; application to roles unique to executive nurse leader in health care organizations in institutional and community settings; emphasis on executive leadership roles for facilitating, integrating, and coordinating complex structures, processes, and outcomes in health care systems.

NURS:6551 Financial Management 3-4 s.h.
Preparation for nurse leaders and practitioners to use techniques for financial analysis and decision making for patient care programs across the health care continuum; focus on efficient and effective management of resources for delivery of quality health care services.

NURS:6552 Managing Care in an Organizational Environment 3-4 s.h.
Manage operations of patient care services across health care continuum within the framework of an established health care organization; focus on efficient and effective management of the structure, governance, patient care delivery system of care, and outcomes of care.

**NURS:6553 Seminar on Innovations**  4 s.h.
Strategizing about taking meaningful action, disrupting stable processes, diffusing innovation, and sustaining change; emerging innovations in nursing and health care systems that impact the functions and responsibilities of nurse leaders.

**NURS:6554 Seminar on Healthy Work Environments**  3 s.h.
Application of leadership and management knowledge specific to creating and sustaining healthy work environments in health care; current and emerging issues focused on health care work environments.

**For Doctoral Students**
The following courses are open to doctoral students; others must have the instructor's consent in order to enroll.

**NURS:5806 Distance Education: Master's Project**  2-3 s.h.
In-depth analysis and synthesis of a chosen topic that contributes to some aspect of nursing practice. Requirements: M.S.N. enrollment.

**NURS:5807 Distance Education: Master's Thesis**  arr.
Systematic investigation of a nursing problem of student's choice under guidance of faculty. Requirements: M.S.N. enrollment.

**NURS:6701 Advanced Practice Clinical Practicum I**  3-4 s.h.
Application of advanced physical assessment, pathophysiology, and diagnostic reasoning in a clinical setting appropriate to a specific population.

**NURS:6702 Advanced Practice Clinical Practicum II**  3-4 s.h.
Continuation of NURS:6701; emphasis on diagnostic reasoning and formulation of treatment plans.

**NURS:6703 Advanced Practice Clinical Practicum III**  3-4 s.h.
Synthesis of role expectations for advanced practice with focus on clinical competencies appropriate to the specialization.

**NURS:6704 Practicum in Executive Leadership and Management**  4 s.h.
Immersion experience in application of principles and methods of leadership, management, and evaluation to facilitate health care operations in various settings; student collaboration with a preceptor for mentored in-depth immersion in systems practice.

**NURS:6800 Emerging Science**  3 s.h.
Emerging science to prepare leaders, advanced practice practitioners, and researchers to meet challenges of today's workforce and health care environment; opportunities to apply emerging health care science that influence health care policy, education, research, and practice.

**NURS:6802 Health Policy, Law, and Advocacy**  3 s.h.
Issues that shape health care economics and policy development; framework for understanding work of legislators and other policy makers; emphasis on state and national level; health issues in developing countries; health care system, its economics, financing, role of government, not-for-profit entities, and nongovernmental organizations. Requirements: doctoral standing.

**NURS:6808 Clinical Decision Making for Advanced Practice**  3 s.h.
Coordination and integration of care delivery for population health and clinical effectiveness across the continuum of care; management of optimized outcomes; emphasis on informatics infrastructure and translation of evidence-based practice to managing care provision and achieving desired outcomes as a result of care provision.

**NURS:6809 DNP Role Integration I**  2 s.h.
Knowledge, skills, and abilities required to function in D.N.P. role and as a leader in health care. First in a two-course sequence. Requirements: doctoral standing.

**NURS:6810 DNP Role Integration II**  2 s.h.
Synthesis and application of knowledge, skills, and abilities required to function in D.N.P. role and as a leader in health care. Second in a two-course sequence. Prerequisites: NURS:6809. Requirements: doctoral standing.

**NURS:6811 Social Determinants of Health and Health System Inequities**  3 s.h.
Social determinants of health outcomes and inequities; social and economic forces that shape them using various perspectives and lenses; conceptualization and measurement of variables representing risk and inequities that serve as the organizing framework for course discussions, including individual and social factors; critical analysis of research studies for social bias. Requirements: doctoral standing.

**NURS:6825 Clinical Leadership Project**  1-5 s.h.
Opportunity for in-depth analysis and synthesis of a practice, system, or policy problem related to advanced nursing practice; development of an evidence-based proposal to benefit a group, population, or community; demonstration of leadership in assessment, planning, implementation, and evaluation. Requirements: doctoral standing.

**NURS:6900 Computational Intelligence**  3 s.h.
Concepts, models, algorithms, and tools for development of intelligent systems; data mining, expert systems, neural networks for engineering, medical and systems applications. Prerequisites: IE:3700. Same as IE:6350.

**NURS:7000 Foundations of Nursing Science II**  4 s.h.
Introduction to philosophical, historical, and conceptual underpinnings of contemporary nursing scholarship; students read primary sources on development of nursing knowledge and classic and contemporary works in philosophy of science; how these ideas influence development of nursing thought; two critical concepts of research (cause and validity); laboratory tools for synthesis of existing literature (integrative review, systematic review, concept analysis); synthesis of literature in student’s interest area to identify and apply selected approach. Prerequisites: NURS:5008. Requirements: Ph.D. standing.

NURS:7001 Qualitative Research 4 s.h.
Qualitative research; ethnography, grounded theory, narrative, phenomenology, philosophical underpinnings, and research designs across traditions; current and emerging issues (i.e., mixed methods, meta-synthesis, working with vulnerable populations); guided exercises, peer sharing, collaborative group projects; qualitative interviewing and transcription, field work, participant observation; use of software for managing qualitative data; data coding, analysis and interpretation; critique of qualitative research proposals and manuscripts. Prerequisites: NURS:7000 and NURS:7002.

NURS:7002 Designing Research 3 s.h.
Introduction to designing research studies; issues related to research design as a set of choices influenced by aims, research questions, styles/traditions of research; conceptual frameworks/theories. Requirements: Ph.D. standing.

NURS:7003 Quantitative Research 4 s.h.
Refinement of students’ understanding of the application of scientific logic; criteria for causality, its application in health-related research; various quantitative methods; sampling theory and approaches to sample selection, recruitment, and methods; issues related to instrument selection, reliability and validity considerations; management of large data sets and maintenance of data integrity; guided exercises, peer sharing, and collaborative groups provide experiences integrated with content in didactic section. Prerequisites: NURS:7000 and NURS:7002.

NURS:7202 Genetic Nursing Research 3 s.h.
Concepts in human genetics integrated with nursing research; methodological issues in study of populations with specific genetic problems; generation of testable hypotheses.

NURS:7310 Methods and Measurement in Clinical Pain Research 2 s.h.
Basic theoretical models for understanding pain; insight into the state of science of clinical pain research; issues and challenges related to conduction of clinical pain research; designs, vulnerable populations, methodology, and measurement strategies relevant to clinical trials; comparative effectiveness and translational research studies; interdisciplinary presentations of research experiences, issues, and solutions to provide a foundation for discussion and analysis of best practices for clinical pain research. Corequisites: PTRS:6133. Requirements: Ph.D. standing. Recommendations: graduate-level research methods/design course and pathophysiology.

NURS:7400 State of the Science in Biobehavioral Research on Aging 3 s.h.
Analysis and evaluation of science in biobehavioral aging research; overview of aging research and interdisciplinary contributions; biobehavioral phenomena pertinent to aging populations; relevant epidemiologic research, population/community-based research, primary prevention research, qualitative and quantitative analyses, instrumentation, intervention research, measurement studies; ethical and methodological issues, context of care; identification of literature gaps and future research agendas that promote successful aging. Requirements: for NURS:7400 — doctoral standing; for ASP:7400 — Ph.D. enrollment. Recommendations: knowledge of pathophysiology, research design, and statistics. Same as ASP:7401.

NURS:7401 State of the Science in Geriatric Mental Health Research 3 s.h.
Analysis and evaluation of science in geriatric mental health research in nursing and other disciplines; cognitive and affective function, substance abuse, and caregiver health/support; relevant epidemiologic research, population/community-based research, primary prevention research, qualitative and quantitative analyses, instrumentation, intervention research, and measurement studies; review and analysis of program evaluation and services research, emphasis on ethical and methodological issues; identification of literature gaps and future research agendas that promote successful aging. Requirements: for NURS:7401 — doctoral standing; for ASP:7401 — Ph.D. enrollment. Recommendations: knowledge of psychopathology, research design, and statistics. Same as ASP:7401.

NURS:7403 Advanced Seminar in Health Research 3 s.h.
Health research across the lifespan and health care continuum; specific topics based on the state of the science and emerging science initiatives put forth by NIH and other funding agencies. Requirements: doctoral standing.

NURS:7509 Research Residency 3 s.h.
Participation in a research project based on an individualized plan of study, under guidance of a preceptor.

NURS:7800 Independent Study arr.
Supervised study adjusted to needs of doctoral degree students. Requirements: Ph.D. enrollment.

NURS:7801 Seminar: Research Scholarship Role Development 3 s.h.
Preparation for successful completion of doctoral course work, comprehensive examination, and dissertation; faculty-guided structure provides opportunities for students to assimilate knowledge and behavior of a scholar and activities that facilitate and optimize socialization and success as nurse scientists and academic faculty. Requirements: Ph.D. standing.
NURS:7803 Research Practicum I
1 s.h.
First of two practicums that serve as a system of apprenticeship by which students are mentored through selected aspects of scientific processes, methodologies, analysis, and dissemination of results; projects relevant to student's area of study. Requirements: Ph.D. standing.

NURS:7804 Research Practicum II
1 s.h.
Second of two practicums that serve as a system of apprenticeship by which students are mentored through selected aspects of scientific processes, methodologies, analysis, and dissemination of results; project relevant to student's area of study. Requirements: Ph.D. standing.

NURS:7805 Dissertation Research
arr.
College of Pharmacy

Dean
- Donald E. Letendre

Executive associate dean
- Bernard A. Sorofman

Associate dean, assessment, curriculum, and compliance
- Hazel H. Seaba

Associate dean, professional education
- Michael W. Kelly

Associate dean, research and graduate affairs
- Michael W. Duffel

Associate dean, undergraduate education
- Maureen D. Donovan

Associate dean, University of Iowa Hospitals and Clinics health science affairs
- Michael J. Brownlee

Assistant dean, Iowa City Veterans Affairs Medical Center
- Traviss A. Tubbs

Chair, pharmaceutical sciences and experimental therapeutics
- Robert J. Kerns

Chair, pharmacy practice and science
- Jay D. Currie

Head, applied clinical sciences
- Gary Milavetz

Head, health services research
- William R. Doucette

Head, medicinal and natural products chemistry
- Jonathan A. Doorn

Head, pharmaceutics and translational therapeutics
- Aliasger K. Salem

Director, University of Iowa Pharmaceuticals
- Mickey L. Wells

Professional degree: Pharm.D.
Graduate degrees: M.S. in pharmacy; Ph.D in pharmacy
Faculty: http://pharmacy.uiowa.edu/directory/faculty
Web site: http://pharmacy.uiowa.edu/

The pharmacy profession is concerned with a wide variety of activities, from developing new drug products to caring for patients. An important concept in the delivery of pharmacy services is medication therapy management—the responsible provision of drug therapy to achieve defined outcomes that improve patients' quality of life. These outcomes include preventing, arresting, or curing a disease, and/or eliminating or reducing its symptoms.

In order to carry out these activities, pharmacists specialize in the science of drugs and drug information. The dispensing of medications and information at the corner pharmacy is just one aspect of the profession. Pharmacists work in many health care settings, engaging in research, clinical practice, teaching, and counseling. Along with their training in science and drug preparation, they learn the business and communication skills necessary for their multifaceted careers.

Demand for qualified pharmacists is high. Iowa's pharmacy students study with professors who, in many cases, are pioneering the development of new drugs and are defining the appropriate use of others to solve chronic health problems. They also enjoy advanced research facilities, including those of Iowa's drug research and manufacturing area, where experimental drugs are produced for testing and licensing by manufacturers before being introduced worldwide.

The University of Iowa College of Pharmacy is accredited by the Accreditation Council for Pharmacy Education.

College Organization

The College of Pharmacy's faculty and programs are organized in two academic departments, each with two divisions. These units provide course work for the Doctor of Pharmacy curriculum and for the college's graduate programs.

PHARMACY PRACTICE AND SCIENCE DEPARTMENT

Faculty in the Pharmacy Practice and Science Department provide expertise and education in the professional practice of pharmacy. They specialize in a wide variety of clinical pharmacy practices; conduct research on patient and population outcomes related to medication therapy; and provide instruction in the pharmacist's professional role and the safe, effective use of medications.

The department offers Master of Science and Doctor of Philosophy curricula in pharmaceutical socioeconomics, which encompasses the behavioral, economic, social, and administrative sciences; elements of pharmacy practice; and health services research. It offers course work through its Applied Clinical Sciences Division and its Health Services Research Division.

Applied Clinical Sciences Division: Teaching and research in this division focus on the delivery of care and related services to patients and the education of student and resident pharmacists in practice settings. Courses are offered in pharmacotherapy, communication and practice skill development, clinical problem solving, and patient care. Professional practice mentoring and education are provided in introductory and advanced pharmacy practice experiences.

Health Services Research Division: Teaching and research in this division involve economic, social, behavioral, and administrative components of pharmacy practice and medication use. Courses are offered on the health care system, practice management, the
professional and business aspects of pharmacy practice, and on learning and applying economic and social psychological theories to the study of health services and medication use.

To learn more about the department and its two divisions, visit the Pharmacy Practice and Science web site.

PHARMACEUTICAL SCIENCES AND EXPERIMENTAL THERAPEUTICS DEPARTMENT

Faculty in the Pharmaceutical Sciences and Experimental Therapeutics Department provide expertise and education in clinical pharmaceutical sciences, medicinal and natural products chemistry, and pharmaceutics. Their interests include dosage form development and performance, industrial and manufacturing pharmacy, pharmacokinetics and pharmacodynamics, and the chemistry of drugs and their action on human systems. The department offers courses through its Medicinal and Natural Products Chemistry Division and its Pharmaceutics and Translational Therapeutics Division.

Medicinal and Natural Products Chemistry Division:
Course work in this division relates to understanding the chemistry of drugs and their action on human systems, principles of drug discovery and drug design, natural product chemistry, and biotechnology and genomic strategies for producing new drug molecules. The division’s curricula for the M.S. and Ph.D. programs provide abundant opportunities for interface with researchers in other areas, including medicine, pharmacology, biochemistry, chemistry, and pharmaceutics.

Pharmaceutics and Translational Therapeutics Division: This division prepares students to become leaders in developing and evaluating drugs, drug products, and drug delivery systems. It offers two M.S. and Ph.D. subtracks: the pharmaceutics subtrack, which focuses on characterization of pharmaceuticals and their component materials, development of delivery systems for optimal human or veterinary use, and the pharmacokinetic and pharmacodynamic evaluation of drug actions and interactions; and the clinical pharmaceutical sciences subtrack, which focuses on investigating drug therapy outcomes in patients and identifying factors responsible for specific drug actions in individual patients, related patient groups, and large patient populations. The division also offers multidisciplinary opportunities with programs in chemistry, engineering, biomedical science, dentistry, and veterinary medicine. Its national and international collaborations enhance the breadth of research activities available to students.

To learn more about the divisions, visit the Medicinal and Natural Products Chemistry and Pharmaceutics and Translational Therapeutics web sites.

Professional Program of Study (Pharm.D.)

• Doctor of Pharmacy
The College of Pharmacy collaborates with the College of Public Health to offer the joint Master of Public Health/Doctor of Pharmacy (M.P.H./Pharm.D.) program.

Doctor of Pharmacy
The Doctor of Pharmacy program requires 151 s.h. of professional program credit. The program prepares students for careers in pharmacy. It provides professional education in a number of areas, including pharmaceutical technology, biopharmaceutics, medicinal chemistry, and natural products, pharmaceutical socioeconomics, pharmacotherapy, patient care, clinical and hospital pharmacy, and aspects of biotechnology. Graduates of the program are qualified to take the Iowa Board of Pharmacy examination that is required for licensure as a pharmacist.

The program requires four years of full-time pharmacy study preceded by at least two years of pre-pharmacy study in the College of Liberal Arts and Sciences at the University of Iowa or at an accredited community or liberal arts college in the United States or Canada.

During pre-pharmacy study, students complete the prerequisites to admission to the Pharm.D. program (see "Admission" below for a list of prerequisite course work). Pharm.D. students complete a total of 20 s.h. of general education course work. They complete 12 s.h. of general education courses as part of their pre-pharmacy study, but if possible, they should complete all 20 s.h. of their general education work before they enter the Pharm.D. program. Courses in moral reasoning or ethics, communication, computer science, and business are recommended for general education; courses in behavioral and social sciences and the humanities are accepted. Courses in physical education skills, applied music, and studio art do not count toward the general education requirement.

Pharm.D. students must maintain a cumulative g.p.a. of at least 2.00 and a pharmacy g.p.a. of at least 2.00. The pharmacy grade-point average is computed from grades earned in all required courses that students have completed while enrolled in the College of Pharmacy, excluding general education courses and professional electives.

Students must earn a grade of C-minus or higher in transfer courses applied to the Pharm.D.

For rules and regulations concerning academic probation, pass/nonpass, credit by examination, maximum schedule, second-grade-only option, waiver or substitution of courses, cancellation of registration, drop date, and Guided Independent Study, see Student Resources on the College of Pharmacy web site.

The Tippie College of Business (p. 642), the Carver College of Medicine (p. 1005), the College of Dentistry (p. 704), and the College of Liberal Arts and Sciences (p. 24) contribute to the education of pharmacy students by providing instruction in the physical sciences, basic medical sciences, business, the humanities, and the social sciences.

The College of Pharmacy provides students with the highest possible quality in the professional experiential program. Faculty and adjunct faculty serve as preceptors, providing introductory and advanced practice experience at institutions and pharmacies in Iowa, nationwide, and around the world.

Professional Curriculum

The Pharm.D. degree requires the course work listed below, including at least 12 s.h. of professional electives. In addition, students must complete all prerequisites to admission to the Pharm.D. program, including 12 s.h. of general education courses chosen from behavioral, social, humanistic, and business disciplines (see “Admission” below). They also must complete an additional 8 s.h. of
general education work either before or after admission to
the Pharm.D. program.

**FIRST YEAR**

Students must complete one semester of PHAR:8100
Introduction to Pharmacy Practice during the first
professional year. They also complete PHAR:8205 Student
Pharmacist Professionalism throughout the first, second,
and third professional years.

**First Semester**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHAR:8100</td>
<td>Introduction to Pharmacy Practice</td>
<td>1 s.h.</td>
</tr>
<tr>
<td>PHAR:8101</td>
<td>Pharmacy Practice Lab I</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>PHAR:8103</td>
<td>Fundamentals of Evaluating Clinical Research</td>
<td>1 s.h.</td>
</tr>
<tr>
<td>PHAR:8111</td>
<td>Pharmaceutics I: Solutions</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>PATH:8133</td>
<td>Introduction to Human Pathology for Graduate Students</td>
<td>4 s.h.</td>
</tr>
</tbody>
</table>

**Second Semester**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHAR:8100</td>
<td>Introduction to Pharmacy Practice (if not taken first semester)</td>
<td>1 s.h.</td>
</tr>
<tr>
<td>PHAR:8102</td>
<td>Pharmacy Practice Lab II</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>PHAR:8105</td>
<td>Social Aspects of Pharmacy Care</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>PHAR:8112</td>
<td>Pharmaceutics II: Solids and Semisolids</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>PHAR:8121</td>
<td>Medicinal and Natural Products Chemistry I: Biotechnology and Chemotherapy</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>PCOL:8180</td>
<td>Pharmacology for Pharmacy Students I</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

**SECOND YEAR**

Students must complete PHAR:8200 Introduction to Community Pharmacy Practice and PHAR:8206 Introduction to Hospital Pharmacy Practice during the second professional year. These practice experiences are delivered in set time blocks over the winter break or during the summer before or after the P2 year.

**First Semester**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHAR:8202</td>
<td>Introduction to Community Pharmacy Practice</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>PHAR:8203</td>
<td>Pharmacokinetics and Biopharmaceutics</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>PHAR:8204</td>
<td>Introduction to Therapeutics/Special Populations</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>PHAR:8240</td>
<td>Endocrinology, Ophthalmology, Women's and Men's Health Therapeutics</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>PCOL:8181</td>
<td>Pharmacology for Pharmacy Students II</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

**Second Semester**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHAR:8201</td>
<td>Clinical Practice Skills I: Theory and Application</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>PHAR:8204</td>
<td>Pharmacy Practice Lab IV</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>PHAR:8206</td>
<td>Introduction to Hospital Pharmacy Practice</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>PHAR:8123</td>
<td>Medicinal and Natural Products Chemistry III: Medicinal Neurochemistry</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>PHAR:8230</td>
<td>Clinical Pharmacokinetics</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

**Third Year**

Students must complete one semester of PHAR:8300 Introduction to Clinical Pharmacy Practice during the third professional year.

**First Semester**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHAR:8300</td>
<td>Introduction to Clinical Pharmacy Practice (may be taken either fall or spring semester)</td>
<td>1 s.h.</td>
</tr>
<tr>
<td>PHAR:8302</td>
<td>Clinical Practice Skills II: Critical Patient Analysis</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>PHAR:8305</td>
<td>Pharmacy Practice Lab V</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>PHAR:8308</td>
<td>Pharmaceutical Economics and Insurance</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>PHAR:8313</td>
<td>Drug Literature Evaluation</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>PHAR:8340</td>
<td>FEN, GI, and Renal Therapeutics</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>PHAR:8341</td>
<td>Rheumatology, Immunology, Hematology, Oncology, and Transplantation Therapeutics</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>Professional electives</td>
<td></td>
<td>4 s.h.</td>
</tr>
</tbody>
</table>

**Second Semester**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHAR:8104</td>
<td>Pharmacy Law and Ethics</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>PHAR:8205</td>
<td>Student Pharmacist Professional</td>
<td>1 s.h.</td>
</tr>
<tr>
<td>PHAR:8303</td>
<td>Clinical Practice Skills III: Applied Patient Management</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>PHAR:8306</td>
<td>Pharmacy Practice Lab VI</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>PHAR:8309</td>
<td>Pharmacy Management and Marketing</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>PHAR:8342</td>
<td>Neurology/Psychiatry Therapeutics</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>PHAR:8343</td>
<td>Infectious Disease Therapeutics</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>Professional electives</td>
<td></td>
<td>5 s.h.</td>
</tr>
</tbody>
</table>

**FOURTH YEAR: ADVANCED PHARMACY PRACTICE ROTATIONS**

During the fourth year, students are required to complete eight advanced pharmacy practice rotations. All students must complete the first four rotations listed below (24 s.h.); they also must complete an additional four rotations of their choice (24 s.h.).

All of these (24 s.h.):

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHAR:9401</td>
<td>Ambulatory Care Rotation</td>
<td>6 s.h.</td>
</tr>
<tr>
<td>PHAR:9404</td>
<td>Community Pharmaceutical Care Rotation</td>
<td>6 s.h.</td>
</tr>
<tr>
<td>PHAR:9410</td>
<td>Hospital Pharmacy Rotation</td>
<td>6 s.h.</td>
</tr>
<tr>
<td>PHAR:9413</td>
<td>Acute Care Medicine Rotation</td>
<td>6 s.h.</td>
</tr>
</tbody>
</table>

Four of these (24 s.h.):

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHAR:9402</td>
<td>Elective Ambulatory Care Rotation</td>
<td>6 s.h.</td>
</tr>
<tr>
<td>PHAR:9403</td>
<td>Elective Nuclear Pharmacy Rotation</td>
<td>6 s.h.</td>
</tr>
<tr>
<td>PHAR:9406</td>
<td>Elective: Drug Information Rotation</td>
<td>6 s.h.</td>
</tr>
<tr>
<td>PHAR:9407</td>
<td>Elective Family Medicine Rotation</td>
<td>6 s.h.</td>
</tr>
</tbody>
</table>
PROFESSIONAL ELECTIVES

Pharm D. students must complete 12 s.h. of professional electives, which they may choose from the following list.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHAR:9408</td>
<td>Elective Hematology/Oncology Rotation</td>
<td>6 s.h.</td>
</tr>
<tr>
<td>PHAR:9409</td>
<td>Elective Home Health Care Rotation</td>
<td>6 s.h.</td>
</tr>
<tr>
<td>PHAR:9411</td>
<td>Elective Long Term Care Rotation</td>
<td>6 s.h.</td>
</tr>
<tr>
<td>PHAR:9412</td>
<td>Elective Managed Care Rotation</td>
<td>6 s.h.</td>
</tr>
<tr>
<td>PHAR:9414</td>
<td>Elective Neurology Rotation</td>
<td>6 s.h.</td>
</tr>
<tr>
<td>PHAR:9415</td>
<td>Elective: Pediatrics Rotation</td>
<td>6 s.h.</td>
</tr>
<tr>
<td>PHAR:9416</td>
<td>Elective: Pharmacy Rotation</td>
<td>6 s.h.</td>
</tr>
<tr>
<td>PHAR:9417</td>
<td>Elective Psychiatry Rotation</td>
<td>6 s.h.</td>
</tr>
<tr>
<td>PHAR:9418</td>
<td>Elective Research Rotation</td>
<td>6 s.h.</td>
</tr>
<tr>
<td>PHAR:9419</td>
<td>Elective: Surgery Rotation</td>
<td>6 s.h.</td>
</tr>
<tr>
<td>PHAR:9420</td>
<td>Elective Pharmacy Practice Underserved Population Rotation</td>
<td>6 s.h.</td>
</tr>
<tr>
<td>PHAR:9422</td>
<td>Elective: Compounding/Complimentary Alternative Medicine Rotation</td>
<td>6 s.h.</td>
</tr>
<tr>
<td>PHAR:9423</td>
<td>Elective: Critical Care Medicine Rotation</td>
<td>6 s.h.</td>
</tr>
<tr>
<td>PHAR:9424</td>
<td>Elective Emergency Medicine Rotation</td>
<td>6 s.h.</td>
</tr>
<tr>
<td>PHAR:9425</td>
<td>Elective Hospital Management Rotation</td>
<td>6 s.h.</td>
</tr>
<tr>
<td>PHAR:9426</td>
<td>Elective Infectious Disease Rotation</td>
<td>6 s.h.</td>
</tr>
<tr>
<td>PHAR:9427</td>
<td>Elective Medication Use Evaluation Rotation</td>
<td>6 s.h.</td>
</tr>
<tr>
<td>PHAR:9428</td>
<td>Elective Pharmacy Industry Rotation</td>
<td>6 s.h.</td>
</tr>
<tr>
<td>PHAR:9429</td>
<td>Elective: Pharmacy Regulatory Rotation</td>
<td>6 s.h.</td>
</tr>
<tr>
<td>PHAR:9430</td>
<td>Elective: Professional Association Rotation</td>
<td>6 s.h.</td>
</tr>
<tr>
<td>PHAR:9431</td>
<td>Elective: Veterinary Pharmacy Rotation</td>
<td>6 s.h.</td>
</tr>
<tr>
<td>PHAR:9432</td>
<td>Elective: Advanced Community Pharmacy Rotation</td>
<td>6 s.h.</td>
</tr>
<tr>
<td>PHAR:9433</td>
<td>Elective Academic Rotation</td>
<td>6 s.h.</td>
</tr>
</tbody>
</table>

PHAR:8721 Leadership and Political Advocacy     arr.
PHAR:8722 Current Topics in Health Policy     2 s.h.
PHAR:8724 Hospital Pharmacy Practice Management Elective 2 s.h.
PHAR:8725 Career Pathways in Pharmacy         1 s.h.
PHAR:8788 International Perspectives: Xicotepec 2 s.h.
PHAR:8790 Topics in Community Pharmacy Management 2 s.h.
PHAR:8791 Survey of Basic Pharmaceutical Sciences 1 s.h.

Joint M.P.H./Pharm.D.

The College of Pharmacy and the College of Public Health offer the joint Master of Public Health/Doctor of Pharmacy program. The joint M.P.H./Pharm.D. requires 42 s.h. of graduate credit in addition to the requirements of the Pharm.D. degree. Students who complete the program are granted both degrees.

The M.P.H./Pharm.D. program helps students develop expertise in public health related to pharmacotherapy, health promotion, disease prevention, and medication safety. Its graduates may work in areas of interest common to pharmacy and public health, such as spread and treatment of disease, community health, and immunology; bioterrorism, terrorism, and preparedness; genetics; insurance; managed care; family and juvenile health; and protection of special populations. Employment opportunities are available in hospitals and clinics and with health care providers; private practice; insurance and managed care organizations; local, county, state, and federal government; public health governmental agencies; and colleges and universities.

Separate admission to each degree program is required. Applicants must be admitted to both programs before they may be admitted to the joint degree program.

See "Joint M.P.H./Pharm.D." in the Master of Public Health Program (p. 1173) section of the Catalog to learn about curriculum and admission requirements for the joint program.

Admission

Individuals apply to the Pharm.D. program using PharmCAS, the American Association of College of Pharmacy application service. Applicants also must submit a supplemental application, including a $100 application fee, to the University of Iowa College of Pharmacy; see Iowa Graduate Admissions—College of Pharmacy for more information.

All application materials must be received by December 1 of the year before the applicant intends to enter the College of Pharmacy. Entry is for fall semester.

All Pharm.D. applicants must take the Pharmacy College Admission Test (PCAT); they must take PCAT before December 31 of the year before they wish to enter the College of Pharmacy in order to be considered by the admissions committee.

Applicants must complete the college-level work listed under "Prerequisites to Admission to the Pharm.D. Program" below. They also must have an overall cumulative g.p.a. of at least 2.50 and must submit two letters of recommendation. Applicants considered for
admission must have a personal interview; the college contacts applicants to arrange interview appointments.

Fulfillment of the admission requirements listed above does not ensure admission to the College of Pharmacy. The admissions committee considers applicants who meet these requirements and selects individuals who, in their judgment, appear to be best qualified for the study and practice of pharmacy.

Applicants who are accepted for admission are required to submit to a criminal background check and pay a $250 admission acceptance fee. The fee is applied to tuition for the student's first semester of enrollment in the college. The deposit is not refunded to applicants who do not enroll in the College of Pharmacy.

Entering health sciences students are required to have an annual tuberculin skin test (TST) and proof of immunization against mumps, measles, and rubella (2 MMRs), tetanus, diphtheria, and varicella before classes begin. The usual regimen of three doses of Hepatitis B vaccine and a Hepatitis B titre must be completed by the second semester of the first year. All students are required to have hospitalization and health insurance.

**PREREQUISITES FOR ADMISSION TO THE PHARM.D. PROGRAM**

Applicants to the Pharm.D. program must have completed the following college-level work.

**Rhetoric:** 4 s.h. (RHET:1030 Rhetoric) or 6 s.h. of transfer credit in English composition and rhetoric and 3 s.h. in speech

**Human anatomy:** 3 s.h. (ACB:3110 Principles of Human Anatomy)

**General biology:** 8 s.h. (BIOL:1411 Foundations of Biology and BIOL:1412 Diversity of Form and Function)

**General chemistry:** 8 s.h. (CHEM:1110 Principles of Chemistry I and CHEM:1120 Principles of Chemistry II)

**Organic chemistry:** 6 s.h. (CHEM:2210 Organic Chemistry I and CHEM:2220 Organic Chemistry II)

**Mathematics:** 3-4 s.h. of a satisfactory differential and integral calculus course (MATH:1460 Calculus for the Biological Sciences)

**Microbiology:** 4 s.h. (MICR:3112 Pharmacy Microbiology)

**Microeconomics:** 3-4 s.h. (ECON:1100 Principles of Microeconomics)

**Physics:** one year of high school physics or one semester of college-level physics with a lab (PHYS:1400 Basic Physics)

**Human physiology:** 3 s.h. (HHP:3500 Human Physiology)

**Statistics:** 3 s.h.

**General education electives:** at least 12 s.h.

Courses in moral reasoning or ethics, communications, computer science, and business are recommended for general education; courses in the behavioral and social sciences and the humanities are accepted. Courses in physical education skills, applied music, and studio art do not count toward the general education requirement.

**Financial Support**

All second-, third-, and fourth-year pharmacy students are encouraged to apply for College of Pharmacy scholarships. Applications are available each April from the College of Pharmacy Office of Academic Affairs. Students complete a single application form in order to be considered for all scholarships. Award amounts vary. The Awards and Recognition Committee selects the best-qualified applicant for each scholarship.

**Steve and Teresa Berge Scholarship:** for a pharmacy student who is a U.S. citizen and has a g.p.a. of at least 3.00; experience doing volunteer work highly desirable.

**Seymour M. Blaug Memorial Award:** for a pharmacy student with above-average academic achievement.

**Dennis and Bev Boussetol Scholarship:** life insurance gift bequeath.

**Ilse O. Buckner Scholarship:** for a pharmacy student who maintains satisfactory academic progress; nonrenewable, financial need is considered.

**Burroughs-Wellcome Scholarship Fund:** for a student of the committee's choice.

**David and James Carlson Scholarship:** for two pharmacy students interested in clinical or hospital practice; preference given to students from north of U.S. Interstate 80 and west of U.S. Interstate 35 who show financial need.

**Todd and Jody Christiansen Scholarship Fund:** for a pharmacy student who is enrolled in a dual degree or certificate program; shows financial need and academically strong.

**Class of 2009 Award:** qualifications vary.

**Jordan and Jana Cohen Doctor of Pharmacy Scholarship:** for a pharmacy student in good academic standing; based on merit and need; renewable.

**College of Pharmacy Executive Leadership Board Excellence Fund:** for the senior class president and/or qualifications vary.

**Vernon Conzemius Scholarship:** for a pharmacy student who demonstrates financial need; preference is given to students in the upper half of their class.

**CVS Scholarships:** for two pharmacy students who are interested in community pharmacy.

**John and Margo Daniel Scholarship:** preference is given to a student from Webster County, Iowa.

**Max Eggleston Scholarship:** for a student who has completed one year; preference is given to students from Iowa; based on financial need.

**Alice Gates Coxon Memorial Scholarship:** for a student in good academic standing; essay required.

**Lori A. Grimes Memorial Scholarship:** based on financial need; renewable.

**Dick and Brenda Hartig Scholarship:** for a student who demonstrates financial need; preference is given to students from Dubuque, Waukon, Dyersville, and Iowa City, Iowa; and Galena and Stockton, Illinois.
Thomas D. Hill Scholarship: for a pharmacy student in good academic standing.

Janet Hinderliter Scholarship: for a P3 or P4 student with a g.p.a. of at least 3.00 and demonstrated involvement in campus and community affairs.

Frances T. and Charles Holub Memorial Award: for a third-year pharmacy student; financial need is considered; renewable once.

Iowa Pharmacy Foundation Scholarships: for selected pharmacy students who are residents of Iowa and who demonstrate outstanding academic ability; financial need is considered (Eggleston-Granberg Scholarship is awarded from this fund).

R.A. Kuever Scholarship Fund: for a pharmacy student from Iowa who is in good academic standing.

Ernest Kyle Memorial Scholarship: for a student of the committee's choice.

Ronald Madden Scholarship: for an Iowa high school graduate in good academic standing.

Charles J. Malecek Pharmacy Scholarship: for a student of the committee's choice.

Virgil R. McCutchan Memorial Scholarship: for a deserving pharmacy student.

Carleton Mikkelsen Scholarship: for the top P4 student based on final P3 grade-point average; in case of a tie, the committee chooses the recipient.

Miller-Ruegnitz Scholarships: based on financial need, non-renewable.

NACDS Scholarship: for a student interested in community pharmacy.

Petersen Linder Scholarship: for a pharmacy student in excellent academic standing who has outstanding leadership skills; based on financial need.

Pharmacists Mutual Scholarship: for a student of the committee's choice.

Pharmacy Student Aid Scholarship: for a student of the committee's choice.

Quad Cities Area Pharmacists Association Scholarships: for students who demonstrate financial need; preferably one student from Iowa and one from Illinois.

Robert E. and Barbara J. Rehal Family Scholarship: for a student who has interest in independent or community pharmacy; preferably from Sioux City, Iowa.

Sattler Family Scholarship: for a student of the committee's choice, alternates with the Carver College of Medicine.

Hal Schimmelpfennig Scholarship Fund: for a pharmacy student from Sigourney, Iowa.

Scherling Scholarship: for a student who demonstrates superior academic achievement in organic chemistry.

Chuck and Jacqueline Schwenke Scholarship: for a student of the committee's choice.

Gordon H. Sheffield Scholarship: for a P3 or P4 student from Iowa; preference given to a student who demonstrates leadership and financial need.

Shopko Scholarship: preference given to students who reside or have resided in a state where Shopko is located.

Shutt Pharmacy Scholarship: preference is given to Iowa residents; based on financial need.

H. Curtis Snyder Award: for a pharmacy student in good standing.

Paul G. and Vivian Soderdahl: for a student of the committee's choice.

Wilber J. Teeters and the Teeters/Wahl Scholarships: for a pharmacy student who has completed at least one year in the college; financial need is considered.

Thompson Scholarship Fund in Memory of Rob Chabal: preference given to a fourth-year student committed to community pharmacy practice.

John S. Thor (Nash) Scholarship Fund: for a pharmacy student in good standing; renewable.

Colonel Thomas C. Veach Class of 1952 Scholarship Fund: preference given to a student interested in compounding or industrial pharmacy.

Walgreens Diversity Scholarship: for a student who has made significant efforts toward raising awareness about matters of diversity that affect the pharmacy profession.

Wal-Mart Scholarship: for a P3 or P4 student with high scholastic standing who demonstrates strong leadership, desire to enter a community pharmacy practice, and financial need.

Jo H. and Robert A. Wiley Scholarship Fund: for a pharmacy student who is an Iowa native and shows financial need.

Louis C. Zopf Memorial Award: for a pharmacy student who is academically qualified; financial need is considered.

John D. Zuelke Scholarship: for a pharmacy student (preferably P3 or P4) from Wapello County, Iowa.

Graduate Programs of Study

- Master of Science in pharmacy
- Doctor of Philosophy in pharmacy

The College of Pharmacy offers graduate programs in four areas: clinical pharmaceutical sciences, medicinal and natural products chemistry, pharmaceutical socioeconomics, and pharmaceutics.

Advanced study in the pharmaceutical sciences prepares students for research, teaching, and administrative positions in the pharmaceutical industry, in colleges and universities, in government agencies, and in health-related institutions and organizations.

Applicants must meet the admission requirements of the Graduate College; see the Manual of Rules and Regulations of the Graduate College. Academic requirements for maintaining graduate registration are determined by the Graduate College and by the individual divisions of the College of Pharmacy.

For more information about graduate study, visit the College of Pharmacy web site.
Facilities and Resources

Pharmacy Building
The Pharmacy Building is located on the University’s health sciences campus, in close proximity to the Carver College of Medicine, College of Dentistry, College of Nursing, and College of Public Health. Also nearby are University of Iowa Hospitals and Clinics, the Bowen Science Building, and the Hardin Library for the Health Sciences.

The Pharmacy Building is a five-story structure designed to provide modern facilities for a comprehensive program of pharmacy education. In addition to classrooms and auditoriums, there are well-equipped separate laboratories for instruction at the professional and graduate levels.

The college operates small and large classrooms with state-of-the-art technology. The student practice lab is a technologically advanced licensed pharmacy that provides real and simulated practice experiences. The Banker Student Activity Center provides quiet individual and small-group study environments and houses offices for College of Pharmacy Student Organizations.

The building also houses a fully supported Instructional Technology Center (Pharmacy ITC) in the Learning Resource Center. The ITC provides state-of-the-art desktop workstations and laptop computers are available for student checkout. Both desktop and laptop computers have secure connections to the University network for online drug information searching and printing.

University of Iowa Pharmaceuticals
University of Iowa Pharmaceuticals is a pharmaceutical manufacturing facility registered with the U.S. Food and Drug Administration that develops pharmaceutical dosage forms and has manufactured clinical supplies in compliance with Good Manufacturing Practices since 1974. University of Iowa Pharmaceuticals has clients worldwide, including pharmaceutical companies, biotechnology firms, medical departments, and government agencies. Its staff works closely with clients and pharmaceutics faculty members to produce virtually every type of pharmaceutical dosage form, supplying new pharmaceutical agents for use in clinical trials and other research. The facility combines the former Center for Advanced Drug Development and Division of Pharmaceutical Service. For more information, visit the University of Iowa Pharmaceuticals web site.

Courses
Students must be enrolled in the College of Pharmacy to take the college’s courses. Undergraduate and graduate students in other colleges must have the instructor’s consent to take College of Pharmacy courses.

Lower-Level Undergraduate

PHAR:1000 First-Year Seminar 1 s.h.
Small discussion class taught by a faculty member; topics chosen by instructor; may include outside activities (e.g., films, lectures, performances, readings, visits to research facilities).

PHAR:1100 Introduction to Pharmaceutical Sciences 1 s.h.

Upper-Level Undergraduate and Graduate

PHAR:3745 Drug Delivery I arr.
Advanced design and development of drug delivery systems; emphasis on selection of materials and designs suitable for specific applications; comparison and evaluation of available and emerging technologies. Requirements: introductory-level courses in biochemistry and anatomy/physiology.

PHAR:3746 Drug Delivery II arr.
Continuation of PHAR:3745. Prerequisites: PHAR:3745.

PHAR:4740 Materials in Drug and Gene Delivery

3 s.h.

Graduate

PHAR:8000 Introduction to Pharmaceutics Projects
Introduction to pharmaceutics.

Pharmacy Practice and Science for Pharm.D. Students

PHAR:3740 End-of-Life Care for Adults and Families 2-4 s.h.

PHAR:8100 Introduction to Pharmacy Practice 1 s.h.
Exposure to the pharmacy profession through varied shadowing experiences in practice settings. Requirements: P1 standing.

PHAR:8101 Pharmacy Practice Lab I 2 s.h.
Practical application of scientific and clinical knowledge used in the provision of pharmaceutical care; activities include communication with patient and members of the healthcare team, sterile product and prescription compounding, pharmacy calculations, and use of drug information resources. Requirements: P1 standing.

PHAR:8102 Pharmacy Practice Lab II 2 s.h.
Practical application of scientific and clinical knowledge used in the provision of pharmaceutical care; activities include prescription compounding, pharmacy calculations, communication skills, prescription counseling, and applications of drug information skills through secondary searching of the primary literature. Prerequisites: PHAR:8101. Requirements: P1 standing.

PHAR:8103 Fundamentals of Evaluating Clinical Research 1 s.h.
Basic concepts for evaluation of clinical trials published in primary biomedical and pharmacy literature; design, methods, outcomes, statistical analysis, and generalizability of results. Requirements: P1 standing.

PHAR:8104 Pharmacy Law and Ethics 2 s.h.
Legal and moral aspects involved in the practice of pharmacy. Requirements: P3 standing.

PHAR:8105 Social Aspects of Pharmacy Care 2 s.h.
Conceptual issues related to social and behavioral components of pharmacy care; social construction of health and illness, medication use process, health communications, cultural competence, health disparities, public health. Requirements: P1 standing.

PHAR:8106 Foundations of Pharmaceutical Sciences 5 s.h.
Comprehension and application of molecular structures and functional groups to altering properties of molecules; solution and solid drug properties; drug instability; dosage forms and fundamental principles of toxicology. Requirements: P1 standing.

PHAR:8110 Foundations of Pharmacy Practice 4 s.h.
Introduction to contemporary pharmacy practice. Requirements: P1 standing.

PHAR:8130 Foundations of Pharmacy Practice I 4 s.h.
Introduction to contemporary pharmacy practice; small-group discussion, application of core concepts through active hands-on learning approaches; for first-year student pharmacists. Requirements: P1 standing.

PHAR:8131 Professional Engagement 1 s.h.
Opportunity for student engagement in the College of Pharmacy prior to Professionalism Ceremony; development as a responsible partner in learning process by nurturing collaboration, leadership, service, compassion, community, self-development, and social enrichment among students, faculty, and staff. Requirements: P1 standing.

PHAR:8132 Professional Development 1 s.h.
Engagement with profession of pharmacy and community through service and leadership activities, reflection; use of Continuous Professional Development Cycle (CPD) approach to learning. Requirements: P1 standing.

PHAR:8133 Introductory Pharmacy Practice Experience Shadowing 1 s.h.
Experience shadowing a pharmacist for six hours in four different pharmacy practice settings for a total of 24 hours; settings include practice areas and rotation types required for P4 Advanced Pharmacy Practice Experience (APPE) sites in community pharmacy, hospital pharmacy, ambulatory care/family practice, acute care medicine, and other elective practice settings; work with faculty mentor. Requirements: P1 standing.

PHAR:8134 Foundations of Health Services 3 s.h.
Foundation issues for pharmacist practice related to social, cultural, behavioral, economic, and organization design concepts of pharmacy care. Requirements: P1 standing.

PHAR:8135 Health Information Retrieval and Informatics 3 s.h.
Introduction and overview of health care information retrieval, organization, and dissemination; retrieval and organization of health information from pharmacy and medical primary and tertiary literature using secondary resources; knowledge and skills to manage, analyze, and legally share health information in electronic health records, pharmacy information systems, and automated systems. Requirements: P1 standing.

PHAR:8136 Foundations of Pharmaceutical Sciences I 3 s.h.
Introduction and overview of foundations of pharmaceutical sciences. Requirements: P1 standing.

PHAR:8137 Foundations of Pharmaceutical Sciences II 2 s.h.

PHAR:8200 Introduction to Community Pharmacy Practice 3 s.h.
Exposure to community pharmacy through activities focusing on drug distribution, legal requirements, communication, patient interaction; during breaks in P2 year. Requirements: P2 standing.

PHAR:8201 Clinical Practice Skills I: Theory and Application 2 s.h.
Exploration and development of professional skills required for delivery of patient care; patient assessment, clinical decision making, communication (written and oral), teamwork. Corequisites: PHAR:8242.

PHAR:8203 Pharmacy Practice Lab III 2 s.h.
Practical application of scientific and clinical knowledge in the provision of patient-centered care; activities include prescription interpretation and counseling, compounding, applications of drug information, use of patient screening tools, physical assessment, and pharmacy law. Corequisites: PHAR:8240 and PHAR:8241, if not taken as prerequisites.

PHAR:8204 Pharmacy Practice Lab IV 2 s.h.
Practical application of scientific and clinical knowledge in the provision of patient-centered care; activities include providing medication therapy management for patients, prescription and self-care counseling, and application of drug information skills. Corequisites: PHAR:8242 and PHAR:8243, if not taken as prerequisites. Requirements: P2 standing.

PHAR:8205 Student Pharmacist Professionalism 1 s.h.
Participation in activities promoting leadership and professional learning, and service learning; required participation P1 through P3 years.

PHAR:8206 Introduction to Hospital Pharmacy Practice 2 s.h.
Exposure to hospital pharmacy through activities focusing on drug distribution, legal requirements, communication, patient interaction; during breaks in P2 year. Requirements: P2 standing.

**PHAR:8240 Introduction to Therapeutics/ Special Populations**

Treatment modalities that promote health and treat common diseases; common laboratory and diagnostic procedures used to diagnose and monitor diseases; basic types of adverse drug reactions. Requirements: P2 standing.

**PHAR:8241 Endocrinology, Ophthalmology, Women's and Men's Health Therapeutics**

Pharmacotherapy for endocrine and ophthalmologic disorders; review of disorders, treatment goals, treatment plans, patient counseling, monitoring of patient outcomes. Requirements: P2 standing.

**PHAR:8242 Respiratory and Dermatologic Therapeutics**

Pharmacotherapy for respiratory and dermatology disorders; review of disorders, treatment goals, treatment plans, patient counseling, monitoring of patient outcomes. Requirements: P2 standing.

**PHAR:8243 Cardiovascular Therapeutics**


**PHAR:8300 Introduction to Clinical Pharmacy Practice**

Clinical practice experience observing and participating in clinical activities with P4 students, faculty, and other health care providers. Requirements: P3 standing.

**PHAR:8302 Clinical Practice Skills II: Critical Patient Analysis**

Continuation of PHAR:8201; development of professional skills required for delivery of patient care; patient assessment, clinical decision making, communication (written and oral) skills. Corequisites: PHAR:8340. Requirements: P3 standing.

**PHAR:8303 Clinical Practice Skills III: Applied Patient Management**

Continuation of PHAR:8302; development of professional skills required for delivery of patient care; patient assessment, clinical decision making, communication (written and oral), teamwork. Corequisites: PHAR:8342. Requirements: P3 standing.

**PHAR:8305 Pharmacy Practice Lab V**

Practical application of scientific and clinical knowledge in the provision of patient-centered care; activities include medication therapy management for patients, prescription and self-care counseling, and application of drug information skills. Corequisites: PHAR:8340 and PHAR:8341, if not taken as prerequisites.

**PHAR:8306 Pharmacy Practice Lab VI**

Practical application of scientific and clinical knowledge in the provision of patient-centered care; activities include medication therapy management for patients, prescription and self-care counseling, and application of drug information skills. Corequisites: PHAR:8342 and PHAR:8343, if not taken as prerequisites. Requirements: P3 standing.

**PHAR:8308 Pharmaceutical Economics and Insurance**

Financing of health care in the U.S.; insurance and reimbursement in pharmacy and pharmacoeconomics. Requirements: P3 standing.

**PHAR:8309 Pharmacy Management and Marketing**

Application of management principles to pharmacy practice; marketing techniques for pharmacy practice; operations, human resources, finance, quality improvement and service marketing management.

**PHAR:8313 Drug Literature Evaluation**

Study design methods, drug information techniques and skills; skill development in critical analysis and evaluation of published reports of drug use and drug trials, assessment of validity of reports, trials and studies, assessment of generalizability of results to individual patients and patient groups; laboratory experience in biomedical literature analysis, evaluation.

**PHAR:8340 FEN, GI, and Renal Therapeutics**

Pharmacotherapy for fluid/electrolyte/nutrition disorders; gastrointestinal and renal diseases; review of disorders, treatment goals, treatment plans, patient counseling, monitoring of patient outcomes. Requirements: P3 standing.

**PHAR:8341 Rheumatology, Immunology, Hematology, Oncology, and Transplantation Therapeutics**

Pharmacotherapy for rheumatology, immunology, hematology, oncology, and transplantation; review of disorders, treatment goals, treatment plans, patient counseling, monitoring of patient outcomes. Requirements: P3 standing.

**PHAR:8342 Neurology/Psychiatry Therapeutics**

Pharmacotherapy for psychiatric and neurologic disorders; review of disorders, therapeutic goals, treatment plans, patient counseling, monitoring of patient outcomes. Requirements: P3 standing.

**PHAR:8343 Infectious Disease Therapeutics**

Pharmacotherapy for infectious diseases; review of disease, therapeutic goals, treatment plans, patient counseling, monitoring of patient outcomes. Requirements: P3 standing.

**PHAR:8702 Dean's Pharmacy Forum II**

Contemporary issues in pharmacy practice, pharmacy education, and health care.
PHAR:8703 Web 2.0 and Pharmacy Drug Information 2 s.h.
Introduction to challenges and opportunities of social Internet applications, electronic drug information sources, and mobile technologies available to healthcare providers and patients; creation, use, and critical evaluation of web-based products; lectures, class discussions, required readings, reflection blogs, and group projects. Requirements: P1, P2, or P3 standing.

PHAR:8706 Pharmacy Projects arr.
Basic and applied research problems of pharmaceutical interest.

PHAR:8708 Substance Abuse 2 s.h.
Themes and concepts in substance abuse and treatment; stimulants, depressants, alcohol, opiates, hallucinogenics, steroids; drug abuse prevention and treatment, including dual diagnosis, from cradle to the grave.

PHAR:8712 Nonprescription Pharmacotherapy 2 s.h.
Introduction to nonprescription medications; development of patient assessment and consultation skills; understanding of pharmacist’s role in patient self-care. Requirements: P3 standing.

PHAR:8715 Health Disparities and Cultural Competence 2-4 s.h.
Characteristics, causes, and effects of health disparities in the U.S. health care system; foundation for development of knowledge, attitudes, and skills required of culturally competent health care providers; definitions and models of cultural competence, characteristics of culturally effective practitioners and workplaces; health disparities among specific populations, evidence for cultural competence as a remedy; taking a culturally appropriate history; working with interpreters; legal and professional imperatives for cultural competence. Same as NURS:3715.

PHAR:8717 Ambulatory Care Pharmacy 2 s.h.
Additional experience in the practice of clinical pharmacy; focus on key therapeutic areas where ambulatory care clinical pharmacists currently have a significant impact improving patient care, including anticoagulation management, hyperlipidemia management, and diabetes management; opportunity to develop expertise in clinical decision making, improve problem solving abilities, and continued development in writing and oral presentation skills. Prerequisites: PHAR:8241 and PHAR:8243. Requirements: P3 standing.

PHAR:8718 Special Topics in Acute Care 2 s.h.
Pharmacology for common but varied acute care medicine topics; review of disorder, therapeutic goals, treatment plans, patient counseling, monitoring patient outcomes; lecture or case-based classes; acute and chronic renal failure; peritoneal and hemodialysis; diabetic ketoacidosis; rhabies; shock, vasopressors, fluids; ACLS; deep venous thrombosis, stress ulcer prophylaxis; burns; sedation, neuromuscular blockage; opioids; multiple sclerosis. Prerequisites: PHAR:8240 and PHAR:8241 and PHAR:8242 and PHAR:8243 and PHAR:8340 and PHAR:8341. Corequisites: PHAR:8342 and PHAR:8343. Requirements: B.L.S. certification.

PHAR:8719 Overview of Pediatric Pharmacotherapy 2 s.h.
Discussion of issues and problems in pediatric pharmacotherapy; clinical practicum. Prerequisites: PHAR:8230 and PHAR:8240. Requirements: P3 standing.

PHAR:8720 Health Coaching and Wellness 2 s.h.
Develop expertise in health coaching and wellness to care for patients with chronic diseases; in-depth look at lifestyle changes recommended for patients with chronic diseases; discuss and investigate nutrition and exercise guidelines for patients with chronic diseases; motivational interviewing technique and incorporation of chronic care model for patients. Requirements: P2 or P3 standing.

PHAR:8721 Leadership and Political Advocacy arr.
Contemporary issues in pharmacy; role of leadership and advocacy in shaping profession; becoming effective advocates within political and policy making process; development of advocacy and leadership skills essential to improve self, profession, and community. Requirements: P1, P2, or P3 standing. Recommendations: PHAR:8702 and PHAR:8703.

PHAR:8722 Current Topics in Health Policy 2 s.h.
Legislative process and broad range of current issues in health policy; general- and pharmacy-specific health policy topics at state and federal levels. Requirements: P1, P2, P3, or graduate standing.

PHAR:8723 Infectious Disease for Acute Care Practice 1 s.h.
Contemporary issues related to infectious diseases; unusual pathogens such as Ebola, tropical medicine, bioterrorism, resistance, travel medicine, epidemiology.

PHAR:8724 Hospital Pharmacy Practice Management Elective 2 s.h.
Organizational structure of pharmacy departments in hospitals and health care systems; models for delivery of pharmaceutical care; pharmacy’s role in drug-policy decision making; provision of drug information; clinical and distributive pharmacy services; control of pharmacy and pharmacy costs; use of information technology and automation for service delivery; supervisory management; quality improvement. Requirements: P3 standing.

PHAR:8725 Career Pathways in Pharmacy 1 s.h.
Career preparation through writing, speaking, reading, and listening; writing résumés, curricula vitae, cover letters; interviewing techniques; electronic portfolios; web-based career information; guest speakers from pharmacy associations, major chains; workshop approach. Requirements: P3 standing.

PHAR:8788 International Perspectives: Xicotepec 2-3 s.h.
Introduction to providing service to a community in a less developed country; student projects intended to improve community life in Xicotepec. Requirements: P3 standing. Same as CEE:4788, GHS:4126.

PHAR:8790 Topics in Community Pharmacy Management 2 s.h.
Focus on building practical knowledge and understanding of business principles.

**PHAR:9401 Ambulatory Care Rotation 6 s.h.**  
Clinical experience in providing pharmaceutical care in outpatient clinic settings. Requirements: P4 standing.

**PHAR:9402 Elective Ambulatory Care Rotation 6 s.h.**  
Clinical experience providing pharmaceutical care in specialty outpatient settings. Requirements: P4 standing.

**PHAR:9403 Elective Nuclear Pharmacy Rotation 6 s.h.**  
Practical experience in the handling and clinical use of radiopharmaceuticals. Requirements: P4 standing.

**PHAR:9404 Community Pharmaceutical Care Rotation 6 s.h.**  
Clinical experience in the community setting; emphasis on delivery of pharmaceutical care. Requirements: P4 standing.

**PHAR:9405 Elective Hospice and Palliative Care Rotation 6 s.h.**  
Clinical experience providing pharmacotherapy for end-of-life care. Requirements: P4 standing.

**PHAR:9406 Elective: Drug Information Rotation 6 s.h.**  
Practice experience applying drug information knowledge to service and research projects. Requirements: P4 standing.

**PHAR:9407 Elective Family Medicine Rotation 6 s.h.**  
Clinical practice experience applying primary care therapeutics in family medicine practice settings. Requirements: P4 standing.

**PHAR:9408 Elective Hematology/Oncology Rotation 6 s.h.**  
Drug therapy management of oncology patients and patients with hematologic malignancies, aplastic anemia, sickle cell disease, hemophilia. Requirements: P4 standing.

**PHAR:9409 Elective Home Health Care Rotation 6 s.h.**  
Clinical experience in the team approach to health care delivery, including total parenteral nutrition, chemotherapy, intravenous antibiotics, lab analysis, hospice care, and pain management. Requirements: P4 standing.

**PHAR:9410 Hospital Pharmacy Rotation 6 s.h.**  
Instruction and practical experience in various components of hospital pharmacy; emphasis on hospital organization, inpatient and outpatient services, IV admixtures, unit dose, and clinical services. Requirements: P4 standing.

**PHAR:9411 Elective Long Term Care Rotation 6 s.h.**  
Practice experience in providing services to varied long-term patient care environments. Requirements: P4 standing.

**PHAR:9412 Elective Managed Care Rotation 6 s.h.**  
Practice experience in providing pharmaceutical care or pharmacy-related services in a managed care organization. Requirements: P4 standing.

**PHAR:9413 Acute Care Medicine Rotation 6 s.h.**  
Clinical experience applying therapeutic skills for the pharmacotherapeutic management of patients on general medicine or specialty inpatient areas. Requirements: P4 standing.

**PHAR:9414 Elective Neurology Rotation 6 s.h.**  
Clinical experience in the pharmacotherapeutic and pathophysiologic considerations of neurological disorders. Requirements: P4 standing.

**PHAR:9415 Elective: Pediatrics Rotation 6 s.h.**  
Clinical experience in drug therapy management of general and specialty pediatric patients. Requirements: P4 standing.

**PHAR:9416 Elective: Pharmacy Rotation 6 s.h.**  
Selected practice experiences in various pharmacy practice settings. Requirements: P4 standing.

**PHAR:9417 Elective Psychiatry Rotation 6 s.h.**  
Clinical experience in the rational use of drugs in psychiatric disorders. Requirements: P4 standing.

**PHAR:9418 Elective Research Rotation 6 s.h.**  
Practice experience in basic pharmaceutical or clinical research; proposal, study design, data collection and analysis, presentation of results. Requirements: P4 standing.

**PHAR:9419 Elective: Surgery Rotation 6 s.h.**  
Clinical experience in drug therapy management on a surgery unit. Requirements: P4 standing.

**PHAR:9420 Elective Pharmacy Practice Underserved Population Rotation 6 s.h.**  
Opportunity to learn the best practices for pharmaceutical management; approaches to enhance access to and appropriate use of medicines in underserved and resource-limited environments. Requirements: P4 standing.

**PHAR:9421 Elective Community Management Rotation 6 s.h.**  
Practice exposure to community pharmacy operations and management at the store, district, or corporate level. Requirements: P4 standing.

**PHAR:9422 Elective: Compounding/Complimentary Alternative Medicine Rotation 6 s.h.**  
Clinical work in a community setting with focus on team approach; experience developing extemporaneous compounds to optimize patient care and/or integrating traditional and nontraditional medicine. Requirements: P4 standing.
PHAR:9423 Elective: Critical Care Medicine Rotation
Practice experience providing pharmaceutical services to intensive care unit patients. Requirements: P4 standing.

PHAR:9424 Elective Emergency Medicine Rotation
Clinical experience providing pharmaceutical care for patients treated in the emergency department. Requirements: P4 standing.

PHAR:9425 Elective Hospital Management Rotation
Practice experience in hospital pharmacy operations and management. Requirements: P4 standing.

PHAR:9426 Elective Infectious Disease Rotation
Clinical experience providing pharmacotherapeutic management of patients receiving antimicrobial medications. Requirements: P4 standing.

PHAR:9427 Elective Medication Use Evaluation Rotation
Practical experience in drug use evaluation to improve patient outcomes. Requirements: P4 standing.

PHAR:9428 Elective Pharmacy Industry Rotation
Practice experience in an area of the pharmaceutical industry. Requirements: P4 standing.

PHAR:9429 Elective: Pharmacy Regulatory Rotation
Practice experience with a pharmacy regulatory body. Requirements: P4 standing.

PHAR:9430 Elective: Professional Association Rotation
Practice experience in professional association management environment at the state or national level. Requirements: P4 standing.

PHAR:9431 Elective: Veterinary Pharmacy Rotation
Practice experience in managing drug therapy for animals. Requirements: P4 standing.

PHAR:9432 Elective: Advanced Community Pharmacy Rotation
Community pharmacy experience emphasizing patient-centered care. Requirements: P4 standing.

PHAR:9433 Elective Academic Rotation
Practice experience delivering pharmacy education with a College of Pharmacy faculty member. Requirements: P4 standing.

PHAR:9434 Elective International Pharmacy Rotation
Practice experience in pharmacy practice outside the United States. Requirements: P4 standing.

### Pharmaceutical Sciences and Experimental Therapeutics for Pharm.D. Students

**PHAR:8111 Pharmaceutics I: Solutions** 4 s.h.
Application of physical and chemical principles to formulation, preparation of liquid dosage forms, including solution, colloids, ointments, emulsions. Requirements: P1 standing.

**PHAR:8112 Pharmaceutics II: Solids and Semi-Solids**
Properties of solids; formulation, preparation, evaluation of solid dosage forms. Requirements: P1 standing.

**PHAR:8121 Medicinal and Natural Products Chemistry I: Biotechnology and Chemotherapy**
Organic and inorganic medicinal and therapeutic agents of natural and synthetic origin; physical, chemical, biological, and biochemical properties as they relate to medicinal and therapeutic effects; comparative biological activity and toxicity; detoxication mechanisms; functional group chemistry; nomenclature; chemistry of radiodiagnostic and therapeutic agents; introduction to biopharmaceutical analysis. First in a three-course sequence. Prerequisites: CHEM:2220 and MICR:3112. Requirements: P1 standing.

**PHAR:8122 Medicinal and Natural Products Chemistry II: Pharmacodynamic Agents**
Medicinal chemistry of pharmacodynamic agents; introduction to peptides and proteins, thyroid hormone, diabetes, vaccines, gene therapeutics, NSAIDs, cardiovascular drugs, antihistamines, anticancer drugs. Second in a three-course sequence. Prerequisites: PHAR:8121. Requirements: P2 standing.

**PHAR:8123 Medicinal and Natural Products Chemistry III: Medicinal Neurochemistry**
Receptor site theory; steroids, lipids, and prostaglandins; sedatives and hypnotics; drugs of abuse; cholinergics; excitatory amino acids and anticonvulsants; major analgesics; adrenergics; psychotherapeutics. Third in a three-course sequence. Prerequisites: PHAR:8121 and PHAR:8122. Requirements: P2 standing.

**PHAR:8213 Pharmacokinetics and Biopharmaceutics**
Qualitative and quantitative description of kinetics of drug absorption, distribution, and elimination, including physiological factors that influence each process; adjustment of dosing regimens for optimizing therapeutic drug levels in the body; dosing considerations in special populations. Prerequisites: PHAR:8111 and PHAR:8112.

**PHAR:8230 Clinical Pharmacokinetics**
Application of pharmacokinetics to the clinical setting. Requirements: P2 standing.

**PHAR:8710 Introduction to Pharmacogenomics**
Introduction to pharmacogenetics in pharmacy; laboratory techniques, application of pharmacogenetics to clinical pharmacy.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>PHAR:8791</td>
<td>Survey of Basic Pharmaceutical Sciences</td>
<td>1 s.h.</td>
<td>Aspects of drug discovery and development; seminar with guest speakers from industry. Requirements: admission to Pharm.D. program.</td>
</tr>
<tr>
<td>PHAR:5310</td>
<td>Pharmaceutical Socioeconomics Seminar</td>
<td>1-2 s.h.</td>
<td>Recent research in pharmacy administration.</td>
</tr>
<tr>
<td>PHAR:5335</td>
<td>Social Aspects of Pharmacy Care</td>
<td>2 s.h.</td>
<td>Conceptual issues related to social and behavioral components of pharmacy care; social construction of health and illness, medication use process, health communications, cultural competence, public health.</td>
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<tr>
<td>PHAR:5350</td>
<td>Introduction to Research Methods</td>
<td>3 s.h.</td>
<td>Scientific inquiry, experimental design, data collection, statistical methods used in the study of health services and clinical investigations; focus on understanding the research process and evaluating published studies. Recommendations: introductory statistics.</td>
</tr>
<tr>
<td>PHAR:6305</td>
<td>Foundation Literature in Pharmaceutical Socioeconomics</td>
<td>arr.</td>
<td>Issues related to pharmacy administration, social and behavioral pharmacy, pharmacy education.</td>
</tr>
<tr>
<td>PHAR:6320</td>
<td>Pharmaceutical Socioeconomics Research</td>
<td>arr.</td>
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<tr>
<td>PHAR:6330</td>
<td>Models of Patient Behavior and Choice</td>
<td>3 s.h.</td>
<td>Theoretical models used to describe behavior and choice in pharmaceutical socioeconomic research; models from economics, health services research, health behavior, clinical decision making.</td>
</tr>
<tr>
<td>PHAR:6331</td>
<td>Models of Provider Behavior and Choice</td>
<td>3 s.h.</td>
<td>Theoretical background for study of provider decision making and behavior; models based on a classic economic approach, models used to study provider behavior.</td>
</tr>
<tr>
<td>PHAR:7330</td>
<td>Analytic Issues in Health Services Research I</td>
<td>3 s.h.</td>
<td>Analytic tools used in health services research; focus on applications in nonexperimental research settings, such as analyses using administrative claims data or preexisting public use data sets. Prerequisites: BIOS:5120. Same as HMP:7960.</td>
</tr>
<tr>
<td>PHAR:7331</td>
<td>Analytic Issues in Health Services Research II</td>
<td>3 s.h.</td>
<td>Continuation of HMP:7960; advanced applications, including panel data and qualitative response models. Prerequisites: HMP:7960. Same as HMP:7965.</td>
</tr>
</tbody>
</table>

### Pharmaceutical Sciences and Experimental Therapeutics for Graduate Students

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisites/Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHAR:3748</td>
<td>Quantitative Research Methods II: Materials Characterization</td>
<td>2 s.h.</td>
<td>Introduction to physical methods of pharmaceutical materials characterization; thermal, electrochemical, and spectrophotometric methods; lecture, discussion, and laboratory activities.</td>
</tr>
<tr>
<td>PHAR:5110</td>
<td>Clinical Pharmaceutical Sciences Seminar</td>
<td>1-2 s.h.</td>
<td>Research by faculty, graduate students.</td>
</tr>
<tr>
<td>PHAR:5135</td>
<td>Introduction to Clinical Pharmacogenomics</td>
<td>3 s.h.</td>
<td>Basic pharmacogenetic techniques; use of pharmacogenomics in clinical pharmacy. Prerequisites: BIOL:2512.</td>
</tr>
<tr>
<td>PHAR:5510</td>
<td>Medicinal and Natural Products Chemistry Seminar</td>
<td>1-2 s.h.</td>
<td>Contemporary research in medicinal chemistry and natural products.</td>
</tr>
<tr>
<td>PHAR:5512</td>
<td>Drug Discovery and Mechanisms</td>
<td>3 s.h.</td>
<td>Process of modern drug discovery, focus on high throughput screening strategies, target validation, pharmacological characterization of new compounds; mechanism of drugs targeting G protein coupled receptors, ion channels and transporters, targets in biological systems.</td>
</tr>
<tr>
<td>PHAR:5515</td>
<td>Perspectives in MNPC Research</td>
<td>1 s.h.</td>
<td></td>
</tr>
<tr>
<td>PHAR:5520</td>
<td>Medicinal and Natural Products Chemistry Research</td>
<td>arr.</td>
<td></td>
</tr>
<tr>
<td>PHAR:5521</td>
<td>High Throughput Screening for Pharmaceutical and Biomedical Sciences</td>
<td>1 s.h.</td>
<td>Broad introduction to high throughput screening (HTS) and its application in pharmaceutical and biomedical sciences; HTS as a modern technology platform integrated with robust detection systems and robotic liquid handling instruments; use of HTS platforms to identify biologically active small organic molecules to validate drug targets, screen compound libraries; identification of biologically active small molecules for use as probes, tool compounds, drug leads; systematic, unbiased, and/or focused hypothesis-based approaches for mechanistic studies in biological and medical sciences. Recommendations: bachelor degree in biochemistry, chemistry, molecular biology, pharmacology, or equivalent.</td>
</tr>
<tr>
<td>PHAR:5537</td>
<td>Enzymatic Basis of Drug Metabolism</td>
<td>3 s.h.</td>
<td>Current literature on catalytic and physical properties, distribution, and substrate specificity of enzymes involved in mammalian drug metabolism. Prerequisites: CHEM:2220.</td>
</tr>
<tr>
<td>PHAR:5541</td>
<td>Total Synthesis of Natural Products</td>
<td>3 s.h.</td>
<td></td>
</tr>
</tbody>
</table>
Total synthesis of natural products; use of strategies, tactics, efficiency, selectivity, synthetic maneuvering.

**PHAR:5542 Enzyme Mechanisms and Ligand Interactions**
1 s.h.
Enzymes as unparalleled catalysts that represent a unique class of drug targets; focus on organic chemistry of enzyme catalyzed reactions and enzyme inhibition by small molecules from a medicinal chemistry perspective; chemical and enzyme kinetics, sources of catalytic power, chemical mechanisms used in enzyme catalysis, role of coenzymes; strategies in enzyme inhibition, drug resistance, drug synergism, reversible enzyme inhibitors, transition state analogs, slow tight binding inhibitors, irreversible inhibition; taken alone or with BIOC:5242. Requirements: introductory course in biochemistry. Same as BIOC:5244.

**PHAR:5544 Pharmaceutical and Chemical Toxicology**
3 s.h.
Principles and mechanisms of chemical toxicology related to drugs and environmental agents; modern toxicological research methods.

**PHAR:5545 Current Medicinal Chemistry**
3 s.h.
Modern techniques used in drug discovery; important drug classes, their chemical mechanism of action.

**PHAR:5549 Analytical Biochemistry**
3 s.h.
Application of modern chromatographic and detection methods used to isolate, characterize, and quantify drugs and macromolecules.

**PHAR:5550 Synthetic Strategies in Medicinal Chemistry**
3 s.h.
Modern chemical methods for construction of carbon-carbon bonds commonly used in synthesis of natural products; strategic disconnections for the syntheses of these molecules.

**PHAR:5700 Quantitative Research Methods in Pharmacy I**
3-4 s.h.
Collection and interpretation of analytical data; instrumental analysis and separation techniques.

**PHAR:5745 Drug Delivery: Principles and Applications I**
arr.
Advanced design and development of drug delivery systems with emphasis on selection of materials and designs suitable for specific applications; comparison and evaluation of available and emerging technologies.

**PHAR:5746 Drug Delivery: Principles and Applications II**
arr.
Continuation of PHAR:5745. Prerequisites: PHAR:5745.

**PHAR:5875 Perspectives in Biocatalysis**
1-3 s.h.
Applied enzymology, protein design, structure-activity relationships, biosensor technology, microbial transformations, biodegradation of environmental pollutants. Requirements: graduate standing in a participating department supported by the Predoctoral Training Program in Biotechnology. Same as CHEM:5875, CBE:5875, CEE:5875, MICR:5875, BIOC:5875.

**PHAR:5930 Introduction to Pharmaceutical Sciences Research**
2 s.h.
Key principles and methods in pharmaceutical sciences research.

**PHAR:6120 Clinical Pharmaceutical Sciences Research**
arr.

**PHAR:6130 Analytical Techniques in Therapeutics**
2 s.h.
Basic concepts of cell culture, animal models, and biochemical techniques for mechanistic evaluation of drug actions.

**PHAR:6501 Principles and Mechanisms of Chemical Toxicology**
1 s.h.
General principles and basic mechanisms of chemical and pharmaceutical toxicology; drug/toxicant disposition, including biotransformation and bioactivation to electrophiles.

**PHAR:6502 Toxic Agents and Concepts in Toxicology**
1 s.h.
Specific classes of toxicants and non-organ directed toxicity, including chemical carcinogenesis, oxidative stress, teratogenesis; clinical toxicology, antidotes, methods and models in toxicology.

**PHAR:6503 Target-Organ Toxicity**
1 s.h.
Role of drugs/toxicants in systems toxicity (target organ); hepatotoxicity, neurotoxicity, cardiotoxicity, and toxic responses of immune system.

**PHAR:6700 Pharmacokinetics and Pharmacodynamics**
3 s.h.
Kinetics of drug absorption, distribution, and elimination, including development of mathematical models. Requirements: two semesters of calculus and one semester of statistics.

**PHAR:6701 Stability of Pharmaceuticals**
3 s.h.
Mechanisms of degradation of pharmaceuticals; prediction of shelf life of pharmaceuticals, stabilization. Prerequisites: CHEM:4432.

**PHAR:6703 Product Development**
3 s.h.
Application of physico-chemical principles to formulation and design of pharmaceutical dosage forms.

**PHAR:6705 Selected Topics in Pharmaceutical Sciences**
1-4 s.h.
Recent advances and contemporary research in pharmaceutics.

**PHAR:6706 Equilibria Processes**
3 s.h.
Equilibria pertaining to ionic systems, complexation, partitioning, solubility. Prerequisites: CHEM:4431.

**PHAR:6710 Pharmaceutics Graduate Seminar**
1-2 s.h.

**PHAR:6720 Pharmaceutics Research**
arr.

**PHAR:7100 Translational Research and Clinical Drug Development**
3 s.h.
Clinical drug development; preclinical studies and clinical trials; phase I, II, and III clinical trials, including regulatory considerations.
PHAR:7101 Principles of Experimental Therapeutics  3 s.h.
Introduction to key principles and concepts for research in experimental therapeutics; basic principles related to drug disposition, toxicity, and efficacy.

PHAR:7102 Applied Clinical and Translational Science  3 s.h.
Application of clinical and translational science in a multidisciplinary collaborative environment to develop, conduct, and report research.

PHAR:7700 Advanced Pharmacokinetics and Pharmacodynamics  3 s.h.
Selected topics, including nonlinear curve fittings. Prerequisites: PHAR:6700.

PHAR:7701 Surface Phenomena  arr.
Behavior of matter in phase boundaries, especially adsorptive processes at liquid-solid and vapor-solid interfaces. Prerequisites: CHEM:4431.

PHAR:7702 Transport Phenomena  3 s.h.
Diffusion and mass transport phenomena related to pharmaceutical systems. Prerequisites: CHEM:4431.
College of Public Health

Dean
• Susan J. Curry

Associate dean, faculty affairs
• Jeffrey Dawson

Associate dean, research
• Corinne Peek-Asa

Associate dean, education and student affairs
• Tanya Uden-Holman

Associate dean, public health practice
• Christopher G. Atchison

Associate dean, M.P.H. and undergraduate programs

Associate dean, administration
• Lori J. Cranston

Undergraduate certificate: public health
Graduate degrees: M.H.A.; M.P.H.; M.S.; Ph.D.
Graduate certificates: agricultural safety and health; biostatistics; emerging infectious disease epidemiology; public health; translational and clinical investigation
Web site: http://www.public-health.uiowa.edu/

The College of Public Health, established in 1999, is a partner with the Carver College of Medicine and the Colleges of Dentistry, Nursing, and Pharmacy in striving to improve human health and well-being. Consistent with the interdisciplinary traditions of public health, the college also collaborates with non-health science colleges across the University and with other Board of Regents, State of Iowa institutions, state and local agencies, and the private sector.

A population-based approach to health is a distinguishing feature of public health and of the college. For public health practitioners—a wide range of professionals including physicians, nurses, dentists, pharmacists, social workers, nutritionists, environmental scientists, health educators, and health service administrators—the primary focus is on the health of entire communities rather than individual patients. Tools that public health professionals use to improve and enhance quality of life include analytical methods to identify, describe, and monitor the health of communities and populations at risk; education and prevention programs, methods of assuring access to appropriate and cost-effective care; and formulation of sound public policies.

The public health approach has led to many important health improvements over the past century. Vaccination campaigns, improved sanitation, fluoridation of drinking water, and efforts to reduce tobacco use are among the most recognizable public health initiatives. Public health programs also have led to safer workplaces, reduction of deaths from coronary heart disease and stroke, improved motor vehicle safety, and creation of effective health systems to provide care to those who need it. Today, public health professionals play an important role worldwide in seeking better approaches to complex issues such as quality of life for the elderly, drug and alcohol abuse, teen pregnancy, new and reemerging infectious diseases, bioterrorism, health literacy, nutrition, and food safety.

The College of Public Health provides educational opportunities to students campuswide. In addition to training and educating public health students, the college welcomes students from the Tippie College of Business, the Carver College of Medicine, the Graduate College, and the Colleges of Dentistry, Education, Engineering, Law, Nursing, and Pharmacy who enroll in public health courses. Undergraduate students in the College of Liberal Arts and Sciences and graduate students from programs such as anthropology, microbiology, and statistics also register for public health courses. The college’s faculty members, staff members, and graduate and postdoctoral students contribute to teaching and research activities throughout the health sciences campus and provide services to Iowa and the nation. Partnerships for teaching and research extend across the campus. This background provides a rich array of educational opportunities.

The college includes the Departments of Biostatistics (p. 1146), Community and Behavioral Health (p. 1152), Epidemiology (p. 1158), Health Management and Policy (p. 1166), and Occupational and Environmental Health (p. 1180). It offers programs leading to four graduate degrees: Master of Health Administration (M.H.A.), Master of Public Health (M.P.H.), Master of Science (M.S.), and Doctor of Philosophy (Ph.D.). It also offers the Certificate in Agricultural Safety and Health (p. 1145), the Certificate in Biostatistics (p. 1146), the Certificate in Emerging Infectious Disease Epidemiology (p. 1157), the Certificate in Public Health (p. 1151), and the Certificate in Translational and Clinical Investigation (p. 1158).

The college is accredited by the Council on Education for Public Health (CEPH), the accrediting body for the nation's schools and colleges of public health. Three programs in the college currently are accredited: the industrial hygiene M.S. training program is accredited by ABET, the Master of Health Administration is accredited by the Commission on Accreditation of Healthcare Management Education (CAHME), and the Occupational and Environmental Health Residency is accredited by the Accreditation Council for Graduate Medical Education (ACGME).

Admission

Each department in the College of Public Health has an admission committee. Admission criteria usually include a satisfactory cumulative grade-point average; Graduate Record Examination (GRE) General Test scores; references; résumés; and for applicants whose first language is not English, scores on the Test of English as a Foreign Language (TOEFL). Other evaluation criteria may include oral and on-campus interviews, written statements, special emphasis on science and math courses, and a match of available faculty mentors with student interests. Application deadlines vary by program.

Applicants to College of Public Health programs must meet the admission requirements of the Graduate College. For detailed information about Graduate College policies, including application requirements and procedures, see the Manual of Rules and Regulations of the Graduate College.
Faculty
The college's faculty includes members with single appointments in the College of Public Health as well as those with joint appointments in other University of Iowa colleges, including the Carver College of Medicine and the Colleges of Dentistry, Engineering, Law, Liberal Arts and Sciences, Nursing, and Pharmacy. In addition, the college's faculty includes adjunct members from Drake University, Iowa State University, the University of Northern Iowa, the Iowa State Department of Public Health, the State Hygienic Laboratory at the University of Iowa, the Iowa Heart Center (in Des Moines), University of Iowa Hospitals and Clinics, and the National Institutes of Health.

Research Centers and Institutes
The College of Public Health is home to 27 centers and institutes that conduct research and provide public service. These multidisciplinary centers and institutes—most of which are supported by federal grants—focus their investigative efforts on important public health topics. They conduct an array of outreach, service, and policy activities through which the College of Public Health engages with agencies, communities, and organizations throughout Iowa, the Midwest, the nation, and the world. Students are encouraged to explore opportunities for involvement with any of the college's centers and institutes.

For more information, see Research Centers and Programs on the college's web site.

Facilities
The College of Public Health Building, a state-of-the-art facility that opened in early 2012 on the University's health sciences campus, houses the college's administrative, departmental, and faculty offices. The college's research centers, institutes, and specialized laboratories are located in Westlawn, on the health sciences campus; in University Capitol Centre, on the main campus east; and at the University of Iowa Research Park.

Eight student computer laboratories are housed at the college. More than 55 software packages are available for student use, most without charge. Software includes Microsoft Office products, SAS, and S+. Some specialty labs are equipped with RedHat Linux and are loaded with R, Macanova, Xlispstat, Mathematica, and other software.

Students, faculty, and staff draw on extensive library resources available across campus. Hardin Library for the Health Sciences serves as a central resource for all of the health sciences colleges. Hardin Library's Information Commons, a state-of-the-art health sciences educational technology facility, provides central support and delivery for courseware development, classroom instruction, health-related research, and independent learning. It offers high-end multimedia development workstations, networked electronic classrooms, a case-based learning and conference room, and information research workstations for searching health-related databases and the Internet.

Interdepartmental Degree
Master of Public Health Program (p. 1173)

Departments
Biostatistics (p. 1146)
Community and Behavioral Health (p. 1152)
Epidemiology (p. 1158)
Health Management and Policy (p. 1166)
Occupational and Environmental Health (p. 1180)
Certificate Programs
Agricultural Safety and Health (p. 1145)
Certificate in Public Health (p. 1151)
Emerging Infectious Disease Epidemiology (p. 1157)
Translational and Clinical Investigation (p. 1187)
Agricultural Safety and Health

Director
- Diane Rohlman

Graduate certificate: agricultural safety and health
Web site: http://www.public-health.uiowa.edu/certificate-ash/

Graduate Program of Study
- Certificate in Agricultural Safety and Health
The certificate program trains students to detect safety and illness hazards and to treat and prevent farm-related illnesses, injuries, and deaths. It is intended for health and safety professionals nationwide as well as for students at the University of Iowa and at other postsecondary institutions who are enrolled in health or safety programs and would like to add an agricultural health component to their training. The certificate may enhance employment opportunities in health care delivery, government, and the private sector.

The program is accredited by the Council on Education for Public Health.

Certificate
The Certificate in Agricultural Safety and Health requires 12 s.h. of graduate credit. Completion of the certificate is noted on the student's transcript.

The certificate is offered by distance education, but students are encouraged to take OEH:6110 Rural Health and Agricultural Medicine on campus; the course is offered twice yearly, once during spring semester and again as an intensive five-day workshop in June. Students may be able to complete OEH:7040 Preceptorship in Occupational and Environmental Health in their own communities.

The Certificate in Agricultural Safety and Health requires the following course work.

All of these:
- OEH:5410 Occupational Safety 3 s.h.
- OEH:5620 Occupational Health 3 s.h.
- OEH:6110 Rural Health and Agricultural Medicine 3 s.h.
- OEH:7020 Independent Study in Occupational and Environmental Health arr.
- OEH:7040 Preceptorship in Occupational and Environmental Health arr.

One of these:
- OEH:5010 Occupational and Environmental Health Seminar 1 s.h.
- OEH:6120 Current Topics in Agriculture and Rural Health 1 s.h.

Applicants to the certificate program should hold a bachelor's degree from an accredited university with a g.p.a. of at least 2.50; or they should have equivalent experience and education. Application materials must include the program's application form, a résumé, and a letter of interest explaining the applicant's current position and education objectives.

For more information about the program's curriculum or faculty, visit the Certificate in Agricultural Safety and Health web site.
Graduate students in biostatistics must maintain a g.p.a. of at least 3.00. Those who receive a grade of C on 7 s.h. of course work may be dismissed from the program.

The Master of Science in biostatistics requires the following course work.

**CORE COURSES**

All of these:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOS:5510 Biostatistical Computing</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>BIOS:5710 &amp; BIOS:5720 Biostatistical Methods I-II</td>
<td>8 s.h.</td>
</tr>
<tr>
<td>BIOS:5730 Biostatistical Methods in Categorical Data</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>BIOS:6610 Statistical Methods in Clinical Trials</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>BIOS:7500 Preceptorship in Biostatistics</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>EPID:4400 Epidemiology I: Principles</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

One of these sequences:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>STAT:4100-STAT:4101 Mathematical Statistics I-II</td>
<td>6 s.h.</td>
</tr>
<tr>
<td>STAT:5100-STAT:5101 Statistical Inference I-II (preferred for students who intend to earn a Ph.D.)</td>
<td>6 s.h.</td>
</tr>
</tbody>
</table>

Public health requirement:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MPH:6100 Essentials of Public Health</td>
<td>1 s.h.</td>
</tr>
</tbody>
</table>

**ELECTIVES**

One of these:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL:4213 Bioinformatics</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>CBH:4105 Introduction to Health Promotion and Disease Prevention</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ECE:5220 Computational Genomics</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>GENE:7191 Human Molecular Genetics</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>HMP:4000 Introduction to the U.S. Health Care System</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>OEH:4240 Global Environmental Health</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>PATH:8133 Introduction to Human Pathology for Graduate Students</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>PCOL:2120 Drugs: Their Nature, Action, and Use</td>
<td>2 s.h.</td>
</tr>
</tbody>
</table>

Another approved biology/public health course

At least 6 s.h. from these:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOS:5310 Research Data Management</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>BIOS:6210 Applied Survival Analysis</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>BIOS:6310 Introductory Longitudinal Data Analysis</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>BIOS:6810 Bayesian Methods and Design</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>BIOS:7110 Theory of Biostatistics I</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>BIOS:7120 Theory of Biostatistics II</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>BIOS:7210 Survival Data Analysis</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>BIOS:7310 Longitudinal Data Analysis</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>BIOS:7410 Analysis of Categorical Data</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>BIOS:7700 Problems/Special Topics in Biostatistics</td>
<td>1 s.h.</td>
</tr>
<tr>
<td>CS:3110 Introduction to Informatics</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>STAT:4520 Bayesian Statistics</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>STAT:6540 Applied Multivariate Analysis</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>STAT:7200 Linear Models</td>
<td>4 s.h.</td>
</tr>
</tbody>
</table>
**M.P.H. Subprogram**

The Department of Biostatistics offers the quantitative methods subprogram for the Master of Public Health. The subprogram is designed to train public health professionals for leadership in the analysis of public health data and the design of studies for public health investigations. See Master of Public Health Program (p. 1173) in the Catalog.

**Doctor of Philosophy**

The Doctor of Philosophy program in biostatistics requires a minimum of 79 s.h. of graduate credit, including credit from a master's degree. The program prepares students for professional and academic careers in biostatistics, especially for positions that emphasize developing and applying statistical methodology to solve important biological and public health problems.

All Ph.D. students must successfully complete a qualifying examination, a comprehensive examination, and a dissertation. The research topic and content, which vary depending on the program of study, must be approved by the student’s dissertation committee. Other degree requirements include approved electives chosen from Department of Biostatistics and other University of Iowa courses.

Graduate students in biostatistics must maintain a g.p.a. of at least 3.00. Those who receive a grade of C on 7 s.h. of course work may be dismissed from the program.

The Doctor of Philosophy in biostatistics requires the following work.

**MASTER OF SCIENCE BACKGROUND**

Ph.D. students must take the following courses (26 s.h.) required for the Master of Science in biostatistics. Students who have completed equivalent course work at other institutions may request waivers and/or transfers of credit. Students who earned a Master of Science in biostatistics at the University of Iowa automatically receive credit for these courses.

One of these sequences:

- **STAT:7400 Computer Intensive Statistics** 3 s.h.
- **STAT:7520 Bayesian Analysis** 3 s.h.

**BIOS:7410 Analysis of Categorical Data** 3 s.h.
**STAT:7200 Linear Models** 4 s.h.

**ELECTIVES**

With approval of their advisor, students choose 15-22 s.h. of graduate-level courses in biostatistics, statistics, genetics, microbiology, among others. They may count a maximum of 5 s.h. earned in nonquantitative courses (e.g., community and behavioral health, epidemiology, microbiology) toward the requirement. They also may count courses required for the Master of Science that are not listed under “Master of Science Background,” above, toward the requirement.

Ph.D. students may take the following courses.

- **BIOS:6210 Applied Survival Analysis** 3 s.h.
- **BIOS:6220 Cohort Data Analysis** 1 s.h.
- **BIOS:7500 Preceptorship in Biostatistics** 3 s.h.

(Additional to the Master of Science preceptorship)

- **BIOS:7600 Advanced Biostatistics Seminar** 0-3 s.h.
- **BIOL:4213 Bioinformatics** 4 s.h.
- **STAT:4520 Bayesian Statistics** 3 s.h.
- **STAT:6300 Probability and Stochastic Processes I** 3 s.h.
- **STAT:6540 Applied Multivariate Analysis** 3 s.h.
- **STAT:6560 Applied Time Series Analysis** 3 s.h.
- **STAT:7400 Computer Intensive Statistics** 3 s.h.
- **STAT:7520 Bayesian Analysis** 3 s.h.

**DISSERTATION**

**BIOS:7900 Thesis/Dissertation** (at least two semesters in residence) 10-17 s.h.

**Certificate**

The Certificate in Biostatistics requires a minimum of 15 s.h. of graduate credit. It is designed for students who would like to add a formal biostatistics emphasis to their graduate programs. Completion of the certificate is noted on the student's transcript.

The certificate program is open to students enrolled in a University of Iowa graduate degree program outside biostatistics. It is also open to individuals who hold graduate degrees in science disciplines or professional degrees in the health sciences and are admitted to the Graduate College as nondegree students (contact the Department of Biostatistics for more information).

Enrollment is limited; applicants who have completed at least one of the certificate's required courses and whose research will be advanced by biostatistics training are given priority for admission. Visit the Certificate in Biostatistics web site for an application form.

The certificate requires two core courses (6 s.h.) and three electives (9 s.h.). Students should work with an advisor to plan their course work carefully, since some certificate courses have prerequisites, require permission for enrollment, or are not offered every year. Students must earn a grade of at least B-minus in each certificate course and must maintain a cumulative g.p.a. of at least 3.00 in order to earn the certificate. They must complete at least 6 s.h. of the required course work after being admitted to the certificate program, and they may count a maximum of 9 s.h. of certificate credit toward a degree or
another certificate earned at the University. At least 6 s.h.
of the certificate plan of study must be exclusively applied
to the certificate.

The Certificate in Biostatistics requires the following
course work.

CORE COURSES
Both of these:

- BIOS:5110 Introduction to Biostatistics 3 s.h.
- BIOS:5120 Design and Analysis of Biomedical Studies 3 s.h.

ELECTIVES
Three of these (total of 9 s.h.):

- BIOS:5310 Research Data Management 3 s.h.
- BIOS:6110 Applied Categorical Data Analysis 3 s.h.
- BIOS:6210 Applied Survival Analysis 3 s.h.
- BIOS:6220 Cohort Data Analysis 1 s.h.
- BIOS:6310 Introductory Longitudinal Data Analysis 3 s.h.
- BIOS:6610 Statistical Methods in Clinical Trials 3 s.h.
- BIOS:7850 Research in Biostatistics arr.

Other courses may be approved as electives by the
Department of Biostatistics director of graduate studies.

Admission

Applicants to the M.S. and Ph.D. programs in biostatistics
must apply through the Schools of Public Health
Application Service (SOPHAS); they also must apply for
admission to the Graduate College through the University
of Iowa Office of Admissions. For detailed application
information, visit Prospective Students/Application Process
on the Department of Biostatistics web site.

The biostatistics faculty considers several factors when
evaluating applications for admission, including Graduate
Record Examination (GRE) General Test scores, grade-
point averages, letters of recommendation, intent and
motivation for graduate study, and research interests.

All M.S. and Ph.D. program applicants must hold a
bachelor's degree, have a cumulative g.p.a. of at least
3.00, and have taken the Graduate Record Examination
(GRE) General Test. Applicants whose first language is
not English and who do not hold a bachelor's degree
from an accredited institution in the United States, the
United Kingdom, Canada (except Quebec), Australia, or
New Zealand must score at least 100 (Internet-based)
on the Test of English as a Foreign Language (TOEFL).

Applicants with lower scores are not considered for
admission. In place of TOEFL scores, the department
accepts International English Testing System (IELTS)
scores of 7.0 or higher, with no subscore below 6.0.

All biostatistics applicants are required to have strong
written and oral communication skills.

All M.S. applicants must be competent in at least one
computer programming language. They also must have
mathematical sciences training in methods and techniques
of single variable and multivariable differential and
integral calculus, and in linear algebra.

Completion of an M.S. program in statistics or biostatistics
generally is required for admission to the Ph.D. program.

Applicants must meet the admission requirements of
the Graduate College; see the Manual of Rules and
Regulations of the Graduate College.

Students may enter the M.S. and Ph.D. programs in fall;
the priority application deadline for both programs is
December 1.

Financial Support

A limited number of teaching and research assistantships
are available. Assistantships offer financial support and
tuition assessed at the resident tuition rate along with a
tuition scholarship. They also provide valuable on-the-job
training experience.

For information on financing education through jobs,
grants, and loans, contact the University's Office of
Student Financial Aid.

Resources

Department of Biostatistics resources and activities
include three centers. The Biostatistics Consulting Center
provides opportunities for students to gain valuable
experience working with faculty and staff in the health
sciences at the University of Iowa. The Clinical Trials
Statistical and Data Management Center serves the
statistical design, data management, and analysis needs
of a variety of multicenter clinical trials, and among those
are Clinical Islet Transplantation (CIT) Consortium, Network
of Excellence in Neuroscience Clinical Trials (NEXT), and
the Parkinson's Progress Markers Initiative (PPMI). The
Center for Public Health Statistics facilitates the collection,
statistical analyses, and dissemination of health data in
support of the University's research, teaching, and service
missions and in partnership with the Iowa Department
of Public Health.

Courses

BIOS:4110 General Biostatistics 4 s.h.
Biostatistics and biostatistical computation; biostatistical
aspects of health-related areas—clinical trials, disease
modeling, disease mapping, genetics, and epidemiology;
brief introduction to survival and longitudinal analyses.

BIOS:4120 Introduction to Biostatistics 3 s.h.
Application of statistical techniques to biological data
including descriptive statistics; probability; normal,
binomial, and Poisson distributions; sampling distributions;
tests of significance; confidence intervals; analysis of
frequency data; simple linear regression. Requirements:
college algebra.

BIOS:4710 Biostatistical Methods 1 s.h.
Laboratory
Computational aspects of one-sample and two-sample
problems; analysis of frequency data, linear regression,
and correlation analysis; examples using these
computational methods in public health. Offered fall
semesters. Prerequisites: STAT:2010 and STAT:3200.

BIOS:5050 Biostatistics for Biomedical Research 1 s.h.
BIOS:5110 Introduction to Biostatistics 3 s.h.
Application of statistical techniques to biological data, including descriptive statistics; probability; normal, binomial, and Poisson distributions; sampling distributions; tests of significance; confidence intervals; analysis of frequency data; simple linear regression. Requirements: college algebra.

BIOS:5120 Design and Analysis of Biomedical Studies 3 s.h.
Simple and multiple linear regression and correlation; one- and two-way layout considerations in planning experiments; factorial experiments; multiple comparison techniques; orthogonal contrasts. Offered spring semesters. Prerequisites: BIOS:5110. Same as STAT:5610.

BIOS:5310 Research Data Management 3 s.h.
Overview of problems encountered in gathering and processing data from biomedical investigations; introduction to data management techniques useful in biomedical studies; introduction to Microsoft Access. Offered fall semesters. Requirements: Python or Java or C programming capability. Same as STAT:5810.

BIOS:5510 Biostatistical Computing 3 s.h.
Groundwork in SAS and R programming; emphasis on data management, Monte Carlo simulations, and expectation maximization techniques. Offered fall semesters. Corequisites: BIOS:5710. Recommendations: C and C++ skills.

BIOS:5710 Biostatistical Methods I 4 s.h.
Problem-oriented probability distributions, moments, estimation, parametric and nonparametric inference for one-sample and two-sample problems, analysis of frequency data, linear regression, and correlation analysis, with emphasis on use of computers. Offered fall semesters. Requirements: two semesters of calculus.

BIOS:5720 Biostatistical Methods II 4 s.h.
Continuation of BIOS:5710; linear regression and correlation, multiple linear regression, multiple factor experiments, multiple comparisons, orthogonal contrasts, block and split-plot designs, confounding interactions, and mixed models. Offered spring semesters. Prerequisites: BIOS:5710.

BIOS:5730 Biostatistical Methods in Categorical Data 3 s.h.
Introduction to methods for allied categorical data analysis; estimation of proportions, rates, and risks; measures of relative risk and odds ratios, stratified analysis, case control studies, logistic regression. Offered spring semesters. Prerequisites: BIOS:5510 and BIOS:5710. Corequisites: BIOS:5720 and (STAT:4101 or STAT:5101).

BIOS:6110 Applied Categorical Data Analysis 3 s.h.
Overview of methods to analyze categorical data from health science investigations; estimation of rates and risks, measures of relative risk, stratified analysis, logistic regression analysis. Offered fall semesters. Prerequisites: BIOS:5120.

BIOS:6210 Applied Survival Analysis 3 s.h.
Nonparametric, parametric, and semi-parametric methods for time to event data; censoring of event times into analysis; types of censoring; Kaplan-Meier estimation; Weibull model estimation; Cox proportional hazards models, including methods for assessing adequacy of proportional hazards assumption; time varying covariates; sample size calculations for comparison of two or more groups; focus on analysis of real data sets and examples using statistical software. Offered spring semesters. Prerequisites: BIOS:5710 or BIOS:6110.

BIOS:6220 Cohort Data Analysis 1 s.h.
Methods of comparing direct standardized rates and standardized mortality ratios; Poisson regression for cohort data. Offered spring semesters of odd years. Prerequisites: BIOS:6110.

BIOS:6310 Introductory Longitudinal Data Analysis 3 s.h.
Statistical models and estimation methods used to analyze correlated data (e.g., same subject measured repeatedly); emphasis on use of statistical software. Offered fall semesters of odd years. Prerequisites: STAT:3200 or STAT:6510 or BIOS:5730 or BIOS:6110. Same as STAT:6550.

BIOS:6610 Statistical Methods in Clinical Trials 3 s.h.
Survey of statistical methods commonly used in clinical trials; methodologic perspective on the design, conduct, and analysis of trials; emphasis on Phase III randomized controlled clinical trials. Offered spring semesters. Prerequisites: BIOS:5720 and (STAT:3101 or STAT:4101 or STAT:5101).

BIOS:6650 Comparative Effectiveness Research Methods for Observational Data 3 s.h.
Concepts of internal/external validity, counterfactuals, confounding, causal inference, and heterogeneity of treatment effect; methods including propensity scores, graphical models, inverse probability weighting, double robustness, marginal structural models, direct and indirect effects, instrumental variables. Prerequisites: BIOS:5710 and BIOS:5720 and BIOS:5730 and ((STAT:4100 and STAT:4101) or (STAT:5100 and STAT:5101)).

BIOS:6810 Bayesian Methods and Design 3 s.h.
Theory and application of Bayesian methods in biomedical research; foundations of Bayesian statistics, including axiomatic development of subjective probability and decision theory, study design, model development, inference, and implementation of computational algorithms. Prerequisites: BIOS:5510 and BIOS:5720 and BIOS:5730 and STAT:4100 and STAT:4101.
BIOS:7110 Theory of Biostatistics I 4 s.h.
Intermediate study of sufficiency, exponential families, methods of estimation, uniform minimum variance unbiasedness, information, likelihood theory, confidence intervals, the Neyman-Pearson lemma, asymptotic theory and its applications. Offered fall semesters of even years. Prerequisites: BIOS:5720 and (STAT:4101 or STAT:5101).

BIOS:7120 Theory of Biostatistics II 4 s.h.
Nonparametric hypothesis tests, semiparametric estimation, generalized linear models, generalized estimation equations, generalized linear mixed models, EM algorithm, computer-intensive methods; application of theory learned in BIOS:7110 to classical and new methods in biostatistics. Offered spring semesters of odd years. Prerequisites: BIOS:7110.

BIOS:7210 Survival Data Analysis 3 s.h.
Types of censoring and truncation; survival function estimation; life tables; parametric inference using exponential, Weibull, and accelerated failure time models; nonparametric tests; sample size calculation; Cox regression with stratification and time-dependent covariates; regression diagnostics; competing risks; analysis of correlated survival data. Offered fall semesters. Prerequisites: BIOS:5720 and (STAT:4101 or STAT:5101). Same as STAT:7570.

BIOS:7270 Scholarly Integrity in Biostatistics 1 s.h.
Responsible conduct of research training; emphasis on issues of particular relevance to biostatisticians including authorship, communication, student/mentor relationships, plagiarism, fabrication and falsification of data, bias, Type I/II errors, reproducible research, data confidentiality and security, conflicts of interest, human/animal subjects. Requirements: graduate standing in biostatistics.

BIOS:7310 Longitudinal Data Analysis 3 s.h.
Introduction to statistical methodology for analyzing data from observational and experimental studies in which the response variable from each subject is measured repeatedly; emphasis on use of statistical software packages and specialized programs. Offered spring semesters of odd years. Prerequisites: BIOS:5720 and (STAT:4101 or STAT:5101).

BIOS:7410 Analysis of Categorical Data 3 s.h.
Models for discrete data, distribution theory, maximum likelihood and weighted least squares estimation for categorical data, tests of fit, models selection. Offered spring semesters. Prerequisites: (STAT:4101 or STAT:5101) and (STAT:5200 or BIOS:5720). Same as STAT:7510.

BIOS:7500 Preceptorship in Biostatistics arr.
Work experience using knowledge and skill acquired in classroom; arranged in conjunction with ongoing departmental or collegiate activities or with governmental agencies or private industry; preparation of prospectus and presentation of research results in a department seminar.

BIOS:7600 Advanced Biostatistics Seminar 0-3 s.h.
Current topics; supervised experience in reading and interpreting biostatistical literature. Offered spring semesters.

BIOS:7604 Scholarly Integrity in Biostatistics for Postdocs 0 s.h.
Responsible conduct of research training; emphasis on issues of particular relevance to biostatisticians and statisticians including authorship, communication, student/mentor relationships, plagiarism, fabrication and falsification of data, bias, Type I/II errors, reproducible research, data confidentiality and security, conflicts of interest, human/animal subjects. Requirements: postdoctoral research scholar/fellow standing in biostatistics or statistics.

BIOS:7700 Problems/Special Topics in Biostatistics arr.
Didactic material in biostatistics; may include tutorials, seminars, faculty-directed independent work (e.g. literature search, project, short research project).

BIOS:7800 Independent Study in Biostatistics arr.
In-depth pursuit of an area of special interest in biostatistics requiring substantial creativity and independence.

BIOS:7850 Research in Biostatistics arr.
Research that may lead to a dissertation.

Certificate in Public Health

Coordinator
• Katie Boland

Undergraduate certificate: public health
Graduate certificate: public health

The College of Public Health offers the Certificate in Public Health for undergraduates and for graduate students. The certificate program is designed to improve public health practice and public health workforce capacity in Iowa and the upper Midwest. It is intended primarily for individuals in public health practice, those in the workforce, and those interested in strengthening their knowledge and skills in basic public health competencies.

Undergraduate Program of Study
• Certificate in Public Health
The College of Public Health administers and awards the undergraduate Certificate in Public Health.

Certificate
The undergraduate Certificate in Public Health requires 12 s.h. of credit and may be completed by distance education. All certificate courses are offered on the Internet at least once a year. All courses except EPID:3099 Evidence-Based Public Health Methods also are offered on the University of Iowa campus. Certificate students must have access to a computer and the Internet. Students who are enrolled only in the Certificate in Public Health program may not register for courses other than those required for the certificate.

Students must complete the certificate's required course work within five years of entering the program and must maintain a g.p.a. of at least 2.75 in work for the certificate.

The undergraduate Certificate in Public Health requires the following course work.

This course:
EPID:3099 Evidence-Based Public Health Methods
3 s.h.

One of these:
MPH:2099 Fundamentals of Public Health
3 s.h.
MPH:4101 Introduction to Public Health
3 s.h.

Two of these:
CBH:4105 Introduction to Health Promotion and Disease Prevention
3 s.h.
HMP:4000 Introduction to the U.S. Health Care System
3 s.h.
OEH:4240 Global Environmental Health
3 s.h.

Applicants to the undergraduate certificate program must have completed at least 60 s.h. of postsecondary education course work and must have a cumulative g.p.a. of at least 2.75. They must submit official transcript(s), a statement of purpose, two reference letters, a résumé, and an application form.

For more information about the program and how to apply, visit the Certificate in Public Health web site.

Graduate Program of Study
• Certificate in Public Health
The College of Public Health administers the graduate Certificate in Public Health; the certificate is conferred by the Graduate College.

Certificate
The graduate Certificate in Public Health requires 12 s.h. of credit.
All certificate courses are offered on the Internet at least once a year. All courses except EPID:3099 Evidence-Based Public Health Methods also are offered on the University of Iowa campus. Certificate students must have access to a computer and the Internet. Students who are enrolled only in the Certificate in Public Health program may not register for courses other than those required for the certificate.

Students must complete the certificate's required course work within five years of entering the program and must maintain a g.p.a. of at least 2.75 in work for the certificate. Students who are admitted to the M.P.H. program after they complete the certificate may apply a maximum of 9 s.h. of certificate credit toward the M.P.H. degree.

The graduate Certificate in Public Health requires the following course work.

Both of these:
EPID:3099 Evidence-Based Public Health Methods
3 s.h.
MPH:4101 Introduction to Public Health
3 s.h.

Two of these:
CBH:4105 Introduction to Health Promotion and Disease Prevention
3 s.h.
HMP:4000 Introduction to the U.S. Health Care System
3 s.h.
OEH:4240 Global Environmental Health
3 s.h.

Applicants to the graduate certificate program must hold a bachelor's degree and must have a cumulative g.p.a. of at least 2.75. They must submit official transcript(s), a statement of purpose, two reference letters, a résumé, and an application form.

For more information about the program and how to apply, visit the Certificate in Public Health web site.
Community and Behavioral Health

Head
• Edith A. Parker

Graduate degrees: M.S. in community and behavioral health; Ph.D. in community and behavioral health
Faculty: http://www.public-health.uiowa.edu/cbh-faculty-list/
Web site: http://www.public-health.uiowa.edu/cbh/

The Department of Community and Behavioral Health examines the relationship between human behavior and community health and focuses on creating effective strategies for change. Its faculty members come from a variety of disciplines within the social and health sciences, drawn together by an interest in health behavior and promoting healthy communities.

Community and behavioral health students learn how to design, implement, and evaluate interventions directed toward identified public health problems in communities. They learn how public and institutional policy, the media, and community organizations can promote healthy behavior and effect positive change.

Graduate Programs of Study
• Master of Science in community and behavioral health
• Doctor of Philosophy in community and behavioral health

Graduate students in community and behavioral health may earn degrees with or without subprograms. The Master of Science and Doctor of Philosophy programs offer an optional subprogram in health communication.

The department offers two subprograms for the Master of Public Health: the community and behavioral health subprogram and the health communication subprogram. See "M.P.H. Subprograms" below.

Master of Science
The Master of Science program in community and behavioral health requires 35 s.h. of graduate credit, including a thesis. The program prepares students for research and professional positions in community and behavioral health or for Ph.D. study in community and behavioral health. The degree is offered with an optional subprogram in health communication; see "M.S. Subprogram in Health Communication" below.

During the first semester, M.S. students work with their academic advisor to develop a plan of study that satisfies their interests and professional goals as well as the program's requirements. Students are required to attend departmental seminars and to complete all courses required for the degree.

The Master of Science in community and behavioral health requires the following course work.

COLLEGE OF PUBLIC HEALTH CORE
All of these (9-10 s.h.):

CBH:4105 Introduction to Health Promotion and Disease Prevention 3 s.h.

BIOS:5110 Introduction to Biostatistics 3 s.h.
EPID:4400 Epidemiology I: Principles 3 s.h.
MPH:6100 Essentials of Public Health (for students without an M.P.H.) 1 s.h.

BEHAVIORAL AND SOCIAL SCIENCES CORE
Three of these (9 s.h.):

CBH:3102 Medical Anthropology 3 s.h.
CBH:5205 Social Determinants of Health 3 s.h.
CBH:5220 Health Behavior and Health Education 3 s.h.
CBH:5420 Communicating with the Community 3 s.h.
CBH:6205 Designing and Implementing Interventions 3 s.h.
CBH:6210 Health Communication 3 s.h.
CBH:6215 Persuasion and Health 3 s.h.
CBH:6220 Health Communication Campaigns 3 s.h.

RESEARCH METHODS CORE
Two of these (6 s.h.):

CBH:5305 Evaluation I: Approaches and Applications 3 s.h.
CBH:5310 Qualitative Research for Public Health 3 s.h.
CBH:6305 Evaluation II: Design and Methods 3 s.h.
CBH:6335 Research Methods in Community and Behavioral Health 3 s.h.
BIOS:5120 Design and Analysis of Biomedical Studies 3 s.h.
PSQF:6249 Factor Analysis and Structural Equation Models 3 s.h.
PSQF:6252 Introduction to Multivariate Statistical Methods 3 s.h.

CONTENT AREA ELECTIVES
Students work with their advisor to select at least 5 s.h. of course work appropriate to their educational goals and emphasis areas. They may choose from any community and behavioral health courses not already taken, other College of Public Health courses, or other University of Iowa graduate-level courses.

THESIS
The thesis requirement is 6 s.h.

M.S. Subprogram in Health Communication
The M.S. subprogram in health communication is designed for students who wish to gain knowledge and skill in designing, evaluating, and implementing effective communication strategies and messages that use mediated and interpersonal channels to address the health needs of diverse audiences. The program focuses on clinician-patient interaction, family communication, group and organizational communication, and mass media and web-based campaigns.

The health communication subprogram combines the M.S. core course work with additional concentrated learning opportunities. Students fulfill the regular M.S. requirements, using the health communication core to satisfy the content area electives requirement.
HEALTH COMMUNICATION CORE
Four of these (12 s.h.):

- CBH:3150/JMC:3150 Media and Health 3 s.h.
- CBH:6210/COMM:6210 Health Communication 3 s.h.
- CBH:6215 Persuasion and Health 3 s.h.
- CBH:6220/COMM:6220 Health Communication Campaigns 3 s.h.
- COMM:6371 Communication Theory 3 s.h.

M.P.H. Subprograms
The Department of Community and Behavioral Health offers two subprograms for the Master of Public Health: the community and behavioral health subprogram and the health communication subprogram.

The M.P.H. subprogram in community and behavioral health prepares public health practitioners for a variety of positions in community development, health program implementation, and health education.

The M.P.H. subprogram in health communication prepares public health practitioners for a variety of employment opportunities in health communication strategies, health communication in groups and organizations, and mass media/web-based campaigns in health promotion.

For detailed information about the M.P.H. degree, see Master of Public Health Program (p. 1173) in the Catalog.

Doctor of Philosophy
The Doctor of Philosophy program in community and behavioral health requires at least 75 s.h. of graduate credit, including credit earned from a master's degree. The program prepares individuals for academic, research, and policy-making work in the social and behavioral health sciences. This fast-growing academic specialty offers many career opportunities in academic and research institutions. The Ph.D. is offered with an optional subprogram in health communication; see "Ph.D. Subprogram in Health Communication" below.

Ph.D. students must successfully complete a qualifying exam, a comprehensive exam, and a dissertation. The research topic must be approved by the student's dissertation committee.

During the first semester, students work with their academic advisor to develop a plan of study that satisfies their interests and professional goals as well as the program's requirements. Students are required to attend departmental seminars and to complete all courses required for the degree.

The Doctor of Philosophy in community and behavioral health requires the following work.

COLLEGE OF PUBLIC HEALTH CORE
All of these (9-10 s.h.):

- CBH:4105 Introduction to Health Promotion and Disease Prevention 3 s.h.
- BIOS:5110 Introduction to Biostatistics 3 s.h.
- EPID:4400 Epidemiology I: Principles 3 s.h.
- MPH:6100 Essentials of Public Health (for students without an M.P.H.) 1 s.h.

BEHAVIORAL AND SOCIAL SCIENCES CORE
Seven of these (21 s.h.):

- CBH:3102/ANTH:3102 Medical Anthropology 3 s.h.
- CBH:5205 Social Determinants of Health 3 s.h.
- CBH:5220 Health Behavior and Health Education 3 s.h.
- CBH:5420 Communicating with the Community 3 s.h.
- CBH:6205 Designing and Implementing Interventions 3 s.h.
- CBH:6210 Health Communication 3 s.h.
- CBH:6220 Health Communication Campaigns 3 s.h.

RESEARCH METHODS CORE
Five of these (15 s.h.):

- CBH:5305 Evaluation I: Approaches and Applications 3 s.h.
- CBH:5310 Qualitative Research for Public Health 3 s.h.
- CBH:6305 Evaluation II: Design and Methods 3 s.h.
- CBH:6335 Research Methods in Community and Behavioral Health 3 s.h.
- BIOS:5120 Design and Analysis of Biomedical Studies 3 s.h.
- BIOS:6110 Applied Categorical Data Analysis 3 s.h.
- GEOG:3505 Foundations of GIS 3 s.h.
- PSQF:6243 Intermediate Statistical Methods 4 s.h.
- PSQF:6249 Factor Analysis and Structural Equation Models 3 s.h.
- PSQF:6252 Introduction to Multivariate Statistical Methods 3 s.h.
- SOC:5160 Research Design and Methods 3 s.h.
- SOC:6170 Introduction to Sociological Data Analysis 3 s.h.
- SOC:6180 Linear Models in Sociological Research 3 s.h.
- SOC:7170 Advanced Statistical Modeling of Data 3 s.h.
- SOC:7180 Structural Equation Modeling 3 s.h.

CONTENT AREA ELECTIVES
Students work with their advisor to select at least 18 s.h. of course work appropriate to their educational goals and emphasis areas. They may choose from any Department of Community and Behavioral Health courses they have not already taken, other College of Public Health courses, or other University of Iowa graduate-level courses.

DISSERTATION
The dissertation requirement is 12 s.h.

Ph.D. Subprogram in Health Communication
The Ph.D. subprogram in health communication is designed for students who wish to prepare for academic, research, and policy-making careers in the area of health communication.

The health communication subprogram combines the core course work from the Ph.D. curriculum with additional specialized training. Students fulfill the regular Ph.D.
requirements, using the health communication core to satisfy the content area electives requirement.

**HEALTH COMMUNICATION CORE**

Four of these (12 s.h.):

- CBH:3150/JMC:3150 Media and Health 3 s.h.
- CBH:6210/COMM:6210 Health Communication 3 s.h.
- CBH:6215 Persuasion and Health 3 s.h.
- CBH:6220/COMM:6220 Health Communication Campaigns 3 s.h.
- COMM:6371 Communication Theory 3 s.h.

**Admission**

Applicants to the M.S. and Ph.D. programs in community and behavioral health must apply through the Schools of Public Health Application Service (SOPHAS); they also must apply for admission to the Graduate College through the University of Iowa Office of Admissions. Applications must include academic transcripts, three letters of recommendation, and a completed statement of purpose form. For detailed application information, visit Prospective Students/Application Process on the Department of Community and Behavioral Health web site.

The community and behavioral health faculty considers several factors when evaluating applications for admission, including scores on the Graduate Record Exam (GRE) General Test, grade-point averages, letters of recommendation, intent and motivation for graduate study, and research interests. A student with deficiencies in one area may be admitted if all other components of his or her application are very strong.

Applicants to the M.S. program must have a cumulative g.p.a. of at least 3.00 and should hold a bachelor's degree from an accredited college or university. No specific undergraduate major is required. Preference is given to applicants with Graduate Record Exam (GRE) General Test verbal scores of at least 154, quantitative scores of at least 150, and analytical writing scores of at least 4.0 (GRE scores must be less than five years old).

Applicants to the Ph.D. program must have a graduate g.p.a. of at least 3.40 and should hold a graduate degree from an accredited college or university—ideally, an M.S. in community and behavioral health, or another public health degree, or a related social science degree, or a clinical health degree. Applicants who do not hold a graduate degree should apply to the M.S. program. Preference is given to applicants with Graduate Record Exam (GRE) General Test verbal scores of at least 154, quantitative scores of at least 150, and analytical writing scores of at least 4.0 (GRE scores must be less than five years old). Ph.D. program applicants also must submit their master's thesis, or if no thesis is available, a sample of their scholarly writing.

Applicants whose first language is not English and who do not hold a bachelor's degree from an accredited institution in the United States, the United Kingdom, Canada (except Quebec), Australia, or New Zealand must score at least 100 (Internet-based) on the Test of English as a Foreign Language (TOEFL). Applicants who score 81-99 (Internet-based) are required to take English fluency courses if they are admitted. Applicants who score below 81 are not considered for admission.

Applicants must meet the admission requirements of the Graduate College; see the Manual of Rules and Regulations of the Graduate College.

Students enter the program in fall. The application deadline is January 15.

**Financial Support**

Several forms of financial support are available, including scholarships and awards, student loans, and graduate assistantships.

Graduate assistantships provide a stipend and entitle students to the resident rate of tuition and reduced health insurance costs. Research assistantships are competitive and are awarded according to department need and student merit.

Scholarships and fellowships are available through federal agencies, such as the Centers for Disease Control and the National Institutes of Health, and from private foundations.

**Resources**

The department houses two centers. The Prevention Research Center for Rural Health focuses on improving the health of rural Iowans. The National American Indian and Alaska Native Addiction Technology Transfer Center disseminates culturally legitimate evidence-based practice in substance abuse and behavioral health, and provides technical assistance, training, and systems change assistance to urban as well as tribal providers across the country.

Graduate students may have opportunities to work with ongoing research projects in the centers.

**Courses**

- **CBH:3102 Medical Anthropology** 3 s.h.
  Major theoretical, methodological approaches; international health and development; biomedicine as a cultural system; ethnomedicine; anthropology and AIDS, human reproduction, epidemiology, ethnopsychiatry.
  Prerequisites: ANTH:1101 or ANTH:2100. Same as ANTH:3102, GHS:3102.

- **CBH:3150 Media and Health** 3 s.h.
  Potential and limits of mass media's ability to educate the public about health; research and theory on the influence of information and entertainment media; theories, models, assumptions of mass communication in relation to public health issues. Same as JMC:3150, GHS:3150.

- **CBH:4105 Introduction to Health Promotion and Disease Prevention** 3 s.h.
  Basic concepts, strategies, and methods of health promotion and disease prevention; health promotion in the context of public health, theories and principles that underpin health promotion; overview of policy formation and health promotion planning, implementation, evaluation.

- **CBH:5140 The Anthropology of Women's Health** 3 s.h.
How female gender intersects with culture, environment, and political economy to shape health and illness; reproductive health; violence, drug use, cancer; readings in anthropology, public health. Prerequisites: ANTH:1101. Same as ANTH:4140, GWSS:4140, GHS:4140.

CBH:5205 Social Determinants of Health 3 s.h.
Substantial coverage of scholarly information regarding social determinants associated with health and health inequities and interventions directed at social determinants.

CBH:5215 Community Preventive Programs and Services 3 s.h.
Current public health problems and associated community, preventive, and evidence-based interventions; background information for these terms (community, preventive, evidence-based, interventions); skill development in evaluating reports of existing interventions.

CBH:5220 Health Behavior and Health Education 3 s.h.
Common theories of health behavior and health education and their application to varied public health problems and settings.

CBH:5230 Public Health Issues in Overweight Management 3 s.h.
Overview of overweight and obesity from a public health perspective, including epidemiology, measurement issues, and intervention approaches at individual, community, and policy levels. Prerequisites: CBH:4105 or MPH:4101.

CBH:5235 Community-Based Participatory Research 3 s.h.
How community-based participatory research (CBPR) has emerged as a critical approach to conduct research and produce scholarship; opportunities, challenges, needed skills, and methods by which researchers and community members partner to conduct research that leads to community well-being and health; students share their experiences, explore, and learn through case studies, guest lectures, and interactive activities; application of research methods through a CBPR approach.

CBH:5305 Evaluation I: Approaches and Applications 3 s.h.
Program evaluation methods for use in public health and related educational and social service programs; methods, approaches, and planning strategies for conducting program evaluations; role and function of evaluation within program life cycle; basics of formative, process, outcome, and cost evaluation; development of evaluation questions with appropriate data sources, data collection methods, and analytic techniques; creation of a logic model to guide an evaluation plan and explain role of logic model in the process of evaluation. Prerequisites: CBH:5220 and BIOS:5110 and EPID:4400. Requirements: enrollment in College of Public Health.

CBH:5310 Qualitative Research for Public Health 3 s.h.
Introduction to methods and theories of qualitative research that facilitate description and explanation of social phenomena related to health behavior, illness, prevention, and treatment in the public health domain.

CBH:5420 Communicating with the Community 3 s.h.
Communication skills for research and practice settings, taught from a cultural perspective with reference to gender, age, ethnicity; individual and constructive interviewing, public speaking, conducting focus groups.

CBH:5435 Substance Abuse Prevention and Early Intervention 3 s.h.
Prevalence and characteristics of several substance use disorders and the impact of such disorders on the individual, the community, and public health workers; how prevalence of substance use disorders varies among different ethnic and cultural groups, between men and women, across the life span, and through different socio-economic levels; how outcomes of substance abuse disorders vary at both the individual and community level as a function of these factors.

CBH:5440 Prevention and Early Intervention of Mental Health Disorders 3 s.h.
Prevalence and characteristics of mental health disorders; differences between ethnicity and culture, gender, age, and socioeconomic background; primary and secondary prevention; assessment and tertiary treatment approaches to mental health disorders.

CBH:6115 Ethnographic Field Methods 3 s.h.
Basic data-gathering techniques for field research in sociocultural anthropology. Same as ANTH:6115.

CBH:6205 Designing and Implementing Interventions 3 s.h.
Theoretical foundations, phases, and skills necessary to plan, design, and implement a public health intervention program; techniques and strategies for designing and implementing public health interventions; emphasis on community engagement; evidence-based and culturally- and contextually-situated methods and skills to plan, design, and implement public health intervention program; analysis of case studies, individual and small group work on assignments and development of a data-driven program. Prerequisites: CBH:5220. Requirements: admission to College of Public Health.

CBH:6210 Health Communication 3 s.h.
Theories, concepts, research associated with health communication; interpersonal and mass communication approaches. Same as COMM:6210.

CBH:6215 Persuasion and Health 3 s.h.
Theories of persuasion and social influence; attitude formation, relationship between attitudes and behavior, persuasion theories and their applications across health topics.

CBH:6220 Health Communication Campaigns 3 s.h.
Intervention design and analysis of health campaigns; theory, practice, methods; mass media, community, organization, and interpersonal approaches. Same as COMM:6220.

**CBH:6305 Evaluation II: Design and Methods** 3 s.h.
Research design and methodology for evaluation of public health and related programs; causality, evaluation theory, threats to validity, selection and comparison of research designs, sample selection and size, survey and scale construction, quantitative and qualitative data collection and analysis, data management, reporting; based on case study of an infant mortality prevention program. Prerequisites: CBH:5305. Requirements: biostatistics or statistics course.

**CBH:6335 Research Methods in Community and Behavioral Health** 3 s.h.
Writing a hypothetical NIH-style grant proposal related to community and behavioral health; research design, data collection methods, and research culture in public health field; exposure to emerging issues in design and publication of public health research. Prerequisites: BIOS:5110 and EPID:4400.

**CBH:6405 Maternal, Child, and Family Health** 3 s.h.
Overview of major issues, policies, and programs related to health of women, children, and families globally; social, political, and economic determinants. Prerequisites: EPID:4400.

**CBH:6410 Special Topics** arr.
Didactic material in community and behavioral health that may include tutorial, seminar, or faculty-directed independent work (e.g., literature search, project, short research project).

**CBH:6415 Independent Study in Community and Behavioral Health** arr.
Pursuit of an interest in community and behavioral health requiring substantial creativity and independence.

Emerging Infectious Disease Epidemiology

Head, Department of Epidemiology
• James C. Torner

Coordinator, Emerging Infectious Disease Epidemiology
• Kimberly Williams

Graduate certificate: emerging infectious disease epidemiology

Emerging infectious diseases increasingly are recognized as global and regional issues. Some infectious diseases are controlled effectively with the help of modern technology. But new diseases—such as SARS, West Nile, and avian influenza virus infections—appear frequently, and older ones, including malaria, tuberculosis, and bacterial pneumonia, are now appearing in forms that are resistant to drug treatments. All of them have the potential to seriously affect human and animal health as well as economies locally and worldwide. They pose novel and unceasing challenges for professionals in health care, government, and private agencies.

The Certificate in Emerging Infectious Disease Epidemiology is administered by the Department of Epidemiology (p. 1158). The Graduate College grants the certificate.

Graduate Program of Study

• Certificate in Emerging Infectious Disease Epidemiology

The certificate program provides basic information and training related to infectious diseases. It is designed for a broad range of individuals, including graduate students, international public health professionals, laboratory professionals, physicians, nurses, veterinarians, and medical technologists.

At this time, applications are only being accepted from current University of Iowa degree-seeking graduate students.

Certificate

The Certificate in Emerging Infectious Disease Epidemiology requires 12-13 s.h. of graduate credit.

Three of the certificate's required courses must be completed on campus: EPID:5570 Zoonotic Diseases, EPID:5580 Public Health Laboratory Techniques, and EPID:5590 Applied Infectious Disease Epidemiology or EPID:6550 Epidemiology of Infectious Diseases. The remaining courses may be completed on campus or by distance education.

Students must complete the certificate's required course work within five years of entering the program and must maintain a g.p.a. of at least 2.75 in work toward the certificate.

The Certificate in Emerging Infectious Disease Epidemiology requires the following course work.

Both of these:
- EPID:5570 Zoonotic Diseases 2-3 s.h.
- EPID:5580 Public Health Laboratory Techniques 1 s.h.

One of these:
- EPID:5590 Applied Infectious Disease Epidemiology 2 s.h.
- EPID:6550 Epidemiology of Infectious Diseases 3 s.h.

Two of these:
- BIOS:5110 Introduction to Biostatistics 3 s.h.
- EPID:4400 Epidemiology I: Principles 3 s.h.
- EPID:5550 Diagnostic Microbiology for Epidemiology 3 s.h.
- OEH:4240 Global Environmental Health 3 s.h.

Applicants to the certificate program must hold a baccalaureate degree from an accredited college or university and must have a g.p.a. of at least 2.75 (or foreign equivalent). For more information about the program and how to apply, visit the Certificate in Emerging Infectious Disease Epidemiology web site.
Epidemiology

Head
- James C. Torner

Graduate degrees: M.S. in clinical investigation; M.S. in epidemiology; Ph.D. in epidemiology
Faculty: http://www.public-health.uiowa.edu/epi-faculty-list/
Web site: http://www.public-health.uiowa.edu/epi/

The Department of Epidemiology focuses on surveillance for disease, risk factors for disease in the general population, behavioral factors in disease, use and outcome of health interventions and care, and the establishment and evaluation of disease control measures in the community. Students are guided by faculty members whose research interests include epidemiology of communication disorders, pharmacoepidemiology, cancer epidemiology, infectious disease epidemiology, adverse reproductive outcome epidemiology, anatomic pathology, genetics, cardiovascular disease, nutrition, smoking cessation, epidemiology of reproduction, dental epidemiology, clinical epidemiology, neuroepidemiology, meta-analysis, intervention trials, international health, and effects of aging.

Graduate Programs of Study
- Master of Science in clinical investigation
- Master of Science in epidemiology
- Doctor of Philosophy in epidemiology

The Department of Epidemiology collaborates with the University of Iowa Institute for Clinical and Translational Science to offer the M.S. program in clinical investigation and the Certificate in Translational and Clinical Investigation. In addition to its graduate degree, the department offers the epidemiology subprogram for the Master of Public Health; see "M.P.H. Subprogram" below. It also participates in a joint degree program with the Department of Biology (College of Liberal Arts and Sciences); see "Joint B.A. in Biology/M.S. in Epidemiology" below.

Master of Science: Clinical Investigation

The Master of Science program in clinical investigation requires 30 s.h. of graduate credit. In addition to completing the program's required course work, M.S. students must write a thesis in the form of a manuscript, or a grant proposal for a National Institutes of Health (NIH) career award or its equivalent, with oral defense.

The program, which is offered in collaboration with the University's Institute for Clinical and Translational Science, is designed for clinicians interested in pursuing careers in clinical research. It includes in-depth training in biostatistics, epidemiology, research ethics, and academic survival skills as well as didactic training applicable to clinical research careers. Graduates of the program are able to critically evaluate clinical literature, write competitive grant proposals, design and conduct clinical research projects, work effectively with other researchers and support staff, and disseminate research results through manuscripts and presentations.

Applicants to the program must have completed the following course work.

- BIOS:5110 Introduction to Biostatistics (or equivalent) 3 s.h.
- EPID:4400 Epidemiology I: Principles (or equivalent) 3 s.h.
- Courses in pathology, physiology, and/or pharmacology 6 s.h.

Students who are admitted to the program with deficiencies in the required 6 s.h. of pathology, physiology, and/or pharmacology may complete courses that fulfill the requirement once they have enrolled in the program.

Graduate students in the Department of Epidemiology must maintain a g.p.a. of at least 3.00. Those who receive a grade of C in 7 s.h. of course work may be dismissed from the program.

The Master of Science in clinical investigation requires the following course work.

CORE COURSES
Students must complete all of the following core courses (20 s.h.).

- EPID:5241 Statistical Methods in Epidemiology 4 s.h.
- EPID:5500 Introduction to Clinical Epidemiology 3 s.h.
- EPID:5610 Intermediate Epidemiology Data Analysis with SAS and R 3 s.h.
- EPID:6000 Independent Study in Epidemiology 2 s.h.
- EPID:6150 Writing for Medical Journals 1 s.h.
- EPID:6400 Epidemiology II: Advanced Methods 4 s.h.
- EPID:6950 Clinical Research Ethics 2 s.h.
- MPH:6100 Essentials of Public Health 1 s.h.

ELECTIVES
Students must earn a minimum of 10 s.h. in elective course work, which must include at least 3 s.h. in focus area electives. In addition to the focus area electives, the following courses are recommended as elective course work.

- EPID:5214 Meta-Analysis of Epidemiologic Studies 3 s.h.
- EPID:6100 Writing a Research Protocol 3 s.h.
- EPID:6900 Design of Intervention and Clinical Trials Research 3 s.h.
- EPID:6910 Pharmacoepidemiology 3 s.h.

Focus Area Electives
Students must complete at least 3 s.h. chosen from the following focus area electives.

Health Services Epidemiology

- EPID:4990 Practicing Evidence-Based Public Health 3 s.h.
- EPID:6360 Nutrition Intervention in Clinical Trials Research 2 s.h.
- EPID:6900 Design of Intervention and Clinical Trials 3 s.h.
- EPID:6910 Pharmacoepidemiology 3 s.h.
- BIOS:6610 Statistical Methods in Clinical Trials 3 s.h.
- BIOS:7600 Advanced Biostatistics Seminar 3 s.h.
CBH:6205 Designing and Implementing Interventions 3 s.h.
PCOL:5136 Pharmacogenetics and Pharmacogenomics 1 s.h.
PHAR:7100 Translational Research and Clinical Drug Development 3 s.h.

**Nutrition Science**
EPID:4120 Public Health Nutrition 3 s.h.
EPID:6245 Epidemiology of Physical Activity 3 s.h.
EPID:6330 Global Nutrition Policy 3 s.h.
EPID:6350 Nutritional Epidemiology 2 s.h.
EPID:6360 Nutrition Intervention in Clinical Trials Research 2 s.h.
EPID:6370 Nutrition Intervention in Research Lab 3 s.h.

**Epidemiology**
EPID:5560 Introduction to Molecular Epidemiology 3 s.h.
EPID:5570 Zoonotic Diseases 3 s.h.
EPID:6250 Genetics and Epidemiology 4 s.h.
EPID:6510 Injury Epidemiology 3 s.h.
EPID:6530 Epidemiology of Occupational Injuries 3 s.h.
EPID:6550 Epidemiology of Infectious Diseases 3 s.h.
EPID:6560 Hospital Epidemiology 2 s.h.
EPID:6600 Epidemiology of Chronic Diseases 3 s.h.
EPID:6630 Epidemiology of Reproductive Diseases 2 s.h.
EPID:6640 Epidemiology of Maternal and Infant Health 2 s.h.
EPID:6650 Cardiovascular Disease Epidemiology 3 s.h.
EPID:6670 Psychiatric Epidemiology 3 s.h.
EPID:6700 Cancer Epidemiology and Control 3 s.h.
DPH:6004 Principles of Oral Epidemiology 3 s.h.
GEOG:3110 Geography of Health 3 s.h.

**Informatics**
EPID:4450 Public Health Data 2 s.h.
EPID:5200 Principles of Public Health Informatics 3 s.h.
EPID:5600 Introduction to Epidemiology Data Management and Analysis 3 s.h.
HMP:5315 Health Services Information Systems 3 s.h.
HMP:5370 Health Informatics I 3 s.h.
IGPI:5210 Health Informatics II 3 s.h.

**Community Studies**
CBH:5235 Community-Based Participatory Research 3 s.h.
CBH:5305 Evaluation I: Approaches and Applications 3 s.h.
CBH:6205 Designing and Implementing Interventions 3 s.h.
CBH:6305 Evaluation II: Design and Methods 3 s.h.
EPLS:5165 Introduction to Program and Project Evaluation 3 s.h.

**Statistical Methods**
BIOS:6210 Applied Survival Analysis 3 s.h.
BIOS:6310 Introductory Longitudinal Data Analysis 3 s.h.

**Outcomes and Health Services Research**
HMP:5410 Health Economics I 3 s.h.
HMP:7550 Cost Effectiveness and Decision Analysis 3 s.h.
HMP:7960 Analytic Issues in Health Services Research I 3 s.h.
HMP:7965 Analytic Issues in Health Services Research II 3 s.h.

**Pharmacy Science**
PHAR:5310 Pharmaceutical Socioeconomics Seminar 1 s.h.
PHAR:5350 Introduction to Research Methods 3 s.h.
PHAR:6305 Foundation Literature in Pharmaceutical Socioeconomics 3 s.h.

**Master of Science: Epidemiology**
The Master of Science program in epidemiology requires 39 s.h. of graduate credit and is offered with or without thesis. The program prepares graduate students for professional careers in which specialized knowledge of epidemiological methods and analytic techniques are essential. Graduates find employment in local, state, and federal health agencies, academic institutions, and private enterprise, for example, hospitals, pharmaceutical and device companies, insurance companies, and foundations.

Graduate students in epidemiology must maintain a g.p.a. of at least 3.00. Those who receive a grade of C in 7 s.h. of course work may be dismissed from the program. Students who choose to complete the degree without thesis are required to pass a comprehensive examination.

Students are required to attend 80 percent, for three semesters, of all Department of Epidemiology seminar meetings and journal club meetings. They must present one scientific poster at the departmental level before they may graduate, and the department recommends that they present at the international, national, regional, state, or University level before graduating.

The Master of Science in epidemiology requires the following course work.

**CORE COURSES**
Students earn 30-31 s.h. in the required core, as follows.
All of these:
EPID:4400 Epidemiology I: Principles 3 s.h.
EPID:5241 Statistical Methods in Epidemiology 4 s.h.
EPID:5600 Introduction to Epidemiology Data Management and Analysis 3 s.h.
EPID:5610 Intermediate Epidemiology Data Analysis with SAS and R 3 s.h.
EPID:5925 Epidemiology Journal Club: Evaluating the Literature 0 s.h.
EPID:6400 Epidemiology II: Advanced Methods 4 s.h.
BIOS:5110 Introduction to Biostatistics 3 s.h.
MPH:6100 Essentials of Public Health 1 s.h.
One of these:

- PATH:5270 Pathogenesis of Major Human Diseases 3 s.h.
- PATH:8133 Introduction to Human Pathology for Graduate Students 4 s.h.

One of these:

- EPID:6550 Epidemiology of Infectious Diseases 3 s.h.
- EPID:6600 Epidemiology of Chronic Diseases 3 s.h.

One of these:

- EPID:5950 Preceptorship in Epidemiology (for nonthesis students) 3 s.h.
- EPID:7000 Thesis/Dissertation (for thesis students, may be taken twice) 3 s.h.

**ELECTIVES**

Students must earn a minimum of 5 s.h. in elective course work from Department of Epidemiology courses (prefix EPID) and 2 s.h. in additional graduate course work pertinent to the student's educational goals and background (the additional 2 s.h. may be earned in an epidemiology course or in another graduate course, with the advisor's approval). The following courses are recommended.

- BIOS:6210 Applied Survival Analysis 3 s.h.
- BIOS:6310 Introductory Longitudinal Data Analysis 3 s.h.
- CBH:5220 Health Behavior and Health Education 3 s.h.
- HMP:4000 Introduction to the U.S. Health Care System 3 s.h.
- OEH:4240 Global Environmental Health 3 s.h.

Students may need additional elective course work in order to complete the minimum 39 s.h. required for the degree.

**Joint B.A. in Biology/M.S. in Epidemiology**

Bachelor of Arts students majoring in biology who are interested in earning a Master of Science in epidemiology may apply to the joint B.A./M.S. program offered by the College of Liberal Arts and Sciences and the College of Public Health. The joint program permits students to count 12 s.h. of credit toward the requirements of both degrees, enabling them to begin the study of public health before they complete their bachelor's degree. For information about the B.A. program, see Biology (p. 119) (College of Liberal Arts and Sciences) in the Catalog.

**M.P.H. Subprogram**

The Department of Epidemiology offers the epidemiology subprogram for the Master of Public Health. The subprogram focuses on fundamental concepts and methods and provides training in the use of data and methods for disease assessment and for evaluation of programs and interventions. Graduates of the program work in public health departments and other health care settings. See Master of Public Health Program (p. 1173) in the Catalog.

**Doctor of Philosophy: Epidemiology**

The Doctor of Philosophy program in epidemiology requires a minimum of 78 s.h. of graduate credit. The program prepares graduate students for careers as scientists, teachers, and practitioners of epidemiologic methods. Employment opportunities exist in academic institutions; local, state, and federal health agencies; and in private enterprises.

Graduate students in epidemiology must maintain a g.p.a. of at least 3.00. Those who receive a grade of C in 7 s.h. of course work may be dismissed from the program.

All doctoral students must successfully complete a qualifying examination, a comprehensive examination, a dissertation prospectus, and a dissertation. The research topic and content, which vary depending on the program of study, must be approved by the student's dissertation committee. Other degree requirements include approved electives chosen from Department of Epidemiology courses (prefix EPID) and other University of Iowa courses.

Students are required to attend 80 percent, for five semesters, of all Department of Epidemiology seminar meetings and journal club meetings; attendance during the student's enrollment in the M.S. program does not count toward this requirement. Students also must present a departmental seminar on their dissertation research and an oral presentation or scientific poster presentation at an international, national, regional, state, or University level before they may graduate.

The Doctor of Philosophy in epidemiology requires the following course work.

**CORE COURSES**

Students earn 39-41 s.h. in the required core, as follows.

All of these:

- EPID:4400 Epidemiology I: Principles 3 s.h.
- EPID:5241 Statistical Methods in Epidemiology 4 s.h.
- EPID:5600 Introduction to Epidemiology Data Management and Analysis 3 s.h.
- EPID:5610 Intermediate Epidemiology Data Analysis with SAS and R 3 s.h.
- EPID:5925 Epidemiology Journal Club: Evaluating the Literature 0 s.h.
- EPID:6050 Research in Epidemiology 3 s.h.
- EPID:6100 Writing a Research Protocol 3 s.h.
- EPID:6400 Epidemiology II: Advanced Methods 4 s.h.
- EPID:7400 Epidemiology III: Theories 3 s.h.
- BIOS:5110 Introduction to Biostatistics 3 s.h.
- MPH:6100 Essentials of Public Health 1 s.h.

One of these:

- BIOS:6210 Applied Survival Analysis 3 s.h.
- BIOS:6310 Introductory Longitudinal Data Analysis 3 s.h.

One of these:

- PATH:5270 Pathogenesis of Major Human Diseases 3 s.h.
- PATH:8133 Introduction to Human Pathology for Graduate Students 4 s.h.
Focus Area
Each Ph.D. student must declare a focus area. Working with the focus area coordinator, a student develops a study plan that will enable him or her to develop substantive knowledge in a specific area that will lead to important original research. Focus areas for Ph.D. students include cancer control, cancer etiology, infectious disease, occupational and environmental epidemiology, and pharmacoepidemiology. For lists of required course work in each focus area, see Ph.D. in Epidemiology on the department’s web site. Individualized Ph.D. programs may be completed with the department’s approval.

ELECTIVES
Students must complete a total of 23-25 s.h. of elective course work. They must earn 3 s.h. in a Department of Epidemiology course (prefix EPID) outside their focus area and at least 20 s.h. in courses in their focus area. Course selection must be approved by the student's advisor and Ph.D. plan of study committee.

DISSERTATION
All doctoral students must successfully complete a Ph.D. thesis.

Certificate in Translational and Clinical Investigation
The Department of Epidemiology and the Institute for Clinical and Translational Science offer the graduate certificate program in translational and clinical investigation; see Translational and Clinical Investigation (p. 1187) in the Catalog.

Related Certificate: Emerging Infectious Disease Epidemiology
The College of Public Health and the Graduate College offer the Certificate in Emerging Infectious Disease Epidemiology. The certificate program provides basic information and training related to infectious diseases. It is designed for a broad range of individuals, including graduate students, international public health professionals, laboratory professionals, physicians, nurses, veterinarians, and medical technologists. To learn more, see Emerging Infectious Disease Epidemiology (p. 1157) in the Catalog.

Admission
Applicants to the M.S. and Ph.D. programs in the Department of Epidemiology must apply through the Schools of Public Health Application Service (SOPHAS); they also must apply for admission to the Graduate College through the University of Iowa Office of Admissions. For detailed application information, visit Prospective Students/How to Apply on the Department of Epidemiology web site.

M.S.: Clinical Investigation
Applicants to the M.S. program in clinical investigation must hold a doctorate-level degree in a clinical discipline (e.g., M.D., D.O., D.D.S., Ph.D., Pharm.D., D.V.M.) or be enrolled in the Medical Scientist Training Program (p. 1048) (Carver College of Medicine). They must hold a baccalaureate degree with a cumulative g.p.a. of at least 3.00; foreign-trained applicants must have an outstanding doctoral training record.

Applicants are considered based on their credentials, prior training, and research training plans. An applicant with deficiencies in one area may be admitted if all other components of his or her application are strong. Applicants must have a sponsoring department.

Applicants must meet the admission requirements of the Graduate College: see the Manual of Rules and Regulations of the Graduate College.

Application deadlines are April 1 for U.S. citizens, March 15 for international applicants.

M.S. and Ph.D.: Epidemiology
The epidemiology faculty considers several factors when evaluating applications for admission, including Graduate Record Exam (GRE) General Test scores, grade-point average, letters of recommendation, intent and motivation for graduate study, and research interests. A student with deficiencies in one area may be admitted if all other components of his or her application are very strong.

All M.S. program applicants must hold a baccalaureate degree and have a cumulative g.p.a. of at least 3.00. Undergraduate preparation must include two semesters of biological sciences and mathematics through algebra. Course work in statistics is highly recommended.

Ph.D. program applicants must hold a baccalaureate degree (an M.S. or M.P.H. usually is required) and must have a cumulative g.p.a. of at least 3.00. Courses in the biological, physical, and mathematical sciences provide important background; one semester of calculus, one semester of statistics or biostatistics, and two semesters of biological sciences are highly recommended. Computing skills also are desirable.

All applicants to the M.S. or Ph.D. program must have taken the Graduate Record Examination (GRE) General Test, the Medical College Admission Test (MCAT), or the Dental Admission Test (DAT), scoring above the 50th percentile, within four years before applying to the epidemiology program. The department prefers recent test scores, particularly for applicants who completed educational programs and/or courses after taking one of these tests.

Applicants whose first language is not English and who do not hold a baccalaureate degree from an accredited institution in the United States, the United Kingdom, Canada (except Quebec), Australia, or New Zealand must score at least 100 (Internet-based) on the Test of English as a Foreign Language (TOEFL). Applicants who score 81-99 (Internet-based) are required to take English fluency courses. Applicants who score below 81 are not considered for admission. In place of TOEFL scores, the department accepts International English Testing System (IELTS) scores of 7.0 or higher, with no subscore below 6.0.

All M.S. and Ph.D. applicants and students are required to have strong written and oral communication skills.
Applicants must meet the admission requirements of the Graduate College; see the Manual of Rules and Regulations of the Graduate College. Application deadlines for fall entrance to the M.S. in epidemiology are June 1 for U.S. citizens, April 1 for international applicants. Application deadline for fall entrance to the Ph.D. in epidemiology is April 1.

Financial Support
A limited number of graduate research assistantships are available for advanced M.S. and Ph.D. students; for information, consult the department. For information on financing education through jobs, grants, and loans, contact the University's Office of Student Financial Aid. Scholarships for incoming Ph.D. students are available; for information, visit the Department of Epidemiology web site. Opportunities for funded predoctoral fellowships are available. Funded positions sponsored by federal agencies are available only to U.S. citizens.

Resources
The State Health Registries of Iowa, which encompasses the Iowa Cancer Registry and the Iowa Registry for Congenital and Inherited Disorders, works in cooperation with the Iowa Department of Public Health to collect medical data on Iowans. The Iowa Cancer Registry is one of 18 registries nationwide that report data to the National Cancer Institute. The Preventive Intervention Center conducts population-based intervention trials to prevent occurrence and recurrence of disease and to promote wellness, with a focus on the elderly. It also specializes in research promoting prevention of cardiovascular disease and provides an interdisciplinary approach to risk factor interventions. The Health Effectiveness Research Center is a collaborative research enterprise with the College of Pharmacy that studies whether particular health care treatments or services are over- or underutilized. The Center for Emerging Infectious Diseases employs epidemiological methods, laboratory technologies, and clinical evaluations to achieve a better understanding of emerging infectious diseases. The Nutrition Center provides expertise in nutrition and dietary assessment, of emerging infectious diseases. The Nutrition Center provides expertise in nutrition and dietary assessment, of emerging infectious diseases.

Courses

**EPID:3099 Evidence-Based Public Health Methods**
3 s.h.
How to choose, conduct, and evaluate evidence-based programs and policies in public health; finding and using scientific evidence, implementing and evaluating interventions that produce new evidence. Offered summer sessions. Requirements: Certificate in Public Health enrollment.

**EPID:4110 Quality Dietary Studies for Individuals and Environment**
3 s.h.
Overview of current methods to evaluate the quality of nutrition in individuals, communities, and environment; methods include dietary records, dietary recalls, food frequency questionnaires and screeners, and nutrition environmental assessments. Recommendations: a basic nutrition course.

**EPID:4120 Public Health Nutrition**
3 s.h.
Case studies of state and federal public health nutrition programs and role of public health practitioners; identifying community need for action around public health nutrition policy and environmental change; topic-specific public health nutrition programs in children; prevention of obesity, cardiovascular disease, and cancer.

**EPID:4210 International Health**
3 s.h.
Urgent health problems in the developing world and among disadvantaged populations in developed countries; biological, social, cultural, political aspects of international health problems; applications of research methods from epidemiology, environmental health, social sciences. Same as GHS:4210, OEH:4210.

**EPID:4314 Field Experiences in Public Health**
1 s.h.
Direct involvement in actions being taken at local community level; topics include environmental health, infectious diseases, chronic diseases, and pediatric health; practical examples and hands-on experiences during site visits for topic-specific field investigations. Requirements: biology or microbiology course work.

**EPID:4400 Epidemiology I: Principles**
3 s.h.
Epidemiological concepts and methods; design of descriptive and analytic studies, such as aggregate, case series, cross-sectional, case-control, cohort studies, clinical trials; application of epidemiology to public health practice; communication and dissemination of epidemiological findings.

**EPID:4450 Public Health Data**
2 s.h.
Concepts and methods of obtaining and using public health data in community settings; how public health data are used for epidemiologic investigations and prevention programs. Offered spring semesters of odd years. Corequisites: BIOS:5110 and EPID:4400.

**EPID:4510 Injury and Violence Prevention**
3 s.h.
Theory, research, and practice of injury control; unintentional and intentional injuries; local, national, international injury issues. Same as OEH:4510.

**EPID:4520 Research Methods in Disaster Studies**
3 s.h.
Epidemiologic study of disasters and their health consequences; research to identify and reduce health effects, research in context of response and preparedness. Same as OEH:4520, GHS:4275.

**EPID:4990 Practicing Evidence-Based Public Health**
3 s.h.
How epidemiologic and other scientific studies underlie public health practice; relationship between evidence and action; controversies at interface of science and policy. Offered spring semesters of even years.
EPID:5200 Principles of Public Health Informatics  
3 s.h.  
Systematic applications of information science, computer science, and technology to public health practice, research, and learning; methods of disease surveillance, data collection, analysis, and reporting with health informatics. Offered fall semesters. Same as IGPI:5220.

EPID:5214 Meta-Analysis of Epidemiologic Studies  
3 s.h.  
Methods for quantitative pooling of analytic study associations (cohort and case-control) between exposure and a dichotomous outcome; literature searches, data abstraction, test of homogeneity, publication bias and consideration of adjusted risk ratios (effects of confounding). Offered spring semesters of odd years. Prerequisites: EPID:4400 and BIOS:5120.

EPID:5241 Statistical Methods in Epidemiology  
4 s.h.  
Overview of methods to analyze data from epidemiologic investigations; estimation of relative measures of risk, attributable risk, stratified analysis; model-fitting approaches using linear, logistic, and Poisson regression analysis; confounding and effect modification; analysis of epidemiologic data sets. Prerequisites: BIOS:5110.

EPID:5300 Food Safety  
3 s.h.  
Current issues and concepts of food safety in the United States, from plant to table; foodborne illness from microbial agents, food toxins, adulterants; disease investigation, risk analysis, risk mitigation, prevention. Offered summer sessions.

EPID:5320 Exotic and Emerging Diseases of Animals  
1 s.h.  
Major exotic and emerging animal diseases; veterinarian's role in recognizing and diagnosing such diseases; how outbreaks affect economies and veterinary medicine; public health concerns; responding agencies and their roles in control and eradication. Offered fall semesters.

EPID:5470 Applied Veterinary Epidemiology/Biostatistics  
3 s.h.  
Epidemiology and biostatistics applied to veterinary public health; outbreak investigations, surveillance, analyzing and evaluating diagnostic tests, translation methodology, risk assessment, data analysis software programs. Offered summer sessions. Prerequisites: EPID:4400 and BIOS:5110.

EPID:5500 Introduction to Clinical Epidemiology  
3 s.h.  
Epidemiologic applications and methods used in clinical settings to evaluate clinical medicine and other health profession disciplines, including health measurement, health outcome determination, diagnostic process, risk assessment and communication, prognosis, study design, patient surveys, clinical trials, decision analysis and meta-analysis, health services research. Offered fall semesters. Corequisites: EPID:4400 and BIOS:5110, if not taken as prerequisites.

EPID:5530 Surveillance Internship: IRCID  
2 s.h.  
Experience in the Iowa Registry for Congenital and Inherited Disorders; active, population-based surveillance for selected congenital and inherited disorders. Offered fall semesters of even years. Prerequisites: EPID:4400 and EPID:5600 and EPID:6400.

EPID:5540 Surveillance Mechanisms and Applications: Cancer and Other Registries  
2 s.h.  
Sources of data necessary for operation of a population-based cancer registry; potential uses of data; methods and personnel required for collecting, editing, storing, reporting, and assuring quality of data. Offered fall semesters. Prerequisites: EPID:4400.

EPID:5550 Diagnostic Microbiology for Epidemiology  
3 s.h.  
Introduction to microbiological culture, antigen detection, immunological and molecular amplification laboratory techniques for bacteria, viruses, parasites, fungi. Offered spring semesters. Prerequisites: MICR:2157 or MICR:3112 or MICR:3164 or MICR:8202.

EPID:5560 Introduction to Molecular Epidemiology  
3 s.h.  
Introduction to basic techniques of molecular biology (DNA, RNA, protein techniques) and their use in epidemiological research (e.g., diagnosis of disease, biomarker discovery and validation). Corequisites: EPID:4400, if not taken as a prerequisite.

EPID:5570 Zoonotic Diseases  
2-3 s.h.  
Introduction to the epidemiology and control of zoonotic diseases; zoonoses endemic to the midwestern United States. Offered summer sessions. Prerequisites: EPID:5550 or EPID:6550 or MICR:2157 or MICR:3112 or MICR:3164 or MICR:8202.

EPID:5580 Public Health Laboratory Techniques  
1 s.h.  
Common laboratory techniques in emerging infectious respiratory disease research and epidemiologic surveillance laboratories; emphasis on techniques for culturing, characterization, and serological surveillance of exposure to influenza viruses. Offered spring semesters. Requirements: completion of online Basic Biological Safety and Blood-Borne Pathogens courses; completed certificates must be brought to class.

EPID:5590 Applied Infectious Disease Epidemiology  
2 s.h.  
Introduction to infectious disease surveillance, outbreak investigations, interventions, biodefense, emerging infectious diseases, subject recruitment, mathematical modeling, and analytic approaches pertaining to infectious disease prevention and control; emphasis on practical knowledge and how to apply basic infectious disease epidemiology to real-life scenarios and research projects.

EPID:5600 Introduction to Epidemiology Data Management and Analysis  
3 s.h.  
Organization, collection, management, and analysis of epidemiological data using computer programs. Offered fall semesters. Corequisites: EPID:4400 and BIOS:5110, if not taken as prerequisites.
EPID:5610 Intermediate Epidemiology Data Analysis with SAS and R
Basic principles of data analysis and collaborative research; SAS fundamentals; data manipulation and interpretation techniques. Offered spring semesters.

EPID:5630 Seminar in Clinical and Translational Research
Presentation of ongoing clinical research projects, grant applications, and methodological articles, with emphasis on works in progress.

EPID:5900 Problems and Special Topics in Epidemiology
Didactic material in epidemiology; may include tutorial, seminar, faculty-directed independent work (e.g. literature search, project, short research project).

EPID:5925 Epidemiology Journal Club: Evaluating the Literature
Critical evaluation of primary epidemiologic methods and research papers; informative, challenging, and current topics from scientific literature. Requirements: epidemiology M.S., M.P.H., or Ph.D. standing.

EPID:5950 Preceptorship in Epidemiology
Quantitative research-oriented project performed with a preceptor; preparation of prospectus, presentation of research results in a publication-quality report and a scientific poster session.

EPID:6000 Independent Study in Epidemiology
In-depth pursuit of an area of special interest in epidemiology requiring substantial creativity and independence.

EPID:6050 Research in Epidemiology
Research that may lead to a dissertation.

EPID:6070 Social Epidemiology
Introduction with global focus and emphasis on methodological issues, including definition/measurement of social constructs, appropriate research designs, analytic approaches. Prerequisites: EPID:4400 and BIOS:5110.

EPID:6100 Writing a Research Protocol
Small group projects to develop research protocols using epidemiological study designs; presentation and defense of proposals before faculty site visitors. Offered fall semesters. Prerequisites: EPID:4400 and EPID:6400 and BIOS:5110 and BIOS:5120. Requirements: pass epidemiology Ph.D. qualifying exam, approval of research topic by dissertation advisor, and completion and approval of literature review by dissertation advisor prior to first day of class.

EPID:6110 Grant Writing for Clinical Investigators
Development of skills for writing effective, scientifically sound applications for external research grants; for students who have completed the literature review section for their topic. Prerequisites: EPID:4400 and BIOS:5110.

EPID:6150 Writing for Medical Journals
Skill development in writing medical journal articles for publication. Offered spring semesters.

EPID:6200 Environmental and Occupational Epidemiology
Overview of methods to interpret and perform environmental and occupational epidemiologic studies with focus on exposure assessment; valuable insights into identifying regional, national, global environmental, and occupational health-related issues. Prerequisites: EPID:4400. Same as OEH:6510.

EPID:6245 Epidemiology of Physical Activity
Physical activity/disease relationships examined through application of epidemiologic methods, including research design, interpretation of studies, selection of measures to fit research questions. Same as HHP:6210.

EPID:6250 Genetics and Epidemiology
Basic human genetic and population genetics principles; methods of integrating genetic principles into epidemiological studies; analytical methods for case control and family data. Offered fall semesters. Prerequisites: EPID:4400 and BIOS:5110.

EPID:6330 Global Nutrition Policy
Concepts and methods used in setting public health nutrition policy; evidence-based aspects of nutrition policy formation in public health settings; evaluation of nutritional public health policy implementation and ways of changing policy in China, Korea, Micronesia, Hawaii, Italy, and the United States. Offered spring semesters.

EPID:6350 Nutritional Epidemiology
Application of epidemiology study designs to nutrition variables and chronic disease; analysis of nutrition epidemiology studies; research protocol design. Offered spring semesters. Recommendations: a basic nutrition course.

EPID:6360 Nutrition Intervention in Clinical Trials Research
Nutrition interventions in clinical trials; disease related to nutrition variables; research that links effects of diet on chronic diseases. Offered fall semesters. Recommendations: a basic nutrition course.

EPID:6370 Nutrition Intervention in Research Lab
Development, demonstration of group counseling skills in ongoing nutrition research projects at the University of Iowa. Offered fall semesters. Corequisites: EPID:6360, if not taken as a prerequisite.

EPID:6400 Epidemiology II: Advanced Methods
Epidemiologic study design and analysis; bias, confounding, effect modification; case-control studies; cohort studies; field methods; measurement principles; exposure and disease classification; acute and chronic disease examples. Offered spring semesters. Prerequisites: EPID:4400 and EPID:5600 and BIOS:5110.
EPID:6510 Injury Epidemiology 3 s.h.
How epidemiology can be applied to injury prevention and control: epidemiology literature, specific methodological problems involved in the epidemiology of injuries, critical evaluation of research articles. Offered spring semesters of odd years. Prerequisites: EPID:4400. Same as OEH:6520.

EPID:6530 Epidemiology of Occupational Injuries 3-4 s.h.
Epidemiological literature on occupational injuries and their prevention; focus on research methods. Offered spring semesters of even years. Prerequisites: EPID:4400. Same as OEH:6530.

EPID:6550 Epidemiology of Infectious Diseases 3 s.h.
Underlying epidemiological concepts of infection disease, including causation and surveillance; prevention and control; case studies. Offered fall semesters. Prerequisites: EPID:4400. Same as GHS:6550.

EPID:6560 Hospital Epidemiology 2 s.h.
Health care-associated infections; surveillance, investigative methods, resistant organisms, molecular epidemiology; methods for preventing spread of pathogens, including isolation precautions; environmental issues, construction, sterilization; interactive exercises. Offered spring semesters of odd years. Prerequisites: EPID:4400.

EPID:6570 Infectious Causes of Chronic Disease 3 s.h.
Evidence linking various infectious agents with the development of different types of chronic disease. Offered even years. Corequisites: EPID:4400, if not taken as a prerequisite.

EPID:6600 Epidemiology of Chronic Diseases 3 s.h.
Chronic disease epidemiology; survey of leading chronic diseases, including measurement of disease, lifestyle, nutrition, occupation, family history. Offered spring semesters. Prerequisites: EPID:4400.

EPID:6620 Neuroepidemiology 2 s.h.
Basic epidemiologic concepts of neurologic disease; concepts, methods, examples of neuroepidemiology; varied diseases, methods. Prerequisites: EPID:4400 and EPID:5600.

EPID:6630 Epidemiology of Reproductive Diseases 2 s.h.
Evaluation of methodological issues and current findings for reproductive diseases and conditions; etiological mechanisms, including behavioral and genetic. Offered fall semesters of odd years.

EPID:6640 Epidemiology of Maternal and Infant Health 2 s.h.
Overview of maternal and infant epidemiologic and methodologic issues; prevalence and trends; risk factors; data sources, including limitations and availability; relevant measurement issues; directions for future research. Offered spring semesters of odd years. Prerequisites: EPID:4400 and BIOS:5110.

EPID:6650 Cardiovascular Disease Epidemiology 3 s.h.
Natural history of atherosclerotic disease in humans and risk factors affecting its development; atherosclerotic disease by age, sex, and in varied populations worldwide; recent guidelines and clinical trials to delay onset, reduce incidence, improve outcome of cardiovascular disease. Offered fall semesters of odd years. Prerequisites: EPID:4400 and BIOS:5110.

EPID:6670 Psychiatric Epidemiology 3 s.h.
Population-based studies of psychiatric disorders and associated etiologic tools; diagnostic criteria used in psychiatric research, common structured interviews and rating scales; recent research relevant to common psychiatric disorders; experience writing a research idea using NIH PHS grant form. Offered spring semesters of even years. Prerequisites: EPID:4400. Recommendations: EPID:6400 or two years of resident training in psychiatry. Same as PSYC:8267.

EPID:6700 Cancer Epidemiology and Control 3 s.h.
Incidence, mortality, survival; risk factors for major cancer sites; comprehensive cancer control; introduction to SEER*Stat and its application. Offered spring semesters of even years. Prerequisites: EPID:4400 and BIOS:5110 and PATH:8133.

EPID:6900 Design of Intervention and Clinical Trials 3 s.h.
Methodologic introduction to rationale and design of clinical trials; basics of clinical trial design, variety of designs, and examples from clinical trials. Offered fall semesters. Prerequisites: EPID:4400 and BIOS:5110.

EPID:6910 Pharmacoepidemiology 3 s.h.
Drug approval process, methods for identification and attribution of adverse drug events, current understanding of the epidemiology of adverse drug events; study designs, data sources for pharmacoepidemiology, pharmacoconomics. Offered fall semesters of even years. Prerequisites: EPID:4400.

EPID:6950 Clinical Research Ethics 2-3 s.h.
Ethical and regulatory aspects of clinical research; historical background, current regulations, Institutional Review Board requirements related to human subjects protection issues. Requirements: K30 training grant or enrollment in degree program with clinical research project.


EPID:7200 Teaching in Epidemiology 3 s.h.
Teaching methods in epidemiology; guided practicum experience in teaching epidemiology, in preparation for academic careers. Prerequisites: EPID:4400 and EPID:5600 and EPID:6400.

EPID:7400 Epidemiology III: Theories 3 s.h.
How epidemiology fits into the wider context of scientific inquiry. Offered fall semesters of odd years. Prerequisites: EPID:4400 and EPID:6400 and BIOS:6110.
Health Management and Policy

Head
- Keith J. Mueller

Graduate degrees: M.H.A.; M.S. in health policy; Ph.D. in health services and policy
Faculty: http://www.public-health.uiowa.edu/hmp-faculty-list/
Web site: http://www.public-health.uiowa.edu/hmp/

The Department of Health Management and Policy educates health care professionals for leadership roles in an increasingly complex and dynamic health care system. Graduates hold key executive, academic, research, government, and consulting positions in all areas of health management and policy, both in the United States and abroad.

Graduate Programs of Study
- Master of Health Administration
- Master of Science in health policy
- Doctor of Philosophy in health services and policy

The department offers the M.H.A. in a traditional program and an executive program. It also offers joint M.H.A./graduate and professional degree programs with the Tippie College of Business, the College of Law, and the Graduate College’s School of Urban and Regional Planning. In addition, the M.S. in health policy and the policy subprogram for the Master of Public Health (M.P.H.) are offered.

The department’s degree programs rank among the foremost in the field. The M.H.A. is accredited by the Commission on Accreditation of Healthcare Management Education. The Ph.D. program, established in 1950, was the nation’s first doctoral program in health care management.

Master of Health Administration

The Master of Health Administration requires 60 s.h. of graduate credit earned in two academic years of full-time study. The program prepares students for a wide variety of positions in health care management. It is designed to provide a comprehensive understanding of issues encountered by health care delivery organizations, and strong business skills. Graduates are well prepared to advance to senior executive roles in a variety of health care organizations.

Students work with their advisors to create a plan of study that incorporates required and elective course work that supports their career goals in areas such as operations management, managed care, or financial management. Required courses in management, economics, law, managerial finance, and financial accounting focus on health care applications. Students also may take course work in other University of Iowa departments and programs, such as business, urban and regional planning, and aging studies.

During the first year, students are introduced to the social, political, economic, and financial environments of health care organizations. The concepts, tools, and techniques necessary for effective management also are presented. During the second year, courses focus on in-depth health care applications of management concepts that integrate prior course work and develop skills in areas relating to students’ special interests and career objectives.

Transfer credit and course waivers may be accepted, but all students are expected to complete a minimum of 54 s.h. at the University of Iowa during their course of study.

The Master of Health Administration requires the following course work.

CORE COURSES

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HMP:5000</td>
<td>Professional Development Seminar</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>HMP:5005</td>
<td>Introduction to Health Care Organization</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>HMP:5200</td>
<td>Health Care Management</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>HMP:5291</td>
<td>Lean Sigma Principles: Applications in Health Care</td>
<td>1 s.h.</td>
</tr>
<tr>
<td>HMP:5310</td>
<td>Quantitative Management in Health Care</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>HMP:5315</td>
<td>Health Services Information Systems</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>HMP:5320</td>
<td>Analytics for Health Care Management</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>HMP:5410</td>
<td>Health Economics I</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>HMP:5610</td>
<td>Health Policy</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>HMP:6055</td>
<td>Topics in Health Administration</td>
<td>1-3 s.h.</td>
</tr>
<tr>
<td>HMP:6110</td>
<td>Strategic Planning and Marketing</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>HMP:6150</td>
<td>Issues in Health Management and Policy</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>HMP:6310</td>
<td>Human Resources for Health Organizations</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>HMP:6315</td>
<td>Seminar in Health Care Ethics</td>
<td>1 s.h.</td>
</tr>
<tr>
<td>HMP:6410</td>
<td>Financial Management of Health Institutions</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>HMP:6610</td>
<td>Legal Aspects of Health and Medical Care</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>MBA:8140</td>
<td>Corporate Financial Reporting</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>MBA:8180</td>
<td>Managerial Finance</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>MPH:6100</td>
<td>Essentials of Public Health</td>
<td>1 s.h.</td>
</tr>
</tbody>
</table>

ELECTIVES

Students choose 13 s.h. of elective course work; they may count a maximum of 6 s.h. of elective credit earned outside the Department of Health Management and Policy toward the M.H.A. degree.

SUMMER INTERNSHIPS, FELLOWSHIPS, RESIDENCIES

The department facilitates placement of M.H.A. students in required summer internships between the first and second years of study. Internships offer opportunities for practical experience interacting with executives in a health care setting. Internships are full-time positions that usually last 10-12 weeks and may carry up to 3 s.h. of credit. Students normally receive a salary or stipend, and in some cases, assistance with living arrangements.

Most M.H.A. students complement their academic training with a postgraduate fellowship or residency. Such experiences provide opportunities to observe, develop, and demonstrate management skills and to develop
connections with colleagues. The department takes an active role in helping students identify and secure fellowship and residency positions.

**Executive M.H.A.**

The Executive Master of Health Administration program requires 45 s.h. of graduate credit and typically is completed in two years. The program is designed for working professionals who wish to advance their knowledge and skills in order to become effective health care administrators. The program's objectives are to:

- provide working professionals with advanced knowledge and skills in health care management;
- position experienced professionals to become effective health care administrators; and
- meet the need for leadership in transforming health care financing and delivery in dynamic environments.

The program's curricular emphases are basic administrative skills, administrative skills specific to health care, population health administration, and interprofessional health care administration.

Students in the program complete three courses each fall and spring semester and one course in each of two summer sessions. Courses are taught on campus by experienced faculty members and are supplemented with online resources. Instruction focuses on cases and teams.

For more information, visit EMHA Curriculum on the College of Public Health web site and contact the Department of Health Management and Policy.

**Joint Degrees**

The Department of Health Management and Policy offers joint degree programs with the Tippie College of Business, the College of Law, and the Graduate College's School of Urban and Regional Planning. Students interested in combining an M.H.A. with a master's or professional degree in another field should discuss their plans with both academic units and indicate their interest when they apply to the M.H.A. program.

**Joint M.H.A./M.B.A.**

The joint Master of Health Administration/Master of Business Administration requires a minimum of 75 s.h. of graduate credit. The program combines the traditional strengths of health management and policy with additional course work in management. Separate application to each degree program is required; applicants must be admitted to both programs before they may be admitted to the joint degree program. For information about the M.B.A., see Master of Business Administration Program (p. 696) (Tippie College of Business) in the Catalog.

**Joint M.H.A./J.D.**

The joint Master of Health Administration/Juris Doctor requires 123 s.h. of postbaccalaureate credit. The program is highly individualized, allowing students to gain training in both health care management and law. Students usually complete the program in four years; they enroll only in law courses during the first year. Separate application to each degree program is required; applicants must be admitted to both programs before they may be admitted to the joint degree program. For information about the J.D., see College of Law (p. 969) in the Catalog.

**Joint M.H.A./M.A. or M.S. in Urban and Regional Planning**

The joint Master of Health Administration/Master of Arts or Master of Science in urban and regional planning requires a minimum of 76 s.h. of graduate credit. The program gives students the opportunity to acquire expertise in community and health planning and prepares them to develop public policy alternatives that help improve the quality of life in cities and throughout regions. Students usually complete the program in three years. Separate application to each degree program is required; applicants must be admitted to both programs before they may be admitted to the joint degree program. For information about the graduate programs in planning, see Urban and Regional Planning (p. 963) (Graduate College) in the Catalog.

**Master of Science**

The Master of Science in health policy requires 48 s.h. of graduate credit. Students learn how to quickly identify, evaluate, and formulate policies, and conduct quantitative and qualitative health policy research. These skills are developed through a combination of course work and applied learning opportunities, including special lectures and conferences. Students who complete the M.S. in health policy will have acquired the subject matter expertise and methodological skills sought by academic institutions, government agencies, and private and nonprofit organizations engaged in health policy analysis, development, and implementation. Additionally, students will be prepared to pursue doctoral studies in health policy, health services research, and other closely related fields.

The Master of Science in health policy requires the following course work.

**CORE COURSES**

- **HMP:5005** Introduction to Health Care Organization and Policy 3 s.h.
- **HMP:5410** Health Economics I 3 s.h.
- **HMP:5610** Health Policy 3 s.h.
- **HMP:5611** Contemporary Issues in Health Policy 1 s.h.
- **HMP:5650** Health Policy Analysis 3 s.h.
- **HMP:6610** Legal Aspects of Health and Medical Care 3 s.h.
- **HMP:6710** Federalism and Health Policy 3 s.h.
- **HMP:6750** Seminar in Health Policy 3 s.h.
- **HMP:7550** Cost Effectiveness and Decision Analysis 3 s.h.
- **HMP:7950** Design Issues in Health Service Research 3 s.h.
- **BIOS:5110** Introduction to Biostatistics 3 s.h.
- **BIOS:5120** Design and Analysis of Biomedical Research 3 s.h.
- **EPID:4400** Epidemiology I: Principles of Disease Analysis 3 s.h.
- **MPH:6100** Essentials of Public Health 1 s.h.

**ELECTIVES**

Students choose 7 s.h. of elective course work.
Thesis
Students complete 3 s.h. of thesis work in addition to the required courses.

M.P.H. Subprogram

The Department of Health Management and Policy offers the policy subprogram for the Master of Public Health. The subprogram prepares individuals for careers in health policy analysis, system and organizational planning, and program evaluation. Graduates find positions in federal, state, and local government as well as in professional associations and private agencies. See Master of Public Health Program (p. 1173) in the Catalog.

Doctor of Philosophy

The Doctor of Philosophy program in health services and policy requires a minimum of 77 s.h. of graduate credit, which may include up to 30 s.h. of credit from a master's degree. The program prepares students for careers in health services research, education, and policy leadership in universities, government agencies, and health organizations.

The Ph.D. program is oriented toward applied, interdisciplinary research and scholarly inquiry. Students develop mastery of theories and research methodologies necessary to study the complex American health system. They work closely with faculty mentors on research projects and develop research design and methodology skills through course work and an apprenticeship model of training.

Individual plans of study allow students to prepare for specific careers, and small class size encourages frequent student-faculty interaction, including participation in research projects as well as scholarly publications.

Prospective Ph.D. students apply to one of three focus areas: health economics, health management and organization, or health policy. Admitted students may not change focus areas unless they are formally reviewed and accepted to the new area. Students work with a faculty advisor and a mentorship team of faculty members from their focus area; the advisor and mentorship team participate in initial planning with a student during orientation and in annual professional development reviews. Students conduct required independent study and thesis research in their focus area; their comprehensive exam and dissertation committees include faculty members from their focus area.

Focus Areas

The health economics focus area provides students with in-depth training in economic theory and its applications to health and health care. Students in this area acquire advanced theoretical knowledge and state-of-the-art analytical and econometric skills that enable them to build careers as health economists in academic departments, research organizations, and health care industries. The health economics focus area provides comprehensive course work covering all main areas in health and health care economics, including demand for health and health care, economic determinants and consequences of health behaviors, health insurance, economic organization of health care markets, impact of government policy and regulation, econometric methods, and economic evaluation methods.

The health management and organization focus area prepares students to conduct research on organizational, strategic, and operational issues that confront health institutions and systems. Emphasis is placed on health care applications of theories, concepts, and models from the fields of organizational theory (macro), organizational behavior (micro), strategic management, and operations management. Students in this area may conduct research on topics such as effectiveness of health care organizations; improving the organization and management of health delivery processes; measuring performance and productivity of health care organizations; examining the relative influence of mission, culture, and financial incentives in hospitals and health organizations; and management of professional groups. Graduates of the health management and organization focus area should find employment in academic and research organizations, integrated delivery systems, and governmental units that are interested in the impact of organizational structures and managerial practices on performance.

The health policy focus area prepares students to undertake health services and policy research aimed at improving care and management of illness and disability and enhancing individual and community health outcomes. Students develop the skills necessary to conduct health services and policy research. They take courses in the basic disciplines that contribute to the fields of public and social policy (e.g., law, political science, public affairs) as well as courses that focus on the structure and organization of health policy making in the United States. They study the formation and implementation of health policies; the effect of health policies on the organization, financing, and delivery of health services; the effect of health policies on access to, use of, and costs of health services; and approaches to improve access and effectiveness of care for vulnerable populations. Students who complete the health policy focus area are prepared for employment in academic and research institutions, policy organizations, and governmental agencies and departments.

Course Work

Ph.D. students take course work in core content areas covering health care systems, health economics, health management and organizations, and health policy as well as courses in research design and statistical analysis. Credit may be awarded for guided and independent research project work. Students may waive specific courses, depending on their background. For more detailed information about Ph.D. and focus area curricula, visit Ph.D. in Health Services and Policy on the Department of Health Management and Policy web site.

Examinations

All Ph.D. students must pass a preliminary examination that tests a student’s mastery of core material covered during the first year in the department, including American health systems, health services research methods, and foundation courses in their focus area.

Students take the comprehensive examination at or near the end of their formal course work. The comprehensive exam focuses on a student’s specific area of research and theoretical interest.

Dissertation

Doctoral candidates prepare dissertations based on original research that tests, extends, or applies concepts.
or principles to a health care problem related to their chosen focus area. Students may complete a traditional dissertation or a dissertation based on three publishable papers.

**Admission**

Applicants to the M.H.A. program must apply through the Schools of Public Health Application Service (SOPHAS) or the Healthcare Administration, Management & Policy Centralized Application Service (HAMPCAS). Applicants to the Executive M.H.A., M.S., and Ph.D. programs must apply through SOPHAS. All applicants also must apply for admission to the Graduate College through the University of Iowa Office of Admissions. For detailed application information, visit HMP Degree Programs page on the Department of Health Management and Policy web site.

Ph.D. applicants must apply to one of the program's three focus areas: health economics, health management and organization, or health policy. Applicants are reviewed by the admissions committee; if they meet department expectations, they are reviewed by focus area faculty; if they are accepted by the focus area, they are interviewed by the admissions committee and the focus area faculty. Admission decisions are made after the interview.

Applicants to the M.H.A. program must hold a bachelor's degree from an accredited institution. No specific undergraduate major is required, but prospective applicants are strongly advised to complete introductory courses in accounting, economics, and statistics and to gain facility in using spreadsheet and presentation software. Applicants must have a cumulative g.p.a. of at least 3.00. Preference is given to applicants with a verbal score of at least 151 and a quantitative score of at least 151 on the revised Graduate Record Examination (GRE) General Test (or a verbal score of at least 470 and a quantitative score of at least 640 on the old GRE). Applicants who have taken the GMAT (preferred score of at least 600), the MCAT, or the LSAT may submit their scores on those tests instead of GRE scores. Relevant work and volunteer experience are considered.

Applicants to the Ph.D. program must have a bachelor's or master's degree. Health care and research experience is desirable. A master's degree in health administration, public health, policy analysis, social science, management, economics, or law is considered excellent preparation for the program. Applicants should have a cumulative g.p.a. of at least 3.25 and should score above the 50th percentile on the Graduate Record Examination (GRE) General Test. Applicants whose first language is not English and who do not hold a bachelor's or more advanced degree from an accredited institution in the United States, Canada (except Quebec), Australia, New Zealand, or the United Kingdom or who are not permanent residents of the United States must score at least 100 (Internet-based) on the Test of English as a Foreign Language (TOEFL). Applicants who score 81-99 (Internet-based) are required to take English fluency courses. Applicants who score below 81 are not considered for admission.

Applicants must meet the admission requirements of the Graduate College; see the Manual of Rules and Regulations of the Graduate College.

Students begin the program in fall semester. Campus visits are encouraged, and personal interviews are required before admission. The admissions committee conducts telephone interviews with applicants unable to interview on campus.

**Financial Support**

A variety of financial assistance is available, including scholarships and awards, student loans, and research assistantships. Every effort is made to provide financial support to students who demonstrate need and maintain satisfactory academic standards. Some awards are offered in recognition of outstanding academic performance and experience, regardless of need.

Research assistantships generally are awarded on the basis of student merit and the department's need. Assistantships afford valuable experience in health services research and management projects. Research assistants work 10-20 hours per week and must apply for reappointment each year. Research assistantships provide a stipend and some tuition assistance and entitle students to resident tuition.

Opportunities also exist for part-time employment both on and off campus. For information and financial aid application forms, contact the University's Office of Student Financial Aid.

**Resources**

The Center for Health Policy and Research, the research arm of the Department of Health Management and Policy, is a University-wide interdisciplinary research facility. Faculty members from the Carver College of Medicine, the Tippie College of Business, and the Colleges of Dentistry, Liberal Arts and Sciences, Nursing, Pharmacy, and Public Health serve as investigators in a variety of studies at the center. Graduate students assist with ongoing research projects.

Primary project funding for the center comes from the National Institutes of Health, the State of Iowa, the Agency for Healthcare Research and Quality, and the Patient Centered Outcomes Research Initiative, as well as from foundations and private organizations.

The center also sponsors educational activities and promotes collaboration among health organizations through frequent exchanges with professional and provider associations, policy and planning groups, insurance organizations, health delivery institutions, and other members of the health services research community.

**Alumni Relations**

An active alumni association with more than 1,000 members supports the program in a number of ways including scholarships, consultation on curriculum, continuing education, research, and fund development. Alumni serve as visiting faculty, consultants, mentors, and preceptors for summer internships, residencies, and fellowships. The alumni association also provides a network for graduates entering the profession.

Graduates maintain their Iowa connection and learn about news of their classmates, the department, and faculty members and students through the web site and social media.

The Department of Health Management and Policy and its alumni association jointly sponsor the annual Iowa Healthcare Executive Symposium each fall. Renowned
speakers from across the country present a variety of symposium topics. Health care leaders, alumni, educators, students, and friends of the department attend the symposium, which offers students a high quality educational experience in addition to the opportunity to network with faculty and alumni.

Courses

**HMP:4000 Introduction to the U.S. Health Care System**
3 s.h.
The U.S. health care system; socioeconomic, political, and environmental forces that influence the organization, financing, and delivery of personal and public health services; health services, policy, concepts, terminology.

**HMP:5000 Professional Development Seminar**
0-1 s.h.
Development of critical foundational management skills: business writing, personal presentation, teamwork, providing feedback, self-assessment, engaging other professionals, and organizational ethics.

**HMP:5001 Interprofessional Health Care Administration I**
3 s.h.
Concepts and methods related to developing and leading interprofessional teams; emphasis on roles and responsibilities in health care teams, communication, and conflict management; team development.

**HMP:5005 Introduction to Health Care Organization and Policy**
3 s.h.
Organization of U.S. health care system, health policies that shape its development; historical, socioeconomic, political, environmental forces that influence the organization, financing, and delivery of personal and public health services; health services, policy concepts, and terminology, including health determinants, access to care, system integration, policy development, federalism.

**HMP:5200 Health Care Management**
3 s.h.
Application of basic management principles such as leadership, goal setting, decision making, human resource management, to health care organizations.

**HMP:5230 Managerial Epidemiology**
1 s.h.
Relationship between health care needs and utilization; emphasis on epidemiological concepts related to presence of disease and health care needs in a community; approaches to forecasting need and utilization of services.

**HMP:5291 Lean Sigma Principles: Applications in Health Care**
1,3 s.h.
General lean and six sigma principles; application to health care solutions; examples from University of Iowa Hospitals and Clinics, other institutions.

**HMP:5310 Quantitative Management in Health Care**
2-3 s.h.
Fundamentals of patient safety, quality improvement techniques, performance measurement approaches, and analytical tools including data collection methodologies used by managers in health care and public health settings.

**HMP:5315 Health Services Information Systems**
2-3 s.h.
Conceptual, practical aspects of analysis, development, and use of computer-based information systems; emphasis on application to the health sciences environment.

**HMP:5320 Analytics for Health Care Management**
3 s.h.
Introduction to analytical techniques for making business decisions with emphasis on health care; using Excel and associated tools in practical problem solving; probability and statistical concepts and applications in strategic settings.

**HMP:5342 Operations Research for Health Services Managers**
2-3 s.h.
Functions and issues associated with health care management decision making using quantitative analysis and methodology; emphasis on operations research techniques (i.e., linear programming); resource management and optimization issues.

**HMP:5350 Hospital Organization and Management**
2-3 s.h.
Role of hospitals, governance, organizational structure, medical staff organization, departmental operations. Prerequisites: HMP:5005 and HMP:5200.

**HMP:5370 Health Informatics I**
3 s.h.
Technological tools that support health care administration, management, and decision making. Requirements: graduate standing. Same as MED:5300, SLIS:5900, RSNM:3195, IE:5860, IGPI:5200.

**HMP:5402 Corporate Financial Reporting**
arr.
Introduction to accounting concepts, principles, and analyses; contemporary financial reporting practices with emphasis on preparation, analysis, and use of financial statement information for management decisions; fundamentals of accounting measurement and disclosure.

**HMP:5410 Health Economics I**
3 s.h.
Microeconomic principles applied to health care, health insurance, information and uncertainty, models of physician and hospital behavior, theory of the firm, market structure, regulation, competitive reform, managed care.

**HMP:5450 Health Insurance and Managed Care**
3 s.h.
History and theory of insurance, comparative health systems, health systems and networks, HMOs, public health insurance, care for uninsured; emphasis on public policy. Prerequisites: HMP:5005. Corequisites: PHAR:6330 or HMP:5410. Same as GHS:5455.

**HMP:5610 Health Policy**
1-3 s.h.
Policy process, policies and programs that shape provision of health care in the United States; health policies such as Medicare, Medicaid, Older Americans Act.

**HMP:5611 Contemporary Issues in Health Policy**
0-1 s.h.
Current content, ethical perspectives, empirical research, and professional development in health policy; evaluation of health policy issues from a variety of theoretical perspectives; students assist with identification and recruitment of individual experts. Prerequisites: HMP:5610 and HMP:5650.

**HMP:5650 Health Policy Analysis** 3 s.h.
Introduction to analysis of contemporary health policy issues; frameworks for conducting analysis of health policy process and content; qualitative and quantitative methods for policy analysis; how to present policy-relevant information effectively. Prerequisites: HMP:5005 and HMP:5610.

**HMP:5750 Medicare and Medicaid Policy** 3 s.h.
Health policies most pertinent to Americans over age of 65. Same as ASP:5750.

**HMP:5810 Administrative Internship** arr.

**HMP:6055 Topics in Health Administration** 1-3 s.h.
Topics related to contemporary problems that concern health care students, administrators.

**HMP:6110 Strategic Planning and Marketing** 3-4 s.h.
Strategy in health care including role of mission, vision, values, environmental analysis, strategic alternatives, organizational design, and evaluation of strategic decisions. Prerequisites: HMP:5200.

**HMP:6150 Issues in Health Management and Policy** 3 s.h.
Integration and application of theories, concepts, principles; case studies. Prerequisites: HMP:5200 and HMP:6110.

**HMP:6255 History and Health Policy in the U.S.** arr.
Books, articles, other readings on history of the medical and nursing professions, evolution of the hospital and other key sectors of the health economy; health policy issues and their implications.

**HMP:6310 Human Resources for Health Organizations** 2-3 s.h.
Overview of human resource management theories and practices for health care organizations; strategic human resource management, equal employment, staffing, training and development, appraisal, compensation. Prerequisites: HMP:5200.

**HMP:6315 Seminar in Health Care Ethics** 1-2 s.h.
Biomedical and organization ethics in the contemporary health care environment; ethical concepts and principles, ethical issues that confront executive, clinical, and governance leaders in context of complex health organizations.

**HMP:6350 Medical Practice Administration** 3 s.h.
Survey of medical practice culture, operations, governance, financials, role(s) in health care system, and future. Prerequisites: HMP:5005 and HMP:5200.

**HMP:6355 Leadership in Healthcare Organizations** 2-3 s.h.
Management and leadership concepts and their application in health care organizations. Prerequisites: HMP:5200.

**HMP:6360 Nonprofit Organizational Effectiveness I** 3 s.h.

**HMP:6365 Nonprofit Organizational Effectiveness II** 3 s.h.
Qualities for leadership of nonprofit organizations, including relationships with staff and volunteers; relationship of nonprofit and outside world; marketing, public relations, advocacy strategies for nonprofits.

**HMP:6410 Financial Management of Health Institutions** 3 s.h.
Issues in working capital management, capital financing, cost analysis and rate setting, budgeting, reimbursement, managed care contracting and health reform initiatives; emphasis on use of information from accounting, financial management systems.

**HMP:6610 Legal Aspects of Health and Medical Care** 3 s.h.
Statutory, common law frameworks applicable to health care system; court decisions that illustrate applications of general legal doctrines in hospital, health settings.

**HMP:6710 Federalism and Health Policy** 3 s.h.
How American government’s organization shapes development and implementation of health policy, programs, services.

**HMP:6750 Seminar in Health Policy** 2-3 s.h.
Contemporary health policy issues; theoretical and applied perspectives; social justice and health care for vulnerable populations (e.g., mental health, nursing homes); readings, discussion. Prerequisites: HMP:5610.

**HMP:6850 Independent Study and Research** arr.
Supervised tutorial.

**HMP:6855 Administrative Practicum** 2-3 s.h.
Experience with operational and planning matters in a health care setting. Requirements: second-year standing and g.p.a. of at least 3.00 for two consecutive semesters.

**HMP:6860 Administrative Residency/Fellowship** arr.

**HMP:7250 Organizational Behavior and Theory in Health Care** 3 s.h.
Key concepts of organizational behavior and organizational theory and their application to health care organizations and health services; perspectives from theoretical writings and empirical studies. Requirements: Ph.D. standing and knowledge of human services organizations.

**HMP:7550 Cost Effectiveness and Decision Analysis**
3 s.h.
Methods of cost-effectiveness analysis and decision analysis; applications to resource allocation decisions in public health and medicine.

**HMP:7910 Seminar in Contemporary Health Issues**
0 s.h.
Review of relevant literature on methodological substantive issues in health care, presentations by researchers on health services and policy research.

**HMP:7920 Ph.D. Guided Research**
1-3 s.h.
Experience with empirical research, guided by a faculty mentor; structured and supervised research activities.

**HMP:7930 Ph.D. Independent Research**
1-3 s.h.
Experience in empirical research through one or more substantive research experiences, with faculty mentor; authorship or coauthorship of at least one manuscript suitable for publication in peer review journal. Requirements: Ph.D. in health services and policy and satisfactory completion of Ph.D. preliminary exams.

**HMP:7940 Primary Data and Mixed Methods**
3 s.h.
Overview of research design and methods used to address health services research questions; collection of primary data and use of qualitative and mixed methods approaches.

**HMP:7950 Design Issues in Health Service Research**
3 s.h.
Design and causal inference reliability and validity in measurement; rules of evidence; research design for randomized-control trials, observational studies, meta-analysis.

**HMP:7960 Analytic Issues in Health Services Research I**
3 s.h.
Analytic tools used in health services research; focus on applications in nonexperimental research settings, such as analyses using administrative claims data or preexisting public use data sets. Prerequisites: BIOS:5120. Same as PHAR:7330.

**HMP:7965 Analytic Issues in Health Services Research II**
3 s.h.
Continuation of HMP:7960; advanced applications, including panel data and qualitative response models. Prerequisites: HMP:7960. Same as PHAR:7331.

**HMP:7970 Seminar in Health Research and Instruction**
1-3 s.h.
Opportunity for Ph.D. students to develop research and teaching skills through presentations, readings, workshops. Requirements: satisfactory completion of Ph.D. preliminary exams.

**HMP:7990 Thesis/Dissertation**
arr.
Research for preparation of dissertation; seminar presentation.
Master of Public Health
Program

Director
• Tanya M. Uden-Holman

Graduate degree: M.P.H.
Web site: http://www.public-health.uiowa.edu/mph/

The Master of Public Health is recognized as the primary professional degree in public health. The objective of Iowa's M.P.H. program is to provide education and practical training in public health to students who will be leaders in their respective communities. The program is appropriate for individuals who already have professional experience and/or training in public health as well as for those whose expertise lies outside of public health.

The Master of Public Health program is offered by the College of Public Health; the degree is awarded by the Graduate College.

Graduate Program of Study
• Master of Public Health

Students may earn the M.P.H. as a single degree, or they may pursue one of several joint degree programs. The College of Public Health offers joint M.P.H./professional degree programs with the Carver College of Medicine and the Colleges of Law and Pharmacy. It also offers programs in collaboration with the College of Veterinary Science at Iowa State University. See "M.P.H. for Practicing Veterinarians" and descriptions of the joint degree programs later in this section.

In addition, the college collaborates with the College of Liberal Arts and Sciences to offer joint B.A. or B.S./M.P.H. programs for undergraduate students majoring in biology, psychology, or statistics; see "Joint B.A. or B.S./M.P.H. Degrees" below.

Master of Public Health

The Master of Public Health requires 42-45 s.h. of graduate credit, depending on the student’s choice of specialization. Students must choose one of seven subprograms: community and behavioral health, epidemiology, ergonomics, health communication, occupational and environmental health, policy, or quantitative methods.

Degree requirements include a core course in public health practice and in each of the five core disciplines of public health (epidemiology, biostatistics, environmental health, health policy and management, and social and behavioral sciences); a practicum; a set of content-specific required courses; and a set of content-specific electives. Students in the epidemiology subprogram and the occupational and environmental health subprogram also must complete a bioscience course. A final written report with oral presentation or a poster presentation related to the practicum constitutes the final examination.

All M.P.H. students complete the course work listed under "Common Requirements." In addition, each student completes the course work listed for his or her chosen subprogram.

Common Requirements

The following course work is required for all M.P.H. students. Students must earn a B-minus or higher in each core course. Students may repeat courses to achieve this standard.

CORE COURSES

All of these (18 s.h.):
• MPH:4101 Introduction to Public Health 3 s.h.
• BIOS:5110 Introduction to Biostatistics 3 s.h.
• CBH:4105 Introduction to Health Promotion and Disease Prevention 3 s.h.
• EPID:4400 Epidemiology I: Principles 3 s.h.
• HMP:4000 Introduction to the U.S. Health Care System 3 s.h.
• OEH:4240 Global Environmental Health 3 s.h.

PRACTICUM

The practicum is a fieldwork experience in which students show proficiency in applying academic principles in community settings. There are many practicum opportunities for M.P.H. students locally, nationally, and internationally. The practicum is the capstone of the M.P.H. program.

Before they register for and begin the practicum, students must choose an approved topic and must complete most of their M.P.H. course work, including all of the six M.P.H. core courses. A final written report with an oral presentation or a poster presentation is required. The practicum constitutes the final examination for the M.P.H. degree.

• MPH:7000 M.P.H. Practicum Experience 3 s.h.

Community and Behavioral Health Subprogram

The Master of Public Health with community and behavioral health subprogram requires 42 s.h. of graduate credit. The subprogram is offered by the Department of Community and Behavioral Health (p. 1152) (College of Public Health).

The subprogram prepares public health practitioners for a variety of positions related to community development, health program implementation, and health education. Students learn how to design, implement, and evaluate evidence-based interventions directed toward identified public health problems in populations.

A bachelor’s degree in the social and behavioral sciences is good preparation for this program, but students come from a variety of educational backgrounds. Preference is given to applicants who have professional experience.

In addition to the M.P.H. course work listed under “Common Requirements” above, the community and behavioral health subprogram requires the following courses.

SUBPROGRAM CORE

Students earn 12 s.h. in the required subprogram core. Theory—this course:
CBH:5220 Health Behavior and Health Education 3 s.h.

Community and society—one of these:

CBH:5205 Social Determinants of Health 3 s.h.
CBH:5235 Community-Based Participatory Research 3 s.h.

Intervention—one of these:

CBH:6205 Designing and Implementing Interventions 3 s.h.
CBH:6220 Health Communication Campaigns 3 s.h.

Methods—one of these:

CBH:5305 Evaluation I: Approaches and Applications 3 s.h.
CBH:5310 Qualitative Research for Public Health 3 s.h.
CBH:5420 Communicating with the Community 3 s.h.
CBH:6335 Research Methods in Community and Behavioral Health 3 s.h.

ELECTIVES

At least 9 s.h. chosen from these:

ANTH:6141 Medical Anthropology and Social Theory 3 s.h.
CBH:3150 Media and Health 3 s.h.
CBH:5140 The Anthropology of Women's Health 3 s.h.
CBH:5215 Community Preventive Programs and Services 3 s.h.
CBH:5230 Public Health Issues in Overweight Management 3 s.h.
CBH:5435 Substance Abuse Prevention and Early Intervention 3 s.h.
CBH:5440 Prevention and Early Intervention of Mental Health Disorders 3 s.h.
CBH:6115/ANTH:6115 Ethnographic Field Methods 3 s.h.
CBH:6215 Persuasion and Health 3 s.h.
CBH:6220 Health Communication Campaigns 3 s.h.
CBH:6305 Evaluation II: Design and Methods 3 s.h.
CBH:6335 Research Methods in Community and Behavioral Health 3 s.h.
CBH:6405 Maternal, Child, and Family Health 3 s.h.
CBH:6410 Special Topics arr.
CBH:6415 Independent Study in Community and Behavioral Health arr.
GEOG:3505 Foundations of GIS 3 s.h.

Epidemiology Subprogram

The Master of Public Health with epidemiology subprogram requires 42 s.h. of graduate credit. The subprogram is offered by the Department of Epidemiology (p. 1158) (College of Public Health).

The subprogram focuses on fundamental epidemiological concepts and methods and provides training in the use of public health data and methods for disease assessment and in methods for evaluating the need and outcome of programs and interventions. Graduates of the program work in public health departments and other health care settings.

Epidemiology subprogram students are required to attend departmental seminars and journal club. They also must present one scientific poster at an international, national, regional, state, university, or departmental poster session.

In addition to the M.P.H. course work listed under "Common Requirements" above, the epidemiology subprogram requires the following courses.

SUBPROGRAM CORE

All of these (11 s.h.):

BIOS:5120 Design and Analysis of Biomedical Studies 3 s.h.
EPID:5580 Public Health Laboratory Techniques 1 s.h.
EPID:5600 Introduction to Epidemiology Data Management and Analysis 3 s.h.
EPID:6400 Epidemiology II: Advanced Methods 4 s.h.

One of these (2-3 s.h.):

EPID:4450 Public Health Data 2 s.h.
EPID:4990 Practicing Evidence-Based Public Health 3 s.h.

One of these (2 s.h.):

EPID:5530 SurveillanceInternship: IRCID 2 s.h.
EPID:5540 Surveillance Mechanisms and Applications: Cancer and Other Registries 2 s.h.

Bioscience—one of these (3-4 s.h.):

PATH:5270 Pathogenesis of Major Human Diseases 3 s.h.
PATH:8133 Introduction to Human Pathology for Graduate Students 4 s.h.

ELECTIVES

Students earn at least 2 s.h. in elective courses (or 5 s.h. if they substitute an elective for the bioscience requirement). At least 3 s.h. of elective credit must be earned in courses offered by the Department of Epidemiology (prefix EPID) or in one of the following biostatistics courses.

BIOS:6110 Applied Categorical Data Analysis 3 s.h.
BIOS:6210 Applied Survival Analysis 3 s.h.

Health Communication Subprogram

The Master of Public Health with health communication subprogram requires 42 s.h. of graduate credit. The subprogram is offered by the Department of Community and Behavioral Health (p. 1152) (College of Public Health).

The subprogram provides opportunities for students to develop knowledge and skill in designing, evaluating, and implementing effective communication strategies and messages that speak to the health needs of diverse audiences. The program addresses clinician-patient interaction, family communication, group and organizational communication, and mass media and web-based campaigns.
In addition to the M.P.H. course work listed under "Common Requirements" above, the health communication subprogram requires the following courses.

**SUBPROGRAM CORE: HEALTH COMMUNICATION**

Four of these (12 s.h.):

- CBH:3150/JMC:3150 Media and Health 3 s.h.
- CBH:6210/COMM:6210 Health Communication 3 s.h.
- CBH:6215 Persuasion and Health Campaigns 3 s.h.
- COMM:6371 Communication Theory 3 s.h.

**SUBPROGRAM CORE: COMMUNITY AND BEHAVIORAL HEALTH**

Three of these (9 s.h.):

- CBH:5205 Social Determinants of Health 3 s.h.
- CBH:5220 Health Behavior and Health Education 3 s.h.
- CBH:5305 Evaluation I: Approaches and Applications 3 s.h.
- CBH:5310 Qualitative Research for Public Health 3 s.h.
- CBH:6115/ANTH:6115 Ethnographic Field Methods 3 s.h.
- CBH:6205 Designing and Implementing Interventions 3 s.h.
- GEOG:3505 Foundations of GIS 3 s.h.
- OEH:5010 Occupational and Environmental Health Seminar 0-1 s.h.
- OEH:5620 Occupational Health 3 s.h.

**ELECTIVES**

Students can earn the remainder of credit for their degree in elective courses (8 s.h.) offered by a department in the College of Public Health. Courses offered by departments in other colleges at the University of Iowa can be applied toward a degree with approval of a student's advisor.

Faculty expertise in areas related to occupational and environmental health can assist students in their endeavors. Sample plans that outline how elective courses can be combined with required courses in a focused plan of study are as follows.

**Environmental and Occupational Epidemiology**

- EPID:6400 Epidemiology II: Advanced Methods (elective) 4 s.h.
- OEH:4260 Global Water and Health (elective) 3 s.h.
- OEH:5530 Interpreting Occupational and Environmental Health Research (elective) 2 s.h.
- OEH:6510 Environmental and Occupational Epidemiology (required course) 3 s.h.
- OEH:6520 Injury Epidemiology (elective) 3 s.h.

**Global Environmental Health**

- OEH:4210 International Health (required course) 3 s.h.
- OEH:4220 U.S. and Global Environmental Health Policy (elective) 3 s.h.
- OEH:4260 Global Water and Health (elective) 3 s.h.
- OEH:5710 Environmental Toxicology (elective) 3 s.h.

**Injury and Violence Prevention**

- OEH:4510 Injury and Violence Prevention (required course) 3 s.h.
- OEH:4530 Global Road Safety (elective) 2 s.h.
- OEH:6520 Injury Epidemiology (elective) 3 s.h.
- OEH:6530 Epidemiology of Occupational Injuries (elective) 3-4 s.h.

**Occupational Health**

- OEH:4310 Occupational Ergonomics I (elective) 2-3 s.h.
- OEH:5410 Occupational Safety (required course) 3 s.h.
- OEH:6420 Industrial Hygiene Fundamentals (elective) 3 s.h.
- OEH:6430 Assessing Physical Agent Hazards (elective) 3 s.h.

**Rural Health and Safety**

- OEH:5410 Occupational Safety (elective) 3 s.h.
- OEH:6110 Rural Health and Agricultural Medicine (required course) 3 s.h.
Quantitative Methods Subprogram

The Master of Public Health with quantitative methods subprogram requires 42 s.h. of graduate credit. The subprogram is offered by the Department of Biostatistics (p. 1146) (College of Public Health).

The subprogram offers course work and applied learning experiences that prepare students for careers in health policy analysis, system and organizational planning, and program evaluation. Graduates of the program find positions in federal, state, and local government; professional associations; and private agencies. Varied academic backgrounds are appropriate preparation for this program, including business, liberal arts and sciences, and the health professions.

In addition to the M.P.H. course work listed under "Common Requirements" above, the policy and administration subprogram requires the following courses.

**SUBPROGRAM CORE**

*All of these:*

- HMP:5610 Health Policy 3 s.h.
- HMP:5611 Contemporary Issues in Health 0-1 s.h. Policy
- HMP:5650 Health Policy Analysis 3 s.h.
- HMP:6610 Legal Aspects of Health and Medical Care 3 s.h.
- HMP:6750 Seminar in Health Policy 3 s.h.

**ELECTIVES**

At least 12 s.h. chosen from these:

- HMP:5310 Quantitative Management in Health Care 2-3 s.h.
- HMP:5410 Health Economics I 3 s.h.
- HMP:5450 Health Insurance and Managed Care 3 s.h.
- HMP:5750 Medicare and Medicaid Policy 3 s.h.
- HMP:6710 Federalism and Health Policy 3 s.h.
- LAW:8562 Health Law 3 s.h.
- POLI:3100 American State Politics 3 s.h.
- URP:6337 Poverty, Planning, and Public Policy 3 s.h.

Quantitative Methods Subprogram

The Master of Public Health with quantitative methods subprogram requires 42 s.h. of graduate credit. The subprogram is offered by the Department of Biostatistics (p. 1146) (College of Public Health).

The subprogram is designed to train public health professionals who can provide leadership in the analysis of public health data and the design of studies for public health investigations. It is intended for individuals who are interested in public health and who have quantitative ability but not advanced mathematics training.

Applicants to the subprogram must meet all M.P.H. admission requirements; see "Admission" toward the end of this Catalog section. They also should have a cumulative g.p.a. of at least 3.00 and should have completed the following math and computer science course work: single variable calculus and matrix algebra, satisfied by one semester of calculus equivalent to AP Calculus AB and a high school algebra course involving matrices; and elementary computer programming instruction in any commonly used modern programming language (e.g., Python, Java, C++). Individuals who are admitted to the subprogram without having met all of these requirements must satisfy unmet requirements during their first semester of enrollment in the program.

In addition to the M.P.H. course work listed under "Common Requirements" above, the quantitative methods subprogram requires the following courses.

**SUBPROGRAM CORE**

All of these (12 s.h.):

- BIOS:5120 Design and Analysis of Biomedical Studies 3 s.h.
- BIOS:5310 Research Data Management 3 s.h.
- BIOS:5510 Biostatistical Computing 3 s.h.
- BIOS:6110 Applied Categorical Data Analysis 3 s.h.

**ELECTIVES**

At least 9 s.h. chosen from these:

- BIOL:4213 Bioinformatics 4 s.h.
- BIOS:6210 Applied Survival Analysis 3 s.h.
- BIOS:6310 Introductory Longitudinal Data Analysis 3 s.h.
- BIOS:6610 Statistical Methods in Clinical Trials 3 s.h.
- BIOS:7600 Advanced Biostatistics Seminar 0-3 s.h.
- MICR:2157 General Microbiology 5 s.h.
- MICR:3147 Survey of Immunology 3 s.h.
- STAT:3100 Introduction to Mathematical Statistics I 3 s.h.
- STAT:3101 Introduction to Mathematical Statistics II 3 s.h.
- STAT:3210 Experimental Design and Analysis 3 s.h.
- STAT:4100 Mathematical Statistics I 3 s.h.
- STAT:4101 Mathematical Statistics II 3 s.h.
- STAT:4200 Statistical Methods and Computing 3 s.h.
- STAT:4520 Bayesian Statistics 3 s.h.
- STAT:5100 Statistical Inference I 3 s.h.
- STAT:5101 Statistical Inference II 3 s.h.
- STAT:6540 Applied Multivariate Analysis 3 s.h.
- STAT:6560 Applied Time Series Analysis 3 s.h.

Joint B.A. or B.S./M.P.H. Degrees

The College of Public Health collaborates with the College of Liberal Arts and Sciences to offer joint bachelor's degree/Master of Public Health programs for undergraduate students majoring in biology, psychology, or statistics who would like to earn an M.P.H. degree. The joint programs permit students to count a limited amount of credit toward the requirements of both degrees, enabling them to begin the study of public health before they complete the bachelor's degree. Each joint program pairs an undergraduate major with a specific M.P.H. subprogram, as follows.

Joint B.A. in biology/M.P.H. with epidemiology subprogram; see Biology (p. 119) (College of Liberal
All of these (21 s.h.):  

**ADDITIONAL REQUIRED COURSES**  

All of these (21 s.h.):  

- MPH:6700 Public Health Emergency Preparedness for Veterinarians and Other Public Health Disciplines  
  2 s.h.  
- EPID:5200 Principles of Public Health Informatics  
  3 s.h.  
- EPID:5300 Food Safety  
  3 s.h.  
- EPID:5320 Exotic and Emerging Diseases of Animals  
  1 s.h.  
- EPID:5470 Applied Veterinary Epidemiology/Biostatistics  
  3 s.h.  
- EPID:5550 Diagnostic Microbiology for Epidemiology  
  3 s.h.  
- EPID:5570 Zoonotic Diseases  
  3 s.h.  
- OEH:6110 Rural Health and Agricultural Medicine  
  3 s.h.
The joint M.P.H./J.D. requires the following course work.

**M.P.H. COMMON REQUIREMENTS**

Students must complete courses listed under "Common Requirements" (core courses and practicum) for the Master of Public Health; see the beginning of this Catalog section.

**M.P.H. ELECTIVES**

Students earn 9 s.h. in elective courses chosen from one of the following public health areas: biostatistics, community and behavioral health, epidemiology, health communication, health policy, occupational and environmental health. Students choose electives in consultation with their advisors in the College of Law and the College of Public Health.

**J.D. REQUIREMENTS**

Students in the joint M.P.H./J.D. program must complete the curriculum of the J.D. program; see College of Law (p. 969) in the Catalog. Students must be enrolled in the College of Law to take College of Law courses.

**COURSES THAT COUNT TOWARD BOTH DEGREES**

Students may count up to 12 s.h. earned in the following College of Law courses toward the M.P.H. degree.

**LAW:8105 Administrative Law**
3 s.h.

**LAW:8407 Topics in Employee Benefits Law**
arr.

**LAW:8421 Employment Law**
2-3 s.h.

**LAW:8433 Environmental Law**
3 s.h.

**LAW:8467 Family Law**
3-4 s.h.

**LAW:8562 Health Law**
2-3 s.h.

**LAW:8622 International Environmental Law**
3 s.h.

**LAW:8670 Labor Law**
3-4 s.h.

**LAW:8742 Negotiations**
2-4 s.h.

**LAW:8751 Nonprofit Organizational Effectiveness I**
3 s.h.

**LAW:8752 Nonprofit Organizational Effectiveness II**
3 s.h.

**LAW:8887 State and Local Government**
1-3 s.h.

**LAW:9413 Health and Elder Law Practicum**
1-3 s.h.

**Joint M.P.H./M.D.**

The joint Master of Public Health/Doctor of Medicine requires a minimum of 42 s.h. of graduate credit in addition to the requirements of the M.D. degree. Students who complete the program enjoy expanded career opportunities and are well prepared to apply the principles of medicine and public health in their work. Separate application to each degree program is required; applicants must be admitted to both programs before they may be admitted to the joint program.

The joint M.P.H./M.D. requires the following course work.

**M.P.H. COMMON REQUIREMENTS**

Students must complete courses listed under "Common Requirements" (core courses and practicum) for the Master of Public Health; see the beginning of this Catalog section.

**M.P.H. ELECTIVES**

Students earn 9 s.h. in elective courses chosen from one of the following public health areas: biostatistics, community and behavioral health, epidemiology, health communication, health policy, occupational and environmental health. Students choose electives in consultation with the student’s advisors in the Colleges of Pharmacy and Public Health.
PHARM.D. REQUIREMENTS

Students in the joint M.P.H./Pharm.D. program must complete the curriculum of the Pharm.D. program; see the College of Pharmacy (p. 1128) section of the Catalog. Students must be enrolled in the College of Pharmacy in order to take College of Pharmacy courses.

COURSES THAT COUNT TOWARD BOTH DEGREES

Students may count up to 12 s.h. earned in the following Pharm.D. courses toward the M.P.H. degree.

- PHAR:8105 Social Aspects of Pharmacy Care 2 s.h.
- PHAR:8204 Pharmacy Practice Lab IV (1 s.h. counts toward both degrees)
- PHAR:8241 Endocrinology, Ophthalmology, Women's and Men's Health Therapeutics 2 s.h.
- PHAR:8243 Cardiovascular Therapeutics 2 s.h.
- PHAR:8308 Pharmaceutical Economics and Insurance 3 s.h.
- PHAR:8343 Infectious Disease Therapeutics 2 s.h.

Admission

Applicants to the M.P.H. program must apply through the Schools of Public Health Application Service (SOPHAS); they also must apply for admission to the Graduate College through the University of Iowa Office of Admissions. Applicants must submit scores on the Graduate Record Exam (GRE) General Test, LSAT, DAT, VCAT, GMAT, or another professional placement exam; scores must be at or above the median scores for test takers applying to similar programs. For detailed application information, visit Prospective Students on the Master of Public Health web site.

Applicants to the M.P.H. program must have successfully completed one semester each of college algebra and biology.

Applicants whose first language is not English and who do not hold a bachelor's degree from an accredited institution in the United States, the United Kingdom, Canada (except Quebec), Australia, or New Zealand must score at least 100 (Internet-based) on the Test of English as a Foreign Language (TOEFL). Applicants who score 81-99 (Internet-based) are required to take English fluency courses. Applicants who score below 81 are not considered for admission.

Applicants must meet the admission requirements of the Graduate College; see the Manual of Rules and Regulations of the Graduate College.

Students may enter the M.P.H. program in fall and summer. Application deadline for fall entrance to the M.P.H. program is April 15; application deadline for summer entrance is April 1.

Application deadline for the M.P.H. for practicing veterinarians is March 1.

Students may enter the M.P.H. joint programs in fall, spring, and summer. Contact the individual joint programs for deadline information.

Financial Support

A limited number of modest tuition awards are available each year for M.P.H. students. For information on financing education through jobs, grants, and loans, contact the University's Office of Student Financial Aid.

Courses

MPP:2099 Fundamentals of Public Health 3 s.h.
Introduction to public health; emphasis on issues, challenges, achievements, careers; historical events that serve as a foundation for public health practice. GE: Social Sciences.

MPP:4101 Introduction to Public Health 3 s.h.
Concepts, structures, and activities in public health practice. Offered fall semesters and summer sessions.

MPP:6100 Essentials of Public Health arr.
Introduction and overview of the scope of public health; emphasis on history, definitions, issues, achievements, and future challenges; examples of public health research and practice.

MPP:6500 Independent Study in Public Health arr.
In-depth pursuit of an area of special interest in public health.

MPP:6600 Service-Learning in Public Health arr.
Community service learning experience directly related to goals and objectives of a specific public health course; faculty-guided planning and reflection.

MPP:6700 Public Health Emergency Preparedness for Veterinarians and Other Public Health Disciplines 2-3 s.h.
Introduction to public health emergency preparedness from a one health perspective; emergency preparedness from federal, state, and local perspectives; important elements for preparing responders; preparedness information systems and communication techniques.

MPP:7000 M.P.H. Practicum Experience 0-6 s.h.
Comprehensive and integrated application of knowledge acquired in the M.P.H. program in a practice setting; demonstration of professional competence in public health practice. Prerequisites: MPP:4101 and BIOS:5110 and CBH:4105 and EPID:4400 and (HMP:4000 or HMP:5005) and OEH:4240. Requirements: an approved practicum proposal.
Occupational and Environmental Health

Head

- Peter Thorne

Graduate degrees: M.S. in occupational and environmental health; Ph.D. in occupational and environmental health

Faculty: http://www.public-health.uiowa.edu/oeh-faculty-list/

Web site: http://www.public-health.uiowa.edu/oeh/

The Department of Occupational and Environmental Health focuses on assessment of risk factors in the physical environment and their relationship to disease—particularly health problems of agricultural and industrial workers. Students are guided by faculty members whose research interests include rural health care delivery, agricultural health, environmental health, occupational medicine, occupational lung disease, mammalian toxicology, inhalation toxicology, ergonomics, indoor air quality, occupational injury, injury epidemiology, injury prevention programs, aerosol physics, air and water quality, environmental chemistry, analytical toxicology, and environmental health in developing countries.

Graduate Programs of Study

- Master of Science in occupational and environmental health
- Doctor of Philosophy in occupational and environmental health

Both of the department's graduate degree programs offer optional subprograms in agricultural safety and health, and industrial hygiene.

In addition to its degree programs, the department offers the Master of Public Health with a subprogram in agricultural safety and health; see "M.P.H. Subprograms" below. It also offers the College of Public Health's graduate Certificate in Agricultural Safety and Health; see Agricultural Safety and Health (p. 1145) in the Catalog.

The department collaborates with the Department of Biomedical Engineering (College of Engineering) and the School of Urban and Regional Planning (Graduate College) to offer joint degree programs; see "Joint B.S.E. in Biomedical Engineering/M.S." and "Joint M.S./M.A. or M.S. in Urban and Regional Planning" below.

Individuals who are not enrolled in one of the department's degree programs but wish to take courses offered by the department may apply for professional improvement status. The department also offers an occupational medicine residency training program.

Master of Science

The Master of Science program in occupational and environmental health requires a minimum of 38 s.h. of graduate credit. It is offered with two optional subprograms: agricultural safety and health and industrial hygiene. The M.S. with agricultural safety and health subprogram requires a minimum of 39 s.h. of graduate credit; the M.S. with industrial hygiene subprogram requires a minimum of 43 s.h. of graduate credit. All M.S. students are required to complete a thesis.

The M.S. in occupational and environmental health without a subprogram requires the following work.

**CORE COURSES**

Students must complete all of the following courses.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>S.H.</th>
</tr>
</thead>
<tbody>
<tr>
<td>OEH:4240</td>
<td>Global Environmental Health</td>
<td>3</td>
</tr>
<tr>
<td>OEH:5010</td>
<td>Occupational and Environmental Health Seminar</td>
<td>1</td>
</tr>
<tr>
<td>OEH:5710</td>
<td>Environmental Toxicology</td>
<td>3</td>
</tr>
<tr>
<td>BIOS:5110</td>
<td>Introduction to Biostatistics</td>
<td>3</td>
</tr>
<tr>
<td>EPID:4400</td>
<td>Epidemiology I: Principles</td>
<td>3</td>
</tr>
<tr>
<td>GRAD:7270</td>
<td>Principles of Scholarly Integrity</td>
<td>0</td>
</tr>
<tr>
<td>MPH:6100</td>
<td>Essentials of Public Health</td>
<td>1</td>
</tr>
<tr>
<td>PATH:8133</td>
<td>Introduction to Human Pathology for Graduate Students</td>
<td>4</td>
</tr>
</tbody>
</table>

**ELECTIVES**

Credit earned in elective courses and the thesis completes the 38 s.h. required for the degree. Students work with their advisors to select electives appropriate for their professional goals.

**THESIS**

A thesis is required. Students may earn a maximum of 6 s.h. for the thesis. Additional thesis credit may be allowed for students who earn more than 38 s.h.

<table>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>S.H.</th>
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**M.S. with Subprogram in Agricultural Safety and Health**

The M.S. with subprogram in agricultural safety and health requires a minimum of 39 s.h. of graduate credit. The program prepares students for careers in education, health care, insurance, and agribusiness as specialists in agricultural safety and health.

The M.S. in occupational and environmental health with the agricultural safety and health subprogram requires the following work.

**SUBPROGRAM CORE**

Students must complete all of the following courses.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>S.H.</th>
</tr>
</thead>
<tbody>
<tr>
<td>OEH:4240</td>
<td>Global Environmental Health</td>
<td>3</td>
</tr>
<tr>
<td>OEH:4540</td>
<td>Statistics for Experimenters</td>
<td>3</td>
</tr>
<tr>
<td>OEH:5010</td>
<td>Occupational and Environmental Health Seminar</td>
<td>1</td>
</tr>
<tr>
<td>OEH:5410</td>
<td>Occupational Safety</td>
<td>3</td>
</tr>
<tr>
<td>OEH:5620</td>
<td>Occupational Health</td>
<td>3</td>
</tr>
<tr>
<td>OEH:5710</td>
<td>Environmental Toxicology</td>
<td>3</td>
</tr>
<tr>
<td>OEH:6110</td>
<td>Rural Health and Agricultural Medicine</td>
<td>3</td>
</tr>
<tr>
<td>OEH:6120</td>
<td>Current Topics in Agriculture and Rural Health</td>
<td>1</td>
</tr>
<tr>
<td>OEH:7040</td>
<td>Preceptorship in Occupational and Environmental Health</td>
<td>arr.</td>
</tr>
<tr>
<td>EPID:4400</td>
<td>Epidemiology I: Principles</td>
<td>3</td>
</tr>
</tbody>
</table>
GRAD:7270 Principles of Scholarly Integrity 0 s.h.
MPH:6100 Essentials of Public Health 1 s.h.

ELECTIVES
Agricultural safety and health students must complete elective course work from one of four focus areas. The amount of credit required varies by focus area, as follows.
Industrial hygiene: 9 s.h.
Ergonomics: 9 s.h.
Occupational epidemiology: 10 s.h.
Occupational injury prevention: 9 s.h.

THESIS
A thesis is required. Students may earn a maximum of 6 s.h. for the thesis.

M.S. with Subprogram in Industrial Hygiene
The M.S. with subprogram in industrial hygiene requires a minimum of 43 s.h. of graduate credit. The program prepares students for careers in industrial hygiene as well as the broad field of occupational and environmental health. Career opportunities are available in health and safety departments of industries; in consulting firms; in academic institutions; and in local, state, and federal public health agencies.
The M.S. in occupational and environmental health with the industrial hygiene subprogram requires the following work.

SUBPROGRAM CORE
Students must complete all of the following courses.
OEH:4240 Global Environmental Health 3 s.h.
OEH:4310 Occupational Ergonomics I 3 s.h.
OEH:4540 Statistics for Experimenters 3 s.h.
OEH:5010 Occupational and Environmental Health Seminar (taken three times, twice for 0 s.h. and once for 1 s.h.) 1 s.h.
OEH:5410 Occupational Safety 3 s.h.
OEH:5620 Occupational Health 3 s.h.
OEH:5710 Environmental Toxicology 3 s.h.
OEH:6420 Industrial Hygiene Fundamentals 3 s.h.
OEH:6430 Assessing Physical Agent Hazards 3 s.h.
OEH:6440 Control of Occupational Hazards 3 s.h.
OEH:6450 Aerosol Technology 3 s.h.
EPID:4400 Epidemiology I: Principles 3 s.h.
GRAD:7270 Principles of Scholarly Integrity 0 s.h.
MPH:6100 Essentials of Public Health 1 s.h.

ELECTIVES
Credit in elective courses and the thesis completes the 43 s.h. required for the degree. Students work with their advisors to select electives appropriate for their professional goals.

THESIS
A thesis is required. Students may earn a maximum of 6 s.h. for the thesis.

Joint B.S.E. in Biomedical Engineering/M.S.
Bachelor of Science in Engineering students majoring in biomedical engineering (musculoskeletal biomechanics track) who are interested in earning a Master of Science in occupational and environmental health (industrial hygiene subprogram) may apply to the joint B.S.E./M.S. program offered by the College of Engineering and the College of Public Health. The joint program permits students to count a limited amount of credit toward the requirements of both degrees, enabling them to begin the study of public health before they complete the bachelor’s degree. For information about the B.S.E. program, see Biomedical Engineering (p. 851) (College of Engineering) in the Catalog.

Joint M.S./M.A. or M.S. in Urban and Regional Planning
The joint Master of Science in occupational and environmental health/Master of Arts or Master of Science in urban and regional planning requires 65 s.h. of graduate credit. Separate application to each degree program is required; applicants must be admitted to both programs before they may be admitted to the joint degree program. For information about the graduate programs in planning, see Urban and Regional Planning (p. 963) (Graduate College) in the Catalog.

M.P.H. Subprograms
The Department of Occupational and Environmental Health offers the Master of Public Health with a subprogram in occupational and environmental health. The subprogram provides students with a broad perspective on public health and career preparation for a variety of professional positions in occupational and environmental health. Students have the option of selecting focused course work in the following areas: global environmental health, occupational health, rural health and safety, injury and violence prevention, and environmental and occupational epidemiology.
For detailed information about the M.P.H. degree, see Master of Public Health Program (p. 1173) in the Catalog.

Doctor of Philosophy
The Doctor of Philosophy program in occupational and environmental health requires 72 s.h. of graduate credit. All doctoral students must complete a dissertation. The program prepares students for professional and academic careers in environmental and occupational health. It is offered with two optional subprograms: agricultural safety and health, and industrial hygiene.
The Ph.D. in occupational and environmental health without a subprogram requires the following work.

CORE COURSES
Students must complete all of the following courses.
OEH:4240 Global Environmental Health 3 s.h.
OEH:5010 Occupational and Environmental Health Seminar (taken three times, twice for 0 s.h. and once for 1 s.h.) 1 s.h.
OEH:5620 Occupational Health 3 s.h.
BIOS:5110 Introduction to Biostatistics 3 s.h.
ELECTIVES

Agricultural safety and health subprogram students must complete elective course work from one of four focus areas. The amount of credit required varies by focus area, as follows.

Industrial hygiene: 15 s.h.
Ergonomics: 15 s.h.
Occupational epidemiology: 12 s.h.
Occupational injury prevention: 12 s.h.

RESEARCH CREDIT

Students earn the remaining credit for the Ph.D. by completing any combination of the following courses or other classroom courses. All Ph.D. students must complete a dissertation.

OEH:7020 Independent Study in Occupational and Environmental Health arr.
OEH:7030 Research in Occupational and Environmental Health arr.

Ph.D. with Subprogram in Industrial Hygiene

The Ph.D. with subprogram in industrial hygiene provides doctoral students with specialized knowledge in industrial hygiene in addition to their expertise in the broad field of occupational and environmental health.

The Ph.D. in occupational and environmental health with the industrial hygiene subprogram requires the following work.

SUBPROGRAM CORE

Students must complete all of the following courses.

OEH:4240 Global Environmental Health 3 s.h.
OEH:4310 Occupational Ergonomics I 3 s.h.
OEH:5010 Occupational and Environmental Health Seminar (taken three times, twice for 0 s.h. and once for 1 s.h.) 1 s.h.
OEH:5410 Occupational Safety 3 s.h.
OEH:5620 Occupational Health 3 s.h.
OEH:5710 Environmental Toxicology 3 s.h.
OEH:6420 Industrial Hygiene Fundamentals 3 s.h.
OEH:6430 Assessing Physical Agent Hazards 3 s.h.
OEH:6440 Control of Occupational Hazards 3 s.h.
OEH:6450 Aerosol Technology 3 s.h.
OEH:6460 Quantitative Exposure Assessment: Study Design and Evaluation 3 s.h.
BIOS:5120 Design and Analysis of Biomedical Studies 3 s.h.
EPID:4400 Epidemiology I: Principles 3 s.h.
GRAD:7270 Principles of Scholarly Integrity 1 s.h.
MPH:6100 Essentials of Public Health 1 s.h.

One of these:
OEH:4540 Statistics for Experimenters 3 s.h.
BIOS:5110 Introduction to Biostatistics 3 s.h.
RESEARCH CREDIT
Students earn the remaining credit for the Ph.D. by completing any combination of the following courses or other classroom courses. All Ph.D. students must complete a dissertation.

<table>
<thead>
<tr>
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<th>Availability</th>
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</thead>
<tbody>
<tr>
<td>OEH:7020</td>
<td>Independent Study in Occupational and</td>
<td>arr.</td>
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<tr>
<td></td>
<td>Environmental Health</td>
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<tr>
<td>OEH:7030</td>
<td>Research in Occupational and Environmental</td>
<td>arr.</td>
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<tr>
<td></td>
<td>Health</td>
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</tbody>
</table>

Admission
Applicants to the M.S. and Ph.D. programs in occupational and environmental health must apply through the Schools of Public Health Application Service (SOPHAS); they also must apply for admission to the Graduate College through the University of Iowa Office of Admissions. For detailed application information, visit Prospective Students/How to Apply on the Department of Occupational and Environmental Health web site.

The occupational and environmental health faculty takes several factors into consideration when evaluating applications for admission, including Graduate Record Exam (GRE) General Test scores, grade-point averages, letters of recommendation, intent and motivation for graduate study, and research interests. A student with deficiencies in one area may be admitted if all other components of his or her application are very strong.

All M.S. and Ph.D. program applicants must hold a bachelor's degree and have a cumulative g.p.a. of at least 3.00 (M.S. applicants) or at least 3.25 (Ph.D. applicants). All applicants must have taken the Graduate Record Exam (GRE) General Test. A verbal score of at least 151 and a quantitative score of at least 152 are recommended. For applicants who have not taken the GRE, the department considers scores from other standardized tests, such as the Medical College Admission Test (MCAT).

Applicants whose first language is not English and who do not hold a bachelor's degree from an accredited institution in the United States, the United Kingdom, Canada (except Quebec), Australia, or New Zealand must score at least 100 (Internet-based) on the Test of English as a Foreign Language (TOEFL). Applicants who score 81-99 (Internet-based) are required to take English fluency courses. Applicants who score below 81 are not considered for admission.

Undergraduate preparation for M.S. applicants must include course work in mathematics, biology, chemistry, and either physical sciences or engineering, depending on the applicant's chosen specialty area.

M.S. applicants who intend to pursue the industrial hygiene subprogram also must have taken physics and mathematics through calculus; course work in biology, microbiology, and computer programming is highly recommended.

Completion of the M.S. program before beginning Ph.D. study is recommended. Undergraduate preparation for doctoral applicants must include at least two semesters of chemistry, one semester of physics, and one semester of calculus. Course work in biology, microbiology, and computer programming is highly recommended, particularly for students interested in some specialized areas.

Applicants must meet the admission requirements of the Graduate College; see the Manual of Rules and Regulations of the Graduate College.

Students may enter the department's graduate programs in the fall. February 1 is the priority application deadline for consideration for financial support; May 1 is the final application deadline.

Financial Support
Several graduate student awards, including tuition and stipend support, are available for individuals interested in industrial hygiene, agricultural safety and health, ergonomics, occupational epidemiology, or occupational injury prevention. Both stipend and tuition support are available for all occupational medicine residents. Full-time graduate students in good academic standing (those not admitted on conditional status) are eligible for a stipend and tuition support. All other students are eligible for tuition support only; requests are considered case-by-case. All recipients must be U.S. citizens or permanent residents.

POSTDOCTORAL POSITIONS
The College of Public Health's Environmental Health Sciences Training Program offers postdoctoral positions in environmental health/toxicology. Appointments are made for two years with the possibility of an additional year. Applicants must be U.S. citizens or permanent residents.

Residency Program
In cooperation with University of Iowa Hospitals and Clinics, the department offers residency training in occupational medicine for physicians seeking specialty training in occupational medicine. For information contact the director of the Occupational Medicine Residency Program.

Facilities and Resources
The Department of Occupational and Environmental Health is housed in the College of Public Health Building, on the University's health sciences campus, and at the Institute for Rural and Environmental Health, at the University of Iowa Research Park. College of Public Health-based laboratory facilities give researchers and students access to cutting-edge technologies for the study of occupational and environmental health.

The Inhalation Toxicology Facility provides a full array of inhalation toxicology, aerosol science, and bioaerosol assay services. A primary focus of the facility is the study of toxicants found in the agricultural environment and related exposure situations. The facility is particularly well-equipped for studying organic dusts and bioaerosols.

The Occupational Hygiene Laboratory provides expertise and equipment for exposure assessment in occupational settings. The laboratory offers a range of sample collection capabilities and an extensive inventory of sampling equipment. Field and laboratory services are available through laboratory support exposure-response studies and control technology development studies in a variety of occupational arenas, including agriculture, construction, and indoor environments (home and office).
A computer laboratory is available for student use, and a library collection is located at the Institute for Rural and Environmental Health.

**Heartland Center for Occupational Health and Safety**

The Heartland Center for Occupational Health and Safety, one of 17 education and research centers funded by the National Institute of Occupational Safety and Health, provides training, education, and outreach. Its program areas are industrial hygiene, occupational medicine, ergonomics, agricultural safety and health, occupational injury prevention, occupational epidemiology, and continuing education.

**Courses**

**OEH:3210 Health, Work, and the Environment**

Current topics in occupational and environmental health; how the United States protects workers, protects people from environmental agents, and reduces environmental harm. Same as GEOG:3210.

**OEH:4210 International Health**

Urgent health problems in the developing world and among disadvantaged populations in developed countries; biological, social, cultural, political aspects of international health problems; applications of research methods from epidemiology, environmental health, social sciences. Same as GHS:4210, EPID:4210.

**OEH:4220 U.S. and Global Environmental Health Policy**

Major concerns in environment and human health, legislation enacted to deal with these concerns; emphasis on contemporary issues. Offered fall semesters of odd years. Requirements: for OEH:4220 — OEH:4240; for CEE:4220 — CEE:2150. Same as CEE:4220, GHS:4220.

**OEH:4240 Global Environmental Health**

Environmental health comprised of aspects of human health determined by interactions with physical, chemical, biological, and social factors in global environment; worldview and survey; focus on issues most relevant today; sustainability; air, water, and soil pollution and remediation; occupational health; injury prevention; food safety and security; risk assessment; environmental health policy.

**OEH:4260 Global Water and Health**

Overview of global water and health; microbial and toxicant identification, water-related adverse health effects, risk assessment, approaches to reduce water-related disease, distal water-related influences (e.g., global warming), and historic cases.

**OEH:4310 Occupational Ergonomics I**

Principles of ergonomics, with focus on physical capabilities of workers and their interactions with their work environment; physiological basis of work, patterns of work, occupational risk factors for musculoskeletal and neurovascular disorders, workplace and equipment design, integration of ergonomics in manufacturing processes.

**OEH:4510 Injury and Violence Prevention**

Theory, research, and practice of injury control; unintentional and intentional injuries; local, national, international injury issues. Same as EPID:4510.

**OEH:4520 Research Methods in Disaster Studies**

Epidemiologic study of disasters and their health consequences; research to identify and reduce health effects, research in context of response and preparedness. Same as EPID:4520, GHS:4275.

**OEH:4530 Global Road Safety**

Road safety problem, data sources, research methods used in field, and how intervention and prevention programs are developed and evaluated; lecture, hands-on approaches.

**OEH:4540 Statistics for Experimenters**

Application of statistical techniques to evaluate data derived from experimental samples designs; use of spreadsheets, statistical software; design and analysis of experiments; regression analysis; model building; practical applications. Same as CEE:4187.

**OEH:4920 Solid and Hazardous Wastes**


**OEH:5010 Occupational and Environmental Health Seminar**

Contemporary topics in occupational health, agricultural and comparative medicine, environmental health.

**OEH:5120 Veterinary Public Health: The Profession**

History and overview of veterinary public health and the American College of Veterinary Preventive Medicine (ACVPM); preparation for ACVPM board of certification.

**OEH:5410 Occupational Safety**

Principles and practices of occupational safety; applications in industrial and other occupational settings; interactions with other disciplines.

**OEH:5530 Interpreting Occupational and Environmental Health Research**

Tools necessary for making critical assessment of published scientific research reports from a methodological perspective; examples from recently published research studies in occupational and environmental health. Corequisites: BIOS:5110 and EPID:4400.

**OEH:5620 Occupational Health**

Principles, practice of occupational medicine, fundamentals of industrial hygiene and safety, occupational health management, ergonomics, occupational health nursing. Offered fall semesters.
OEH:5710 Environmental Toxicology 3 s.h.  
Sources, routes of absorption, effects of environmental toxicants affecting man; pathophysiology of toxicant actions, including those of air and water pollutants, metals, pesticides, solvents, food toxicants, chemicals. Requirements: college chemistry or physiology or biochemistry.

OEH:6110 Rural Health and Agricultural Medicine 3 s.h.  
Clinical orientation of specific health problems of rural residents, agricultural workers; rural health care delivery, socioeconomic issues in agriculture and their effects on health and safety of the agricultural population; occupational health problems, environmental health hazards in rural areas. Requirements: enrollment in College of Public Health or health sciences.

OEH:6120 Current Topics in Agriculture and Rural Health 0-1 s.h.  
Issues that affect the health of agricultural populations, such as agro-terrorism, antibiotic resistance, genetically modified organisms; current scientific literature.

OEH:6130 Agricultural Safety and Health: Practice, Research Methods, and Policy 3 s.h.  
Comprehensive overview of regional, national, and global agricultural production and associated public health hazards; solutions to identified hazards. Corequisites: OEH:6110, if not taken as a prerequisite.

OEH:6140 Environmental Toxicology 3 s.h.  
Physical science concepts applied to control of occupational hazards ranging from dusts to mists to vapors; strategies, management issues, personal protective equipment, implementation skills; in-depth instruction on local exhaust ventilation system design. Prerequisites: OEH:6420.

OEH:6450 Aerosol Technology 3 s.h.  
Particle statistics and physics of aerosols, including inertia, diffusion, nucleation, evaporation, condensation, optics, electrical properties; relationship to fields such as agriculture, nanotechnology, environmental and occupational health, atmospheric chemistry, drug delivery.

OEH:6460 Quantitative Exposure Assessment: Study Design and Evaluation 3 s.h.  
Principles of designing occupational and environmental exposure assessment studies, analyzing exposure data, and conducting exposure-response evaluations. Prerequisites: BIOS:5110 or OEH:4540.

OEH:6510 Environmental and Occupational Epidemiology 3 s.h.  
Overview of methods to interpret and perform environmental and occupational epidemiologic studies with focus on exposure assessment; valuable insights into identifying regional, national, global environmental, and occupational health-related issues. Prerequisites: EPID:4400. Same as EPID:6510.

OEH:6520 Injury Epidemiology 3 s.h.  
How epidemiology can be applied to injury prevention and control: epidemiology literature, specific methodological problems involved in the epidemiology of injuries, critical evaluation of research articles. Offered spring semesters of odd years. Prerequisites: EPID:4400. Same as EPID:6510.

OEH:6530 Epidemiology of Occupational Injuries 3-4 s.h.  
Epidemiological literature on occupational injuries and their prevention; focus on research methods. Offered spring semesters of even years. Prerequisites: EPID:4400. Same as EPID:6530.

OEH:6610 Advanced Topics in Occupational Medicine 2 s.h.  
Skills and knowledge for evaluating and treating patients with work-related illness.

OEH:6720 Advanced Toxicology 4 s.h.  
Hepatic metabolism and toxification mechanisms, pulmonary and immunotoxicology, nervous system poisons and their mechanisms of action, general and molecular concepts of chemical carcinogenesis. Prerequisites: OEH:5710.


OEH:7010 Problems in Occupational and Environmental Health arr.
Didactic material in occupational and environmental health; may include tutorial, seminar, faculty-directed independent work (e.g., literature search, project, short research project).

**OEH:7020 Independent Study in Occupational and Environmental Health**

In-depth pursuit of an area in occupational and environmental health requiring substantial creativity and independence.

**OEH:7030 Research in Occupational and Environmental Health**

Research that may lead to a dissertation.

**OEH:7040 Preceptorship in Occupational and Environmental Health**

Work experience using knowledge and skills acquired in the classroom; arranged in conjunction with departmental or collegiate activities or with governmental agencies or private industry.

**OEH:8610 Occupational Medicine**

In-depth study of an area in occupational and environmental medicine, with clinical experience in an outpatient community setting. Four-week course. Requirements: M.D. enrollment.
Translational and Clinical Investigation

Head, Department of Epidemiology
• James C. Torner

Coordinator, Translational and Clinical Investigation
• James C. Torner

Graduate certificate: translational and clinical investigation

The Department of Epidemiology (p. 1158) and the Institute for Clinical and Translational Science (ICTS) offer the Certificate in Translational and Clinical Investigation for clinicians who seek advanced training in clinical methodology and applied patient-oriented research skills.

Graduate Program of Study
• Certificate in Translational and Clinical Investigation

Certificate
The Certificate in Translational and Clinical Investigation requires 17 s.h. of graduate credit and may be completed in one year.

Certificate students complete didactic course work and clinical preceptorships and participate in clinical research seminars. They become proficient in the conduct of independent clinical research, including hypothesis development, study design, knowledge of research ethics, survey development, data collection, basic and advanced statistical analyses, and interpretation of results. They also develop core competencies in their area of interest.

The certificate program is open to individuals who hold a doctoral-level degree in a clinical discipline (e.g., M.D., D.O., D.D.S., Ph.D., Pharm.D., D.V.M.) and are admitted as graduate students to the College of Public Health or are enrolled in a basic or health science doctoral program at the University of Iowa. Other admission requirements are similar to those for the M.S. program in epidemiology (p. 1158).

The Certificate in Translational and Clinical Investigation requires the following work.

Required—all of these:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>EPID:4400</td>
<td>Epidemiology I: Principles</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>EPID:5500</td>
<td>Introduction to Clinical Epidemiology</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>EPID:6950</td>
<td>Clinical Research Ethics</td>
<td>2-3 s.h.</td>
</tr>
<tr>
<td>BIOS:5110</td>
<td>Introduction to Biostatistics</td>
<td>3 s.h.</td>
</tr>
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Electives—6 s.h. from these:

<table>
<thead>
<tr>
<th>Course Code</th>
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</thead>
<tbody>
<tr>
<td>BIOS:6210</td>
<td>Applied Survival Analysis</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>BIOS:6310</td>
<td>Introductory Longitudinal Data Analysis</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>BIOS:6610</td>
<td>Statistical Methods in Clinical Trials</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>BIOS:7600</td>
<td>Advanced Biostatistics Seminar</td>
<td>0-3 s.h.</td>
</tr>
</tbody>
</table>

CBH:5235 Community-Based Participatory Research 3 s.h.
CBH:5305 Evaluation I: Approaches and Applications 3 s.h.
CBH:6205 Designing and Implementing Interventions 3 s.h.
CBH:6305 Evaluation II: Design and Methods 3 s.h.
DPH:6004 Principles of Oral Epidemiology 0-3 s.h.
EPID:4120 Public Health Nutrition 3 s.h.
EPID:4450 Public Health Data 2 s.h.
EPID:4990 Practicing Evidence-Based Public Health 3 s.h.
EPID:5200/GSIP:5220 Principles of Public Health Informatics 3 s.h.
EPID:5214 Meta-Analysis of Epidemiologic Studies 3 s.h.
EPID:5560 Introduction to Molecular Epidemiology 3 s.h.
EPID:5570 Zoonotic Diseases 2-3 s.h.
EPID:5600 Introduction to Epidemiology Data Management and Analysis 3 s.h.
EPID:6100 Writing a Research Protocol 3 s.h.
EPID:6245/HHP:6210 Epidemiology of Physical Activity 3 s.h.
EPID:6250 Genetics and Epidemiology 4 s.h.
EPID:6330 Global Nutrition Policy 1-3 s.h.
EPID:6350 Nutritional Epidemiology 2 s.h.
EPID:6360 Nutrition Intervention in Clinical Trials Research 2 s.h.
EPID:6370 Nutrition Intervention in Research Lab 3 s.h.
EPID:6510/OEH:6520 Injury Epidemiology 3 s.h.
EPID:6530/OEH:6530 Epidemiology of Occupational Injuries 3-4 s.h.
EPID:6550/GHS:6550 Epidemiology of Infectious Diseases 3 s.h.
EPID:6560 Hospital Epidemiology 2 s.h.
EPID:6600 Epidemiology of Chronic Diseases 3 s.h.
EPID:6630 Epidemiology of Reproductive Diseases 2 s.h.
EPID:6640 Epidemiology of Maternal and Infant Health 2 s.h.
EPID:6650 Cardiovascular Disease Epidemiology 3 s.h.
EPID:6670/PSYC:8267 Psychiatric Epidemiology 3 s.h.
EPID:6700 Cancer Epidemiology and Control 3 s.h.
EPID:6900 Design of Intervention and Clinical Trials 3 s.h.
EPID:6910 Pharmacoepidemiology 3 s.h.
EPLS:5165/PSQF:5165 Introduction to Program and Project Evaluation 3 s.h.
GEOG:3110/GHS:4111 Geography of Health 3 s.h.
HMP:5315 Health Services Information Systems 2-3 s.h.
HMP:5370/IE:5860/GSIP:5200/MED:5300/RSNM:3195/SLIS:5900 Health Informatics I 3 s.h.
HMP:5410 Health Economics I 3 s.h.
HMP:7550 Cost Effectiveness and Decision Analysis 3 s.h.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tr>
<td>HMP:7960/PHAR:7330</td>
<td>Analytic Issues in Health Services Research I</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>HMP:7965/PHAR:7331</td>
<td>Analytic Issues in Health Services Research II</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>IGPI:5210/BME:5252/IE:5870/RSNM:5301</td>
<td>Health Informatics II</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>PCOL:5136</td>
<td>Pharmacogenetics and Pharmacogenomics</td>
<td>1 s.h.</td>
</tr>
<tr>
<td>PHAR:5310</td>
<td>Pharmaceutical Socioeconomics Seminar</td>
<td>1-2 s.h.</td>
</tr>
<tr>
<td>PHAR:5350</td>
<td>Introduction to Research Methods</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>PHAR:6305</td>
<td>Foundation Literature in Pharmaceutical Socioeconomics</td>
<td>arr.</td>
</tr>
<tr>
<td>PHAR:7100</td>
<td>Translational Research and Clinical Drug Development</td>
<td>3 s.h.</td>
</tr>
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</table>
University College

Dean
• Lon D. Moeller

Assistant dean
• Andrew Beckett

Web site: http://uc.uiowa.edu/

University College is home to a wide range of programs for University of Iowa students and precollege students. It includes major college-level programs such as the University of Iowa Honors Program, Study Abroad, Career Center Programs, and study at Iowa Lakeside Laboratory.

University College offers programs leading to the Bachelor of Applied Studies (B.A.S.) degree and the Bachelor of Liberal Studies (B.L.S.) degree. Both programs enable students to complete a bachelor's degree by distance education. The B.A.S., which is designed for graduates of community college technical programs, provides alternatives to traditional academic majors, permitting students to plan their own emphasis areas in consultation with their advisors. The B.L.S. is a general undergraduate degree without a traditional academic major; students work with their advisors to plan study programs that meet their individual objectives.

The college also offers undergraduate certificate programs in clinical and translational science, human rights, leadership studies, nonprofit management, and sustainability. In addition, it is home to summer undergraduate research programs in the STEM fields (science, technology, engineering, and mathematics), microbiology, and medical scientist training.

Some University College programs and courses are designed to smooth entering students' transition to college life, such as College Success Initiatives courses and First-Year Seminars, or to provide opportunities for populations underrepresented in the sciences and engineering, such as Iowa Biosciences Academy.

Lifetime Leisure Skills courses in a broad range of sport and fitness activities are offered through University College, as are special courses for students preparing for work and/or internships at University of Iowa Hospitals and Clinics and students who design web sites for University departments and offices.

The University's Reserve Officer Training Corps programs, Aerospace Studies (Air Force ROTC) and Military Science (Army ROTC), reside in University College.

In addition, University College offers courses in several precollege programs: the Belin-Blank Center for Gifted Education, the Center for Diversity & Enrichment, the Iowa Young Writers' Studio, Project Lead The Way, the Secondary Student Training Program, and University of Iowa Upward Bound.

Courses offered through University College are taught by University of Iowa faculty and staff members.

College-Level Degree Programs
Bachelor of Applied Studies (p. 1192)
Bachelor of Liberal Studies (p. 1195)

College-Level Certificate Programs
Clinical and Translational Science (p. 1206)
Human Rights
Leadership Studies (p. 1216)
Nonprofit Management (p. 1228)
Sustainability (p. 1248)

Other College-Level Programs
Aerospace Studies (Air Force ROTC) (p. 1190)
Career Center Programs (p. 1201)
College Success Initiatives (p. 1208)
Intercollegiate Athletic Participation (p. 1210)
Iowa Biosciences Academy (p. 1211)
Iowa Lakeside Laboratory (p. 1212)
Lifetime Leisure Skills (p. 1221)
Military Science (Army ROTC) (p. 1225)
Patient Care Practicum (p. 1229)
Student Information Technology Skills (p. 1232)
Study Abroad (p. 1233)
Undergraduate Research Experiences (p. 1251)
University Libraries (p. 1253)
University of Iowa Honors Program (p. 1254)

Precollege Programs
Belin-Blank Center for Gifted Education (p. 1199)
Center for Diversity & Enrichment (p. 1205)
Iowa Young Writers' Studio (p. 1215)
Project Lead The Way (p. 1230)
Secondary Student Training Program (p. 1231)
University of Iowa Upward Bound (p. 1259)
Aerospace Studies (Air Force ROTC)

Director

- Lt. Col. Rick A. Spyker

Undergraduate minor: aerospace studies

Faculty: http://www.uiowa.edu/~afrotc/cadre.html

Web site: http://www.uiowa.edu/~afrotc/

The Aerospace Studies Program administers the Air Force Reserve Officer Training Corps (AFROTC) at the University of Iowa. AFROTC prepares highly qualified undergraduate students for commissions as officers in the United States Air Force.

While AFROTC is structured primarily for students pursuing active-duty Air Force commissions, any undergraduate or graduate student may take aerospace studies courses for academic credit, with the exception of the leadership laboratories. The amount of credit that may be applied toward a degree varies from college to college at the University. The College of Liberal Arts and Sciences, for example, accepts a maximum of 20 s.h. of aerospace studies credit. Additionally, any undergraduate student may apply the courses toward the minor in aerospace studies.

In order to receive a commission, AFROTC cadets must complete all University of Iowa degree requirements as well as courses specified by the U.S. Air Force.

Undergraduate and Graduate Programs

AFROTC offers programs lasting three or four years. Joining early gives students the opportunity to try AFROTC without obligation. It also can give them an advantage in the scholarship selection process.

The AFROTC program's three main components are the general military course (GMC), the professional officer course (POC), and field training (FT).

General Military Course

The general military course (GMC) consists of one AFROTC course (1 s.h.) and a leadership laboratory taken each semester for two years. Any student who meets AFROTC qualifications and is in good academic standing is eligible to participate in the GMC. Students normally apply for the GMC up to the time they earn 60 s.h. Students who have earned more than 60 s.h. may enroll in the GMC if they are willing to extend their academic plan by a semester or more.

Professional Officer Course

The professional officer course (POC) consists of one AFROTC course (3 s.h.) and a leadership laboratory taken each semester for two years. Students accepted into the POC make a commitment to serve a minimum of four years as U.S. Air Force officers. To enter the POC, students must be selected to attend and must successfully complete field training. Students generally take the POC during their last 60 s.h.

Field Training

All POC applicants must successfully complete field training at a U.S. Air Force base. Field training is an intensive, three-week program completed the summer after the sophomore year. It provides a first-hand look at the active duty Air Force and develops military leadership and discipline. Students participate in junior officer education, marksmanship, hand-to-hand combat training, and physical fitness training, and expeditionary skills training in a simulated environment. When they complete the program, they are ready to return to school and assume leadership positions in the AFROTC program.

Activities

Students have the option to compete for acceptance to a variety of optional AFROTC summer training programs. They may shadow a junior officer in a career field of interest, or they may compete to attend the Air Force Academy's free-fall parachute, glider, or combat survival schools. Students may return to field training as cadre training assistants, go to the Pentagon to see how the Air Force operates, or travel to a foreign country for a cultural immersion program. The Air Force provides transportation, meals, lodging, and a daily expense allowance for all summer programs.

Throughout the year, students may learn more about the Air Force by choosing to participate in base visits, aircraft orientation rides, a Dining Out (a formal ball in Air Force tradition), and other activities.

The AFROTC Cadet Corps also sponsors community service projects, intramural athletics, and social events, including formal and informal dinners.

Education Delay

Cadets may request an education delay to postpone entry to active duty until after completion of an advanced degree or professional training program.

Undergraduate Program of Study

- Minor in aerospace studies

Minor

The minor in aerospace studies requires a minimum of 16 s.h. in aerospace studies program courses. Students must maintain a g.p.a. of at least 2.50 in all courses for the minor and in all UI courses for the minor. Course work in the minor may not be taken pass/nonpass. In order to count course work taken at other institutions toward the minor, students must have approval from the director of aerospace studies. The minor requires the following course work.

All of these:

AERO:1100 Foundations of the U.S. Air Force I 1 s.h.
AERO:1200 Foundations of the U.S. Air Force II 1 s.h.
AERO:2100 Evolution of USAF Air and Space Power I
AERO:2200 Evolution of USAF Air and Space Power II
AERO:3100 Air Force Leadership Studies I 3 s.h.
AERO:3200 Air Force Leadership Studies II 3 s.h.
AERO:4100 National Security Affairs and Active Duty Preparation I 3 s.h.
AERO:4200 National Security Affairs and Active Duty Preparation II 3 s.h.

Financial Aid

Merit scholarships are available for two and three years of study. They provide varying awards for tuition and fees, a stipend for books, and a tax-free subsistence allowance. Applicants are selected based on objective and subjective factors. Students should apply to the director of aerospace studies.

Nonscholarship cadets in the last two years of AFROTC are eligible for some financial assistance. They receive a tax-free subsistence allowance per month. Uniforms are furnished as well as all books for AFROTC classes.

Courses

Lower-Level Undergraduate

AERO:1100 Foundations of the U.S. Air Force I 1 s.h.
Introduction to U.S. Air Force: military customs and courtesies, basic oral and written communication techniques, careers available to Air Force officers. Requirements: first-year or sophomore standing.

AERO:1150 AFROTC Leadership Laboratory (LLAB) AS 100-FA 1 s.h.
A progression of experiences designed to develop leadership ability; military customs and courtesies, drill and ceremonies, military professional development, the life and work of a junior officer; leadership skills in a practical, supervised military lab setting. Offered fall semesters. Corequisites: AERO:1100. Requirements: first-year or sophomore standing.

AERO:1200 Foundations of the U.S. Air Force II 1 s.h.
Continuation of AERO:1100; leadership theory and practice, team building, diversity in the work force. Requirements: first-year or sophomore standing.

AERO:1250 AFROTC Leadership Laboratory (LLAB) AS 100-SP 1 s.h.
A progression of experiences designed to develop leadership ability; military customs and courtesies, drill and ceremonies, military professional development, the life and work of a junior officer; leadership skills in a practical, supervised military lab setting. Offered spring semesters. Corequisites: AERO:1200. Requirements: first-year or sophomore standing.

AERO:2100 Evolution of USAF Air and Space Power I 1 s.h.
Air power from Civil War hot air balloons through World War II; emphasis on developments in U.S. Air Force.

AERO:2150 AFROTC Leadership Laboratory (LLAB) AS 200-FA 1 s.h.

AERO:2200 Evolution of USAF Air and Space Power II 1 s.h.
Continuation of AERO:2100; air power from post-World War II to present; emphasis on developments in U.S. Air Force.

AERO:2250 AFROTC Leadership Laboratory (LLAB) AS 200-SP 1 s.h.

AERO:2500 Readings in Contemporary Military Issues 1-4 s.h.
Independent research on the U.S. Air Force; historical topics, current missions, future technologies, comparisons to other nations.

Upper-Level Undergraduate and Graduate

AERO:3100 Air Force Leadership Studies I 3 s.h.
Emphasis on management, leadership, communication skills required of an Air Force officer. Requirements: junior or higher standing.

AERO:3150 AFROTC Leadership Laboratory (LLAB) AS 300-FA 1 s.h.

AERO:3200 Air Force Leadership Studies II 3 s.h.
Continuation of AERO:3100; leadership topics in counseling, accountability, ethics. Requirements: junior or higher standing.

AERO:3250 AFROTC Leadership Laboratory (LLAB) AS 300-SP 1 s.h.

AERO:4100 National Security Affairs and Active Duty Preparation I 3 s.h.
America's evolving national security policy; structure of national security agencies, development of national security strategies; global regions and their historical and current importance to U.S. security policies. Requirements: junior or higher standing.

AERO:4150 AFROTC Leadership Laboratory (LLAB) AS 400-FA 1 s.h.

AERO:4200 National Security Affairs and Active Duty Preparation II 3 s.h.
Continuation of AERO:4100; Department of Defense structure, missions, and responsibilities, with emphasis on role of the U.S. Air Force; Air Force standards; preparation for active duty as Air Force junior officers. Requirements: junior or higher standing.

AERO:4250 AFROTC Leadership Laboratory (LLAB) AS 400-SP 1 s.h.
Bachelor of Applied Studies

**Director**
- Anne Zalenski

**Undergraduate major:** Bachelor of Applied Studies (B.A.S.)
**Web site:** http://distance.uiowa.edu/bas

**Undergraduate Program of Study**
- Bachelor of Applied Studies

The Bachelor of Applied Studies (B.A.S.) is designed for graduates of community colleges who wish to complete a bachelor's degree by distance education. The B.A.S. is a general undergraduate degree without a traditional academic major, but students have the option to include a certificate or an emphasis area in their program or to design an individual program. B.A.S. students may not earn minors.

Working with their academic advisors, B.A.S. students may plan programs designed to advance their careers, begin new careers, or prepare for graduate or professional study. Students who have specific career goals or advanced degree programs in mind should learn what educational background they will need in order to achieve their goals, and they should include appropriate course work in their B.A.S. programs.

Students may earn credit toward the degree through several types of courses, including web-based guided independent study courses, semester-based online courses, extension courses at sites throughout Iowa, and regular session courses.

Individuals interested in applying to the B.A.S. program should hold an A.A.A, an A.A.S., an A.A., or an A.S. degree; see "Admission" below for more detailed admission requirements.

The B.A.S. is awarded by University College and is administered by the Division of Continuing Education.

**Bachelor of Applied Studies**

The Bachelor of Applied Studies requires a minimum of 120 s.h. and is intended to be completed entirely by distance education. Students must earn at least 30 s.h. of credit toward the degree in University of Iowa courses after admission to the B.A.S. program. They must earn at least 60 s.h. of the minimum 120 s.h. at four-year colleges, including 45 s.h. in upper-level courses.

University of Iowa upper-level courses are numbered between 3000 and 4999. Some courses numbered below 3000 may be considered upper level for the B.A.S.; for a list of these courses, refer to Upper-Level Requirements on the Bachelor of Applied Studies web site.

Students also must complete the following core requirements and a set of distribution areas; see BAS Core Requirements and Distribution Areas on the Bachelor of Applied Studies web site for more information.

**CORE REQUIREMENTS**
- Rhetoric course work equivalent to composition II and speech
- Quantitative or formal reasoning—3 s.h.
- Social sciences—3 s.h.
- Values, society, and diversity—3 s.h.
- Business/management—6 s.h.

**DISTRIBUTION AREAS**

Students must complete 12 s.h. in three of the following five distribution areas (total of 36 s.h.). In each distribution area, 6 of the required 12 s.h. must be earned in upper-level courses.

- Communication and arts (e.g., journalism, speech, drama, art, music)
- Humanities (e.g., literature, history, philosophy, religion)
- Natural sciences and mathematics (e.g., geology, biology, statistics, computer science)
- Professional fields (e.g., business, education, nursing, social work, library science)
- Social sciences (e.g., geography, psychology, economics, political science, anthropology)

Students must maintain a cumulative g.p.a. of 2.00 or higher in all course work attempted, all course work taken at the University of Iowa, all course work taken after admission to the Bachelor of Applied Studies program, and all upper-level course work.

All University College policies regarding grading, course drops, withdrawals, academic standards, and so forth apply to B.A.S. students. Consult the University College student academic manual for more information.

**Optional Certificate or Emphasis Area**

Students may include a certificate or an emphasis area in their B.A.S. programs. Certificates and emphasis areas are noted on students' transcripts.

**CERTIFICATE IN ENTREPRENEURIAL MANAGEMENT**

The Certificate in Entrepreneurial Management is offered by the Tippie College of Business. It requires a minimum of 18 s.h. Courses are offered online. See Entrepreneurial Management (p. 673) (Tippie College of Business) in the Catalog or contact the Tippie College of Business for details.

**CERTIFICATE IN NONPROFIT MANAGEMENT**

The Certificate in Nonprofit Management is offered by University College in collaboration with Distance Education and the Larned A. Waterman Iowa Nonprofit Resource Center. The certificate requires a minimum of 18 s.h. Courses are offered primarily online. See Nonprofit Management (p. 1228) (University College) in the Catalog or contact the Division of Continuing Education for details.

**CERTIFICATE IN PUBLIC HEALTH**

The Certificate in Public Health (p. 1151) is offered by the College of Public Health and is designed primarily for individuals working in public health practice and for those considering public health careers. The certificate requires 12 s.h. Courses are offered online. Applicants must have substantial relevant work experience. Contact the College of Public Health for details.
CREATIVE WRITING EMPHASIS AREA
The creative writing emphasis area requires 18 s.h. It provides students with an understanding of the multiple facets of written communication. The emphasis area requires the following course work.

All of these:
- CLSA:3742 Word Power: Building English Vocabulary 3 s.h.
- CW:2100 Creative Writing 3 s.h.
- CW:4897 Novel Writing 3 s.h.

At least three of these:
- CLSA:3743 Word Power II: Building English Vocabulary—Advanced 3 s.h.
- CNW:2680 The Art and Craft of Creative Nonfiction 3 s.h.
- CW:2870 Fiction Writing 3 s.h.
- CW:2875 Poetry Writing 3 s.h.
- CW:3870 Advanced Fiction Writing 3 s.h.
- CW:3875 Advanced Poetry Writing 3 s.h.
- THTR:2301 Playwriting I 3 s.h.
- THTR:3301 Playwriting II 3 s.h.
- WRIT:1500 Writing Commons: A Community of Writers 1-3 s.h.

For additional details about the emphasis area and related careers, see the Creative Writing Emphasis page on the Bachelor of Applied Studies web site.

HUMAN RELATIONS EMPHASIS AREA
The human relations emphasis area requires 18 s.h. It focuses on human development, personality theory, interpersonal and group communication, multiculturalism, professional ethics, and the development of helping skills. The emphasis area requires the following course work.

All of these:
- RCE:4194 Interpersonal Effectiveness 3 s.h.
- RCE:4197 Citizenship in a Multicultural Society 3 s.h.
- RCE:4199 Counseling for Related Professions 3 s.h.

At least three of these:
- EDTL:3114 Parent-Child Relationships 3 s.h.
- RCE:4131 Loss, Death, and Bereavement 3 s.h.
- RCE:4162 Introduction to Couple and Family Therapy 3 s.h.
- RCE:4174 Positive Psychology 3 s.h.
- RCE:4176 Child Abuse: Assessment, Intervention, and Advocacy 3 s.h.
- RCE:4178 Microcounseling 1-3 s.h.
- RCE:4179 Sexuality Within the Helping Professions 3 s.h.
- RCE:4185 Introduction to Substance Abuse 3 s.h.
- RCE:4191 Advocacy: Awareness, Assertiveness, and Activism arr.
- SSW:3712 Human Sexuality, Diversity, and Society 1-3 s.h.

For additional details about the emphasis area and related careers, see the Human Relations Emphasis page on the Bachelor of Applied Studies web site.

JUSTICE STUDIES EMPHASIS AREA
The justice studies emphasis area requires 18 s.h. It is a good choice for students who hold associate degrees in disciplines such as community service, corrections, criminal justice, law enforcement, police science, or public safety. The emphasis area requires the following course work.

Two of these:
- POLI:3111 American Public Policy 3 s.h.
- PSY:2501 Introduction to Social Psychology 3 s.h.
- RCE:4197 Citizenship in a Multicultural Society 3 s.h.
- SOC:1410 Introduction to Criminology 3 s.h.
- SOC:4225 The Social Psychology of Leadership 3 s.h.

At least four of these:
- POLI:3104 Immigration Politics 3 s.h.
- RCE:4176 Child Abuse: Assessment, Intervention, and Advocacy 3 s.h.
- RCE:4185 Introduction to Substance Abuse 3 s.h.
- RCE:4194 Interpersonal Effectiveness 3 s.h.
- SOC:2430 Comparative Criminal Justice Systems 3 s.h.
- SOC:3416 Race, Crime, and Justice 3 s.h.
- SOC:3450 Criminal Legal System 3 s.h.
- SOC:4450 Juvenile Justice: A Sociolegal Perspective 3 s.h.

For additional details about the emphasis area and related careers, see the Justice Studies Emphasis page on the Bachelor of Applied Studies web site.

POLITICAL SCIENCE EMPHASIS AREA
The political science emphasis area requires 18 s.h. It focuses on the United States' political role in shaping social and public policy worldwide and on the interplay between foreign and domestic politics. The emphasis area requires the following course work.

Two of these:
- POLI:1100 Introduction to American Politics 3 s.h.
- POLI:1200 Introduction to Political Behavior 3 s.h.
- POLI:1400 Introduction to Comparative Politics 3 s.h.
- POLI:1403 Introduction to Politics in the Muslim World 3 s.h.
- POLI:1500 Introduction to International Relations 3 s.h.
- POLI:1501 Introduction to American Foreign Policy 3 s.h.

At least four of these:
- POLI:3100 American State Politics 3 s.h.
- POLI:3102 The U.S. Congress 3 s.h.
- POLI:3104 Immigration Politics 3 s.h.
- POLI:3110 Local Politics 3 s.h.
- POLI:3111 American Public Policy 3 s.h.
- POLI:3116 The Presidency 3 s.h.
- POLI:3118 Interest Groups 3 s.h.
- POLI:3123 State Politics in Iowa 3 s.h.
- POLI:3150 Problems in American Politics 1-3 s.h.
- POLI:3504 Globalization 3 s.h.
For additional details about the emphasis area and related careers, see the Political Science Emphasis page on the Bachelor of Applied Studies web site.

**Admission**

Individuals who wish to earn a B.A.S. must apply formally for admission to the program by completing an application through the Office of Admissions. Additional information on the B.A.S. program may be found on the Bachelor of Applied Studies web site.

Applicants to the B.A.S. program must have earned an Associate of Applied Arts (A.A.A.), an Associate of Applied Science (A.A.S.), an Associate of Arts (A.A.), or an Associate of Science (A.S.) degree from a regionally accredited institution. They must have a minimum of 60 s.h. of approved transfer credit, which includes career-technical credit.

Students who have an A.A. degree from a two-year institution participating in articulation agreements with the University of Iowa are considered to have satisfied the B.A.S. core requirements, except for “business/management.”

Applicants who graduated from an Iowa community college or Waldorf College must have a cumulative g.p.a. of at least 2.00; those who graduated from Black Hawk College in Illinois must have a cumulative g.p.a. of at least 2.25; those who graduated from other institutions outside Iowa must have a cumulative g.p.a. of at least 2.50.
Bachelor of Liberal Studies

Director
• Anne Zalenski

Undergraduate major: Bachelor of Liberal Studies (B.L.S.)
Web site: http://distance.uiowa.edu/bls

Undergraduate Program of Study
• Bachelor of Liberal Studies

The Bachelor of Liberal Studies (B.L.S.) is designed for students who have earned college credit at a regionally accredited institution and would like to complete a bachelor's degree by distance education. The degree may be completed completely online or through a combination of on-site and online course work.

The B.L.S. emphasizes workplace and leadership skills.

In addition to completing the Bachelor of Liberal Studies, students may earn undergraduate certificates offered by the University of Iowa. They may not enroll in a second college at the University of Iowa while completing the B.L.S. degree.

The B.L.S. is awarded by University College.

All University College policies regarding grading, course drops, withdrawals, academic standards, and so forth apply to B.L.S. students. Consult the University College student academic manual for more information.

Bachelor of Liberal Studies

The Bachelor of Liberal Studies requires a minimum of 120 s.h. of credit. Students must earn at least 30 s.h. of credit toward the degree in University of Iowa courses after they are admitted to the B.L.S. program. They must earn at least 60 s.h. of the 120 s.h. (minimum) required for the B.L.S. at four-year colleges, including 30 s.h. in upper-level courses. University of Iowa upper-level courses are numbered from 3000 to 4999.

B.L.S. students must complete a required set of common core courses and a B.L.S. track, as part of the 120 s.h. (minimum) required for the degree. Students must maintain a g.p.a. of at least 2.00 in all courses for the degree, all UI courses for the degree, and all courses for the B.L.S. track.

The following course work is required for all B.L.S. students.

B.L.S. COMMON CORE

Common core courses develop fundamental skills in writing, critical thinking, information literacy, and leadership and give students the opportunity to explore ideas from multiple perspectives.

Some courses in the common core are part of the College of Liberal Arts and Sciences (CLAS) General Education Program (p. 313), as indicated below.

Rhetoric

Rhetoric courses help students develop speaking, writing, listening, and critical reading skills. Courses approved for the Rhetoric area of the CLAS General Education Program satisfy the B.L.S. rhetoric requirement. The following course is offered by distance education.

RHET:1030 Rhetoric 4-5 s.h.

Interpretation of Literature

This area, which focuses on the major genres of literature, improves students' abilities to read and analyze a variety of texts. Students must complete one approved course (3 s.h.) in this area. They may use any 3 s.h. course approved for the Interpretation of Literature area of the CLAS General Education Program. The following course is offered by distance education.

ENGL:1200 The Interpretation of Literature 3 s.h.

Natural Sciences

Natural sciences courses explore the scope and major concepts of a scientific discipline. Students must complete one approved course (3 s.h.) in this area. They may use any 3 s.h. course approved for the Natural Sciences area of the CLAS General Education Program, including the following courses offered by distance education.

HHP:1100 Human Anatomy 3 s.h.
HHP:2310 Nutrition and Health 3 s.h.

Students also may use this distance education course, which is not part of the CLAS General Education Program, to fulfill the B.L.S. natural science requirement.

ENGR:2013 Introduction to Sustainability 3 s.h.

Global Perspectives

Global perspectives courses encourage students to understand issues from an international perspective. Students must complete one approved course (3 s.h.) in this area. They may use any 3 s.h. course approved for the International and Global Issues area of the CLAS General Education Program, including the following courses offered by distance education.

ANTH:2100 Anthropology and Contemporary World Problems 3 s.h.
ANTH:2261 Human Impacts on the Environment 3 s.h.
ARTH:1040 Arts of Africa 3 s.h.
HIST:2403 Western Civilization III 3 s.h.
POLI:1500 Introduction to International Relations 3 s.h.
POLI:1501 Introduction to American Foreign Policy 3 s.h.
RELS:1130 Introduction to Islamic Civilization 3 s.h.
RELS:2852/GWSS:2052 Women in Islam and the Middle East 3 s.h.

Students also may use one of these distance education courses, which are not part of the CLAS General Education Program, to satisfy the B.L.S. global perspectives requirement.

POLI:3503 Politics of Terrorism 3 s.h.
POLI:3550 Problems of International Politics 3 s.h.
RELS:3105 The World of the Old Testament 3 s.h.

Domestic Diversity

Students must complete one approved course (3 s.h.) that addresses diversity and domestic perspectives on current issues. They may use any 3 s.h. course approved for the
Values, Society, and Diversity area of the CLAS General Education Program, including the following courses offered by distance education.

AMST:2165/AINS:2165/ANTH:2165 Native Peoples of North America 3 s.h.
GWSS:1310/SOC:1310 Gender and Society 3-4 s.h.
HHP:2200 Physical Activity and Health 3 s.h.
REL:S1130 Introduction to Islamic Civilization 3 s.h.
REL:S1903 Quest for Human Destiny 3 s.h.
REL:S2852/GWSS:2052 Women in Islam and the Middle East 3 s.h.
REL:S2986 Religion and Women 3 s.h.
SOC:2810 Social Inequality 3 s.h.
SOC:3710 The American Family 3 s.h.
SRM:1045 Health for Living 3 s.h.
SRM:1072 Leisure and the Liberal Arts 3 s.h.

Students also may use one of these distance education courses, which are not part of the CLAS General Education Program, to satisfy the B.L.S. domestic diversity requirement.

AMST:1075 American Popular Music 3 s.h.
GWSS:3154/HIST:3254 Sexuality in the United States 3 s.h.
RCE:4187/EDTL:4987 Introduction to Assistive Technology 3 s.h.
RCE:4197 Citizenship in a Multicultural Society 3 s.h.
SOC:1020 Social Problems 3-4 s.h.
SOC:2430 Comparative Criminal Justice Systems 3 s.h.
SSW:3712/NURS:3712 Human Sexuality, Diversity, and Society 3 s.h.
TR:3174 Cultural Perspectives in Health Care 3 s.h.

Statistics
Students must complete one approved statistics course (3 s.h.). They may use any 3 s.h. course offered by the Department of Statistics and Actuarial Science with the prefix STAT except STAT:1000 First-Year Seminar. The following distance education courses are approved for the B.L.S. statistics requirement.

STAT:1020/PSQF:1020 Elementary Statistics and Inference 3 s.h.
STAT:4143/PSQF:4143 Introduction to Statistical Methods 3 s.h.

Information Literacy
Students must complete one approved course (2-3 s.h.) focusing on information literacy. The following course is offered by distance education.

MSCI:1500 Business Computing Essentials 2 s.h.

Students also may use one of these courses, which are not offered by distance education, to satisfy the B.L.S. information literacy requirement.

CS:1020 Principles of Computing 3 s.h.
CS:1110 Introduction to Computer Science 3 s.h.

Critical Thinking
Students must complete one approved course (3 s.h.) focusing on critical thinking. The following courses are offered by distance education.

HHP:1030 Introduction to Critical Thinking 3 s.h.
JMC:3115 Solving Communication Problems 3 s.h.

Students also may use one of these courses, which are not offered by distance education, to satisfy the B.L.S. critical thinking requirement.

LING:1050 Language and Formal Reasoning 3 s.h.
PHIL:1033 The Meaning of Life 3 s.h.
PHIL:1034 Liberty and the Pursuit of Happiness 3 s.h.
PHIL:1401 Matters of Life and Death 3 s.h.
PHIL:1636 Principles of Reasoning: Argument and Debate 3 s.h.

Leadership and Career Development
Students must complete two or more approved courses (total of 6 s.h.) focusing on leadership and career development, chosen from the following list of distance education courses.

CCP:1304 "Suit Camp" for the Job Search 1 s.h.
CCP:1305 Social Media for Your Job Search 1 s.h.
CCP:2001 Graduate Admissions 101 1 s.h.
CCP:3102 Job Search Strategies 2-3 s.h.
CLAS:1600 Life Design: Building Your Future 1 s.h.
COMM:1819 Organizational Leadership 2-3 s.h.
ENTR:1350 Foundations in Entrepreneurship 2 s.h.
LS:3012 Leadership Theory to Practice 3 s.h.
PSY:2910 Industrial/Organizational Psychology 3 s.h.
RCE:2081 Job Search Strategies 2-3 s.h.
RCE:4194 Interpersonal Effectiveness 3 s.h.
RCE:4197 Citizenship in a Multicultural Society 3 s.h.
SOC:4225 The Social Psychology of Leadership 3 s.h.

B.L.S. Track
B.L.S. students must complete one of the following tracks.

HEALTH AND HUMAN STUDIES TRACK
This track provides a foundation in the health sciences with a focus on social aspects of health care. It draws from courses in psychological and brain sciences and rehabilitation and counselor education. The track requires 12 s.h. of foundation course work and 18 s.h. of upper-level course work (courses numbered 3000 or above) offered by distance education.

Foundation course work—12 s.h. from these:

HHP:1100 Human Anatomy 3 s.h.
HHP:2130 Human Development Through the Life Span 3 s.h.
HHP:2200 Physical Activity and Health 3 s.h.
HHP:2310 Nutrition and Health 3 s.h.
PSY:1001 Elementary Psychology 3 s.h.

This course is also offered by distance learning.

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Foundation course work—12 s.h. from these:

- PSY:2501 Introduction to Social Psychology 3 s.h.
- PSY:2701 Biological Psychology 4 s.h.
- PSY:2910 Industrial/Organizational Psychology 3 s.h.
- SPAN:1504 Spanish for Healthcare Providers 3 s.h.
- STAT:1020/PSQF:1020 Elementary Statistics and Inference 3 s.h.

Upper-level course work—18 s.h. from these:

- ASP:3150 Psychology of Aging 3 s.h.
- ASP:3160 Biology of Aging 3 s.h.
- BIOC:3110 Biochemistry 3 s.h.
- CLSA:3750 Medical and Technical Terminology 3 s.h.
- HHP:3020/INTD:3027 Nutrition for Health, Fitness, and Sport 3 s.h.
- HHP:3050 Obesity: Causes, Consequences, Prevention, and Treatment 3 s.h.
- HHP:4440 Physiology of Nutrition 3 s.h.
- NURS:3736 Legal Issues for Health Care Providers 3 s.h.
- NURS:3740/ASP:3740/MED:3740/PHAR:3740 End-of-Life Care for Adults and Families 3 s.h.
- PSY:3010 Health Psychology 3 s.h.
- PSY:3320 Abnormal Psychology 3 s.h.
- PSY:3330 Childhood Psychopathology 3 s.h.
- PSY:3340 Behavior Modification 3 s.h.
- PSY:3620 Human Memory 3 s.h.
- RCE:4131 Loss, Death, and Bereavement 3 s.h.
- RCE:4173 Trauma Across the Lifespan 3 s.h.
- RCE:4174 Positive Psychology 3 s.h.
- RCE:4179 Sexuality Within the Helping Professions 3 s.h.
- RCE:4185 Introduction to Substance Abuse 3 s.h.
- RCE:4187/EDTL:4987 Introduction to Assistive Technology 3 s.h.
- SOC:4225 The Social Psychology of Leadership 3 s.h.
- STAT:4143/PSQF:4143 Introduction to Statistical Methods 3 s.h.
- TR:3171 Child Life Practical Application 3 s.h.
- TR:3174 Cultural Perspectives in Health Care 3 s.h.

**GLOBAL STUDIES TRACK**

This track enables students to understand global issues and perspectives. The track requires the world language component, 6 s.h. of foundation course work, and 18 s.h. of upper-level course work (courses numbered 3000 or above). Required course work for the world language component depends on the individual student's preparation; one year of a world language in high school is equivalent to one semester of a world language in college.

World language component—one of these:

- Fourth semester proficiency in a single world language
- Second semester proficiency in two different world languages

Foundation course work—6 s.h. from these offered by distance education:

- ANTH:2100 Anthropology and Contemporary World Problems 3 s.h.
- ANTH:2220 Archaeology of Mesoamerica 3 s.h.
- ANTH:2261 Human Impacts on the Environment 3 s.h.
- ARTH:1040 Arts of Africa 3 s.h.
- ECON:1200 Principles of Macroeconomics 4 s.h.
- ENGR:2013 Introduction to Sustainability arr.
- HIST:2403 Western Civilization III 3-4 s.h.
- HRTS:2115/IS:2115 Introduction to Human Rights 3 s.h.
- JMC:3115 Solving Communication Problems 3 s.h.
- MSCI:3000 Operations Management 3 s.h.
- MSCI:3005 Information Systems 3 s.h.
- MSCI:3600/MGMT:3600/NURS:3600/RELS:3701 Nonprofit Organizational Effectiveness II 3 s.h.
- SRM:3154 Foundations of Event Management 3 s.h.
- SRM:3158 Sport and Recreation Promotion 3 s.h.
- TR:3171 Child Life Practical Application 3 s.h.
- TR:3174 Cultural Perspectives in Health Care 3 s.h.
Bachelor of Liberal Studies

SOC:2430 Comparative Criminal Justice Systems  3 s.h.
STAT:1020/PSQF:1020 Elementary Statistics and Inference  3 s.h.

Upper-level course work—18 s.h. from these offered by distance education:

ANTH:3275/CLSA:3596 The Archaeology of Ancient Egypt  3 s.h.
ANTH:4205 Rise of Ancient Civilization  3 s.h.
ENTR:4460 Entrepreneurship and Global Trade  3 s.h.
GHS:3050/ASP:3135/SSW:3135 Global Aging  3 s.h.
OEH:4240 Global Environmental Health  3 s.h.
POLI:3104 Immigration Politics  3 s.h.
POLI:3503 Politics of Terrorism  3 s.h.
POLI:3512 International Conflict  3 s.h.
POLI:3550 Problems of International Politics  3 s.h.
RCE:4194 Interpersonal Effectiveness  3 s.h.
RCE:4197 Citizenship in a Multicultural Society  3 s.h.
RELS:3105 The World of the Old Testament  3 s.h.
SOC:4225 The Social Psychology of Leadership  3 s.h.
SSW:3785/ASP:3785 Social Policy and the Elderly  3 s.h.
SSW:4843 Social Welfare Policy and Practice  3 s.h.
STAT:4143/PSQF:4143 Introduction to Statistical Methods  3 s.h.
TR:3174 Cultural Perspectives in Health Care  3 s.h.

Admission

Individuals who would like to earn the Bachelor of Liberal Studies degree must apply for admission to the program.

Applicants to the B.L.S. program must meet one of the following sets of requirements:

- they must have been granted a high school diploma at least three years before being admitted to the B.L.S. program, and they must have at least 24 s.h. of graded college-level transfer credit with a g.p.a. of 2.00 or higher; or
- they must hold an Associate of Applied Studies (A.A.S.), Associate of Science (A.S.), or Associate of Arts (A.A.) degree with a g.p.a. of 2.00 or higher for all college-level transfer credit.
Belin-Blank Center for Gifted Education

Director

• Susan Assouline

Web site: http://www.education.uiowa.edu/centers/belinblank/

The Connie Belin & Jacqueline N. Blank International Center for Gifted Education and Talent Development is dedicated to serving the needs of the gifted community at local, national, and international levels. It offers programs for preservice and inservice educators, including the State of Iowa Talented and Gifted Endorsement. Its online and on-campus courses and workshops provide the professional development of educators worldwide.

The center is home to the Assessment and Counseling Clinic, the Acceleration Institute, and the National Institute for Twice Exceptionality. The center also administers the College of Education's Honors Opportunity Program, through which qualified undergraduate students in education work toward graduation with collegiate honors.

For more information about the center and its programs, contact the Belin-Blank Center or visit its web site.

Precollege Programs

The Belin-Blank Center offers a wide variety of programs for precollege students. The Exceptional Student Talent Search (grades 2-9) helps determine talented students' academic abilities and needs. Outreach programs include Invent Iowa (grades K-12), which encourages students to think about and solve problems through invention, and Scholastic Art and Writing Awards (grades 7-12), which recognize achievement in the literary and visual arts.

The Junior Science and Humanities Symposium (grades 9-12) engages students in original research and experimentation in the STEM fields (science, technology, engineering, and math). Students present the results of their research to a panel of judges and an audience of their peers at the Iowa Regional Junior Science and Humanities Symposium. The top two presenters are invited to present at the national symposium.

Early Entrance to Iowa (grade 12) gives high-achieving students the opportunity to enroll at the University of Iowa before they finish high school. To enter the program, students must have completed grade 11 or the equivalent. The program is open to high-ability students worldwide.

The center's academic year nonresidential programs include Challenge Saturdays (grades 3-8), which offers half-day Saturday classes in Iowa City and in Des Moines, Iowa, for high-ability students and for Belin-Blank Exceptional Student Talent Search members; and the Weekend Institute for Gifted Students (grades 3-8), which offers three-hour Saturday classes in Iowa City for high-ability students. Blast (formally CHESS, grades 2-6) is a nonresidential summer program for Belin-Blank Exceptional Student Talent Search members that offers two weeks of half-day classes in Iowa City and Ankeny, Iowa.

The Belin-Blank Center also offers the following residential programs, which are held on the University of Iowa campus during summer. Students in each program participate in cultural and recreational activities and have access to the University's libraries, computer facilities, and study areas. Housing and meals are provided at the University's residence halls.

Blank Summer Institute

The Blank Summer Institute for the Arts & Sciences (BSI) is a one-week program that provides an intensive, advanced educational experience designed to enhance exceptionally talented students' intellectual and social growth. The BSI study plan complements the regular school curriculum. Students choose one of eight courses that explore advanced science, math problem solving, social sciences, creative writing, invention and innovation, visual arts, performing arts, and global and cultural studies.

To be eligible for BSI, students must be Iowa residents, must be completing grade 7 or 8, and must be nominated by their schools. Students selected for BSI receive a Myron and Jacqueline Blank Summer Scholarship to cover part of the institute's cost.

Junior Scholars Institute

The Junior Scholars Institute (JSI) is a one-week program in which students take a single advanced course for the entire week. Students choose from courses on subjects ranging from creative writing to engineering to the arts.

JSI is open to students from around the world. To be eligible, students must be completing grade 6, 7, or 8. They may nominate themselves and must submit a nomination packet. Students selected for JSI receive a scholarship to cover part of the institute's cost.

National Scholars Institute

The National Scholars Institute (NSI) is a one-week program that provides an advanced educational experience designed to enhance the development of talent. Students enroll in one advanced-level course, choosing from math, science, visual arts, creative writing, leadership, and other subjects.

NSI is open to students from around the world. To be eligible for the institute, students must be completing grade 9, 10, or 11 and must submit a nomination packet. Students selected for the institute receive a scholarship to cover part of the institute's cost.

Secondary Student Training Program

Students in grades 10-11 may nominate themselves for the Secondary Student Training Program (p. 1231) (SSTP), a five-week residential summer research program at the University of Iowa. SSTP students conduct scientific research in University laboratories under the guidance of a faculty mentor. Students earn 3 s.h. of academic credit. Visit the SSTP web site to learn more about the program, including eligibility and application.

World Languages Institute

The World Languages Institute (WLI) is a two-day intensive language program that prepares secondary school students for advanced placement program exams in Spanish, Chinese, French, and Japanese. Designed by the Belin-Blank Center and the University of Iowa's Division of World Languages, Literatures, and Cultures (p. 228),
the institute enables students to enhance their language skills in a setting that nurtures a sense of community with learners who share similar interests and goals.
Career Center Programs

Director

- David Baumgartner

**Web site:** http://careers.uiowa.edu/

The University of Iowa Marvin A. and Rose Lee Pomerantz Career Center administers the University's Career Center Programs. The center helps students explore and plan careers, search for employment and internship opportunities, and prepare for interviews. Students may use the Pomerantz Career Center's services at any time during their academic careers, but the center encourages entering first-year and transfer students to visit after they arrive on campus and to make use of all of the center's services throughout their study at Iowa.

The center offers online workshops throughout the year on a variety of topics, including résumé writing, job and internship search techniques, employer research, interviewing skills, and more. It hosts several career fairs each fall and spring, offering students the opportunity to talk with and learn about prospective employers.

The Pearson Library contains career-related books, periodicals, and online resources—some broad in scope, others targeted to specific careers or jobs. Employer recruiting brochures join information on salaries, geographical cost of living, resources for jobs and internships, graduate schools, and other topics.

The Pomerantz Career Center facilitates job and internship interviewing with a wide range of employers: regional, national, and international; profit and nonprofit; state and federal government. Employers conduct on-campus interviews at specific times during the year, and many post immediate openings year-round for internships and for full-time positions. On-campus recruiting and job postings are available on the center's web site. The center also offers career-related courses.

The center helps students find internships in Iowa, the Midwest, nationwide, and sometimes in other countries. For a list of discipline-related internships (all require course registration), see "Internships" under "Courses" below.

For more information about the center's services and facilities, contact the Pomerantz Career Center.

Professional Development Courses

Professional development courses give students the opportunity to engage in practical, hands-on, skills-based instruction relevant to careers and leadership development. The topics and curricula for the following courses incorporate input from employers, who were surveyed about their experiences, real-world examples, guidance, and the skills they most often seek when hiring new graduates.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CCP:1301</td>
<td>Communication for the Workplace</td>
<td>1 s.h.</td>
</tr>
<tr>
<td>CCP:1302</td>
<td>Office Etiquette for the Workplace</td>
<td>1 s.h.</td>
</tr>
<tr>
<td>CCP:1303</td>
<td>Successful Teamwork for the Workplace</td>
<td>1 s.h.</td>
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<tr>
<td>CCP:1304</td>
<td>&quot;Suit Camp&quot; for the Job Search</td>
<td>1 s.h.</td>
</tr>
<tr>
<td>CCP:1305</td>
<td>Social Media for Your Job Search</td>
<td>1 s.h.</td>
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</tbody>
</table>

Courses

**Career Exploration, Lower-Level Undergraduate**

**CCP:1069 Military-to-Civilian Career Exploration**

Increase service and veteran members' awareness of skills for employment and of personal qualities when hired; improve student's ability to choose career that is right for them through self-discovery and research; focus on role of personal interest, skills, and aptitudes in attaining and succeeding in given career pursuits; use and interpretation of career-related assessment inventories, how this information can lead to job and career satisfaction.

**CCP:1300 Career Exploration**

Helps students identify their interests, skills, and values relative to majors and careers; self-assessment, information interviews, research on majors and careers, site visits.

**CCP:1301 Communication for the Workplace**

How effective verbal and written communication is utilized in the workplace; how email and social media communication is used at work; appropriate ways to utilize assertiveness skills; development of refined presentation skills necessary for the workplace; hands-on, skills-based learning environment. Requirements: sophomore or higher standing.

**CCP:1302 Office Etiquette for the Workplace**

How professionalism and work ethic is demonstrated in the workplace; time management and organization skills relevant to full-time employment; succeeding in multigenerational workplaces; hands-on, skills-based learning environment. Requirements: sophomore or higher standing.

**CCP:1303 Successful Teamwork for the Workplace**

Demonstration of problem solving and self-awareness skills relevant to the workplace; application of listening and critical thinking skills; how to perform with a global mindset in the workplace; hands-on, skills-based learning environment. Requirements: sophomore or higher standing.

**CCP:1304 "Suit Camp" for the Job Search**

Basic needs for finding full-time employment; creating and polishing a résumé, techniques for interviewing and networking, developing a personal job search plan; "boot camp" style, skills-based experience; for students thinking about graduation and wanting to get serious about a job search. Requirements: sophomore or higher standing.

**CCP:1305 Social Media for Your Job Search**

Effective use of social media for networking as part of preparing for a job search; efficient identification and utilization of online tools (e.g., LinkedIn, Twitter); building a professional online presence; creating a plan for utilizing social networks for an entry-level job search.
Career Center Programs

**CCP:1306 UI STEP—Student to Employed Professional**
1 s.h.
Current employment trends, changes in employer recruitment, and career preparation procedures as undergraduate students; analysis of current employment and University experiences through self-assessment activities; development of a personal action plan to minimize experience gaps; expectations of entry-level employees in résumé, interview, and on-the-job performance; small-group discussion, online discussion boards, assigned readings, education workshops, and action activities. Requirements: student hourly or work-study employment. Recommendations: sophomore or junior standing.

**CCP:2001 Graduate Admissions 101**
1 s.h.
Preparation for graduate school application and admissions process; graduate entrance examinations, how to select a graduate program, graduate school applications and personal statements, securing a graduate assistantship, and graduate school interviews. Recommendations: junior standing or one-to-two years before start of graduate school for an intentional and less stressful application process.

**CCP:2002 International Job Search: Working Abroad**
1 s.h.
Beginner's guide to international employment: how to conduct an international job search, applying and interviewing for work abroad, using the Internet to your advantage, networking domestically, using United States resources in seeking foreign employment, what to expect in the foreign workplace.

**CCP:2003 Preparation for Success in the Workplace**
3 s.h.
Communication, office etiquette, and successful teamwork combined in one course: crucial professional development topics for all majors and disciplines before entering workplace. Requirements: sophomore or higher standing.

**Career Exploration, Upper-Level Undergraduate and Graduate**

**CCP:3101 Advanced Job Search Skills**
2 s.h.
Effective job search skills; coaching and practice to perfect techniques; identification of career goals, strategies, targets; how to network and sell self to employers; exercises, networking events, and direct work with a job coach. Requirements: junior or higher standing.

**CCP:3103 Money Wise: Finances and Your Career Goals**
2 s.h.
How to choose employment benefits when hired, medical and other insurance, investment opportunities (401K, IRAs); how to handle student loan repayment, develop a budget, and manage money.

**CCP:3102 Job Search Strategies**
2-3 s.h.
How to conduct successful job search; résumé development, interviewing, networking, branding, job search strategies; develop career management plan. Requirements: junior, senior, or graduate standing.

**CCP:3104 Defining Your Career Path**
2 s.h.
Transitioning between career fields; understanding personal interests, values, and abilities; methods of researching information on careers; career development models and student preferences in making career-related decisions; preparation for making career-related decisions through participation in class and individual activities; balancing current responsibilities such as finances and family during a career transition. Requirements: 60 s.h. completed.

**Internships, Lower-Level Undergraduate**

Students must register before beginning an internship in order for the internship to be noted on the transcript.

**CCP:1001 Internship in Art**
0 s.h.

**CCP:1002 Internship in Biological Science**
0 s.h.

**CCP:1003 Internship in Communication Sciences and Disorders**
0 s.h.
Prerequisites: CHEM:2220. Requirements: junior standing, completion of 12 s.h. of UI course work, and cumulative g.p.a. of at least 2.75.

**CCP:1004 Internship in Chemistry**
0 s.h.
Recognition of practical work experience and internships.

**CCP:1005 Internship in Liberal Arts and Sciences**
0 s.h.
Recognition of practical work experience and internships.

**CCP:1006 Internship in Business**
0 s.h.
Recognition of practical work experience and internships.

**CCP:1007 Internship in Education**
0 s.h.
Recognition of practical work experience and internships. Requirements: admission to Teacher Education Program for undergraduates.

**CCP:1008 Internship in English**
0 s.h.

**CCP:1009 Internship in French**
0 s.h.

**CCP:1010 Internship in Nursing**
0 s.h.
Recognition of practical work experience and internships. Requirements: admission to College of Nursing.

**CCP:1012 Internship in Geoscience**
0 s.h.
Requirements: cumulative g.p.a. of at least 2.50, g.p.a. in geology courses of at least 3.00, and grade of C or higher in EES:3500.

**CCP:1013 Internship in German**
0 s.h.

**CCP:1015 Internship**
0 s.h.
Recognition of practical work experience and internships.

**CCP:1016 Internship in History**
0 s.h.

**CCP:1019 Internship in Journalism**
0 s.h.

**CCP:1020 Internship in Classics**
0 s.h.
CCP:1022 Internship in Computer Science  0 s.h.  
Prerequisites: CS:2230 and MATH:1550 or MATH:1850. Requirements: 24 s.h. of undergraduate course work.

CCP:1024 Internship in Museum Studies  0 s.h.

CCP:1025 Internship in Music  0 s.h.

CCP:1027 Internship in Health and Human Physiology  0 s.h.  
Requirements: admission to health and human physiology.

CCP:1029 Internship in Physics and Astronomy  0 s.h.

CCP:1030 Internship in Political Science  0 s.h.

CCP:1031 Internship in Psychology  0 s.h.  
Requirements: completion of 12 s.h. of departmental course work.

CCP:1032 Internship in Religious Studies  0 s.h.

CCP:1033 Internship in Literature, Science, and the Arts  0 s.h.

CCP:1034 Internship in Sociology  0 s.h.

CCP:1035 Internship in Spanish  0 s.h.

CCP:1036 Internship in Communication Studies  0 s.h.  
Requirements: declared communication studies major, completion of 12 s.h. of departmental course work, and cumulative g.p.a. of at least 2.50.

CCP:1039 Internship in Asian Languages and Literature  0 s.h.

CCP:1041 Internship in Russian  0 s.h.

CCP:1042 Internship in Social Work  0 s.h.

CCP:1044 Internship in Geography  0 s.h.  
Requirements: sophomore standing, completion of 12 s.h. of departmental course work, and cumulative g.p.a. of at least 2.25.

CCP:1045 Internship in American Studies  0 s.h.

CCP:1048 Internship in Cinema and Comparative Literature  0 s.h.

CCP:1049 Internship in Theatre Arts  0 s.h.

CCP:1061 Internship in Microbiology  0 s.h.

CCP:1062 Internship in Informatics  0 s.h.  
Prerequisites: CS:2110 and (CS:2420 or MSCI:3200). Requirements: 24 s.h. of undergraduate course work.

CCP:1070 Global Internship Preparation  1 s.h.  
Classroom preparation for international summer internship program in Paris, London, Hong Kong, or Madrid; internship goal setting, current event and host city research, reflective learning, and professional development concepts.

CCP:1071 ROTC International Cultural Internship  0 s.h.  
Internship opportunity to develop leaders capable of positive interactions with other cultures and their governments, and who possess the language skills to effectively communicate cultural sensitivities when interacting with American and international media; recent locations include China, Indonesia, Japan, Morocco, Russia, Senegal, Slovakia, Tajikistan, Tanzania, Ghana, Thailand, Botswana, Costa Rica, Czech Republic, and Vietnam. Requirements: ROTC member and Military Science program chair approval.

CCP:1072 Internship in Human Rights  0 s.h.  
Recognition of approved work in human rights arena.

CCP:1091 Internship in Law  0 s.h.  
Recognition of practical work experience and internships.

CCP:1099 Internship in Biochemistry  0 s.h.

CCP:1103 Internship in Linguistics  0 s.h.

CCP:1111 Internship in Anthropology  0 s.h.

CCP:1114 International Internship: Madrid  2 s.h.  
Ten-week program, includes orientation, Spanish language school, and eight-week unpaid internship. Requirements: acceptance to undergraduate internship program in Madrid.

CCP:1115 International Internship: Paris  2 s.h.  
Ten-week program, includes orientation, French language school, and eight-week unpaid internship. Requirements: acceptance to undergraduate internship program in Paris.

CCP:1122 Internship in Mathematics  0 s.h.  
Prerequisites: MATH:1550 or MATH:1850. Requirements: junior standing, completion of 12 s.h. of UI course work, and cumulative g.p.a. of at least 2.75.

CCP:1131 Internship in Gender, Women’s, and Sexuality Studies  0 s.h.

CCP:1137 Internship in Dance  0 s.h.

CCP:1145 Internship in Interdepartmental Studies  0 s.h.

CCP:1153 Internship in Aging Studies  0 s.h.

CCP:1159 Internship in Environmental Sciences  0 s.h.  
Requirements: cumulative g.p.a. of at least 2.50.

CCP:1169 Internship in Leisure Studies  0 s.h.

CCP:1187 Internship in International Studies  0 s.h.

CCP:1188 Internship in Performing Arts  0 s.h.
CCP:1192 Internship in Statistics and Actuarial Science  
0 s.h.  
Requirements: junior standing.

CCP:1193 Internship in Accounting  
0 s.h.  
Requirements: admission to Tippie College of Business and accounting major.

CCP:1194 Internship in Finance  
0 s.h.  
Requirements: admission to Tippie College of Business and finance major.

CCP:1195 Internship in Marketing  
0 s.h.  
Requirements: at least 3.00 g.p.a. in MKTG:3000 and MKTG:3100, admission to Tippie College of Business, and marketing major.

CCP:1196 Internship in Economics  
0 s.h.  
Requirements: economics major.

CCP:1197 Internship in Management and Organizations  
0 s.h.  
Requirements: admission to Tippie College of Business and management and organizations major.

CCP:1198 Internship in Management Information Systems  
0 s.h.  
Requirements: admission to the Tippie College of Business and management sciences major.

CCP:1201 Academic Internship  
1-3 s.h.  
Opportunity for students to expand on internship experiences by developing learning objectives and reflecting on experience; how internship experience relates to academic course work and future career goals. Requirements: secured internship, cumulative g.p.a. of at least 2.00, and completion of 24 s.h. of UI course work (12 s.h. for transfer students).

CCP:1217 Internship in Fundraising and Philanthropy Communication  
0 s.h.  
Supervised experience working with fundraising and development professionals in nonprofit organization. Requirements: sophomore standing and completion of 12 s.h. of UI course work.

CCP:2202 ISSS Academic Internship  
9 s.h.  
Academic credit for full-time internship employment out of area; for international students in the Tippie College of Business. Requirements: F-1 or J-1 visa international student, Tippie College of Business undergraduate standing, minimum 3.50 g.p.a., full-time internship offer letter in hand (at least 40 hours/week and one semester in length), internship approved by International Student and Scholar Services for F-1 Curricular Practical Training (CPT) or J-1 Academic Training (AT), concurrent registration in approved 3 s.h. distance education course, internship work location at least 100 miles from Iowa City, and preapproval of internship by Pomerantz Career Center.

CCP:3021 Internship in Library Science  
0 s.h.

CCP:3169 Internship in Graduate Studies  
0 s.h.  
Recognition of practical work experience and internships. Requirements: admission to Graduate College.

CCP:3170 Internship in Public Health  
0 s.h.  
Recognition of practical work experience and internships. Requirements: admission to the College of Public Health.

CCP:3171 Internship in Biostatistics  
0 s.h.  
Requirements: admission to the College of Public Health.

CCP:3172 Internship in Community and Behavioral Health  
0 s.h.  
Requirements: admission to the College of Public Health.

CCP:3173 Internship in Epidemiology  
0 s.h.  
Requirements: admission to the College of Public Health.

CCP:3174 Internship in Health Management and Policy  
0 s.h.  
Requirements: admission to the College of Public Health.

CCP:3175 Internship in Occupational and Environmental Health  
0 s.h.  
Requirements: admission to the College of Public Health.

Internships, Upper-Level Undergraduate and Graduate
Students must register before beginning an internship in order for the internship to be noted on the transcript.

CCP:2020 Washington Center Internship Program  
arr.  
Internship placements for students in all University of Iowa majors (typical placements include Congress, the White House, the Center for Strategic and International Studies, the U.S. Department of Commerce, the U.S. Department of Defense, the Environmental Protection Agency, CNN, C-SPAN, BET, MCI Center, the Smithsonian Institution, the National Institutes of Health, Amnesty International, the Children's Defense Fund, Mexican Cultural Institute Embassies, the U.S. Marshall's Office, federal courts, law offices, and the U.S. Secret Service); participation in Presidential Lecture Series and Congressional Breakfast Series. Full semester or summer session.

CCP:2021 Washington Center Seminar  
arr.  
Combined classroom instruction, faculty-led discussions, and experiential work opportunities; usually offered in Washington, D.C., occasionally at other locations tied to an event (e.g., political convention); one or two weeks.
Center for Diversity & Enrichment

Interim director

• Willie Fred Mims

Web site: http://diversity.uiowa.edu/office/center-diversity-and-enrichment

The Center for Diversity & Enrichment offers the Iowa First Nations summer program for high school students and the Iowa Edge program for students entering the University of Iowa.

Precollege Program of Study

Iowa First Nations

The Iowa First Nations program enables high school students to explore the educational opportunities offered on the University of Iowa campus and by higher education in general. Iowa First Nations students live on campus for a week (Monday through Friday), spending five nights in one of the University's residence halls. They go on structured field trips to campus departments, participate in hands-on classroom experiences, and take part in activities on campus and in the community.

Undergraduate Program

The Iowa Edge

The Iowa Edge program supports incoming students as they make their transition to the University of Iowa. The program takes place Sunday through Wednesday of the week before fall semester classes begin. Iowa Edge students move into the residence halls early, learn about campus resources, become familiar with the campus setting, and build community with other students. Current UI students serve as Iowa Edge peer leaders, facilitating the program.

Courses

Pre-Lower Level

CDE:0002 Life Science Summer Program 0 s.h.

CDE:0023 Iowa First Nations 0 s.h.

Lower-Level Undergraduate

CDE:2013 Iowa Edge Peer Leader Training 1 s.h.

Preparation for role of Iowa Edge Peer Leader; working with African American, Alaskan Native, American Indian, Asian American, Pacific Islander, Latino/a, and first generation college students; development of leadership, group facilitation, presentation, and peer mentoring skills.
Clinical and Translational Science

Coordinator

• Beth Rydstrom Knudson

Undergraduate certificate: clinical and translational science

Translational science focuses on applying biomedical discoveries to health care. It requires team-based interdisciplinary approaches to move research-generated discoveries into clinical trials and to facilitate the adoption of best practices in clinical and community settings. Investigators in translational science understand principles involved in foundational research and how such research relates to epidemiology, behavioral medicine, and patient-oriented research.

Opportunities for training in translational science are available through graduate and professional study in medicine, public health, nursing, dentistry, pharmacy, and other allied health professions, including biostatistics, behavioral medicine, clinical pharmacology, and epidemiology.

The certificate program in clinical and translational science provides undergraduates with opportunities to connect their research activities to translational science and to begin training in the discipline.

The Certificate in Clinical and Translational Science is presented by the Institute for Clinical and Translational Science and Iowa Biosciences Academy (p. 1211); it is administered by University College.

Undergraduate Program of Study

• Certificate in Clinical and Translational Science

Certificate

The Certificate in Clinical and Translational Science requires 16 s.h. of credit. Students must complete all course work for the certificate within three years of entering the program.

Admission to the certificate program is selective. Applicants must fulfill the following requirements by the end of the semester in which they apply:

- have a cumulative g.p.a. of at least 3.00;
- have earned a minimum of 45 s.h. of college-level credit;
- have been engaged in mentored scientific research at the University of Iowa;
- have completed one of these: BIOL:1411 Foundations of Biology or BIOL:1141 Introductory Animal Biology; and
- have completed one of these: MATH:1380 Calculus and Matrix Algebra for Business or MATH:1460 Calculus for the Biological Sciences or MATH:1550 Engineering Mathematics I: Single Variable Calculus or MATH:1850 Calculus I.

Work for the certificate includes core courses and electives. Students must maintain a g.p.a. of at least 3.00 in the certificate’s core courses.

The Certificate in Clinical and Translational Science requires the following course work.

**CORE COURSES**

All of these (10 s.h.):

- EPID:4400 Epidemiology I: Principles 3 s.h.
- STAT:3510 Biostatistics (or an equivalent course) 3 s.h.
- TBM:3001 Introduction to Translational Research (must take EPID:4400 before or at the same time as this course) 2 s.h.
- TBM:3002 Practicum in Clinical and Translational Science (capstone course; must take TBM:3001 before this course) 2 s.h.

**ELECTIVES**

Students must earn a total of 6 s.h. in courses chosen from the following lists.

**Creative Writing**

CNW:3664 Writing About Science 3 s.h.

**Life Sciences**

- BIOC:3110 Biochemistry 3 s.h.
- BIOC:3120 Biochemistry and Molecular Biology I 3 s.h.
- BIOC:3130 Biochemistry and Molecular Biology II 3 s.h.
- BIOL:2254 Endocrinology 3 s.h.
- BIOL:2723 Cell Biology 3 s.h.
- BIOL:2753 Introduction to Neurobiology 3 s.h.
- BIOL:3233 Introduction to Developmental Biology 3 s.h.
- BIOL:3253 Neurobiology 4 s.h.
- BIOL:3713 Molecular Genetics 4 s.h.
- BIOL:4213 Bioinformatics 4 s.h.
- BIOL:4333 Genes and Development 3 s.h.
- BIOL:4753 Developmental Neurobiology 3 s.h.
- MICR:2157 General Microbiology 5 s.h.
- MICR:3147 Survey of Immunology 3 s.h.

**Global Health**

- GHS:3010 Identifying and Developing a Global Health Project (when subtitle is Research Design in Global Health) 2-3 s.h.
- GHS:3102 Medical Anthropology 3 s.h.
- GHS:3720 Global Health Seminar 3 s.h.
- GHS:4111 Geography of Health 3 s.h.
- GHS:4600 Global Health and Human Rights 2-3 s.h.

**Health and Human Physiology**

- ACB:3110 Principles of Human Anatomy 3 s.h.
- HHP:1100 Human Anatomy 3 s.h.
- HHP:1300 Fundamentals of Human Physiology 3 s.h.
- HHP:2130 Human Development Through the Life Span 3 s.h.
- HHP:2200 Physical Activity and Health 3 s.h.
- HHP:2310 Nutrition and Health 3 s.h.
HHP:3020 Nutrition for Health, Fitness, and Sport 3 s.h.
HHP:3500 Human Physiology 3 s.h.
HHP:3850 Promoting Health Globally 3 s.h.
NURS:1030 Human Development and Behavior 3 s.h.

**Psychological and Brain Sciences**

PSY:2301 Introduction to Clinical Psychology 3 s.h.
PSY:2401 Introduction to Developmental Science 3 s.h.
PSY:2501 Introduction to Social Psychology 3 s.h.
PSY:2601 Introduction to Cognitive Psychology 3 s.h.
PSY:2701 Biological Psychology 4 s.h.
PSY:3010 Health Psychology 3 s.h.

**Public Health**

CBH:4105 Introduction to Health Promotion and Disease Prevention 3 s.h.
CBH:5215 Community Preventive Programs and Services 3 s.h.
HMP:4000 Introduction to the U.S. Health Care System 3 s.h.
MPH:2099 Fundamentals of Public Health 3 s.h.
OEH:3210 Health, Work, and the Environment 3 s.h.
OEH:4210 International Health 3 s.h.
OEH:4240 Global Environmental Health 3 s.h.

**Application**

Interested students should apply on the certificate program's student application system. Deadlines for review of applicants are November 1 and April 1. Applications should include the following:

- a description of the student's undergraduate research (maximum of 1000 words), including the approximate number of hours per week the student spends conducting the research and the name and e-mail address of the student's research mentor;
- a personal statement outlining the student's professional and career goals;
- a copy of the student's grade report from ISIS; and
- a letter of recommendation from the student's research mentor.
College Success Initiatives

Coordinator
- Lisa Ingram

The College Success Initiatives Program is designed to enrich students' experiences at the University of Iowa. The program's courses help first-year and entering students make a successful transition to University life.

The College Success Initiatives Program is administered by the associate provost for undergraduate education. For more information about the program's courses, contact the Academic Advising Center.

Courses

Lower-Level Undergraduate

**CSI:1020 Academic Seminar I**  3 s.h.
Development of knowledge and skills essential for academic success at college level; reading, writing, and communication skills; focus on reading comprehension, class discussion, and development of writing process; various narratives including published collections of essays and peers' texts; writing process and techniques, and components that bring each piece together.

Requirements: IowaLink participant.

**CSI:1021 Academic Seminar II**  3 s.h.
Continued development of knowledge and skills necessary for academic success; reading, writing, and communication skills; experimentation with ethnographic research methods, exploration of cultures and subcultures; writing about findings in various experimental forms, seeing as a model, short ethnographic essays, excerpts from a graphic novel; focus on reading comprehension strategies, class discussion, and development of writing process. Prerequisites: CSI:1020.

Requirements: IowaLink participant.

**CSI:1100 College Transition Seminar**  1 s.h.
College culture, University of Iowa resources, refinement of study skills, test taking, identification of personal values, self-motivation, goal setting; taught in small sections with emphasis on classroom discussion.

Requirements: entering first-year student.

**CSI:1150 College Transition Workshop**  1 s.h.
Preparation for affiliated lecture course; practical context to apply, evaluate, and refine study skills strategies explored in CSI:1100; expand study strategies, enhance grasp of affiliated course material, and apply study skills to future course work. Corequisites: CSI:1100.

Requirements: concurrent enrollment in a CIC affiliated lecture course.

**CSI:1200 First-Year Seminar**  1 s.h.
Introduction to the intellectual life of the University; opportunity to work closely with a faculty member or senior administrator; active participation that eases the transition to college-level learning.

**CSI:1220 Green Adventures: This is What Happens**  1 s.h.
Designed for students of the Green Adventures Living-Learning Community; basic sustainability practices and education; opportunity for experiential education; help students incorporate sustainable practices into daily life and academic, professional, and cocurricular experiences.

**CSI:1230 Exploring Social Justice**  1 s.h.
Definition of social justice; current issues involving social justice at local level and larger macro level; for students in the Justice for All Living-Learning Community (LLC).

**CSI:1240 Well Beings LLC Seminar**  1 s.h.
Knowledge and skills that contribute to personal wellness and success as students; focus on individual as well as environmental aspects that contribute to health and well-being; varied activities, assessments, and programs offered with opportunity for personal reflection; discussion of wellness resources and helping others; for students in Well Beings Living Learning Community (LLC).

**CSI:1250 Introduction to Law Study and Legal Careers**  1 s.h.
Introduction to legal education and careers; exploration of role of law in society, nature of legal education, careers in law, and current legal issues; opportunity for students to begin reflecting on their own interest in this field.

**CSI:1260 Introduction to Health Care Professions**  3 s.h.
Introduction to current U.S. health care system and changes that are likely in the near future; information about distinct health care professions grouped by discipline (e.g., nursing, pharmacy, public health), and less traditional career pathways in health care fields; how health care professionals across disciplines coordinate to deliver better health care; instruction by prominent health care faculty at the University of Iowa; for students considering a career in the health care field.

**CSI:1270 Military-to-College Transition Success**  1 s.h.
Transitioning from military, guard, or reserve status into academia, employment, and other aspects of civilian life; strategies for succeeding in school and at work, including time management, writing ability, and critical thinking; impact of military experiences on success as civilians, particularly as students; vocational skills such as resume writing and interviewing; life issues such as maintaining successful relationships, self-care, and leadership; networking with other military-related students and staff.

**CSI:1300 College Expectations: Safe and Smart**  0 s.h.
Alcohol and sexual violence awareness training.

**CSI:1350 College Expectations for Transfer Students**  0 s.h.
Alcohol and sexual violence awareness training.

**CSI:1400 The Passport Project: Exploring Iowa and Iowa City**  1 s.h.
Attendance and discussion at 12 events of student's choice, selected from the University and Iowa City's rich cultural offerings. Same as ARTS:1400.
CSI:1450 Exploring Iowa and Iowa City: Passport Project Colloquium 1-2 s.h.
Opportunities for peer mentors involved in ARTS:1400 and CSI:1400; activities including short readings and media screenings related to innovative and best practices in learning and teaching; emphasis on multi-modal writing online for peers; informal presentations and reflections; may include work with Passport Projects students, collaboration on development of guidelines and handouts for best practices in writing, and supplemental writing reflections. Same as ARTS:1450.

CSI:1500 College Success Seminar 1 s.h.
Skills, habits, and attitudes essential for college success; self-assessment, goal setting, problem solving, motivation, time management, study skills, preparing for and taking tests; campus resources, including the Pomerantz Career Center, University Counseling Service; emphasis on class participation and completion of assignments related to course topics. Requirements: selected students with first-year standing in the College of Liberal Arts and Sciences.

CSI:1600 Success at Iowa 0-2 s.h.
Skills to help students transition successfully to the University; online tools specific to the University of Iowa, including Iowa Student Information Systems (ISIS) and Iowa Courses Online (ICON); resources for navigating life on campus; financial aid literacy, strategies for making healthy behavior choices, sexual assault awareness and prevention, MAP-Works (a comprehensive transitional survey); series of online modules.

CSI:1700 Online at Iowa 1 s.h.
Web-based introduction to electronic tools and resources at the University of Iowa; web sites, e-mail, databases; how to research courses, register for classes, and review grades; computer security; virtual campus tour.

CSI:1800 Managing Your Money: Personal Finance for College Students 1 s.h.
Introduction to basic concepts and practices for management of resources and prevention of financial problems commonly associated with college, including credit and student loans.

CSI:1900 International at Iowa 1 s.h.
Introduction to immigration and other laws; academic expectations on the University of Iowa campus; cultural adjustment; how to succeed academically; caring for one's mental health; web-based course for new international undergraduate students.

CSI:2100 The Transfer Transition 1 s.h.
Adjustment to university life and academics; strategies for academic success including study and test-taking skills, time management, utilization of campus resources for success in courses; planning a major and learning about Career Center services; exposure to university culture; opportunities to reflect on adjustment to the University. Requirements: entering transfer student standing.

Upper-Level Undergraduate and Graduate

CSI:3110 Global at Iowa 0-1 s.h.
Creation of a learning environment where international and American students are introduced to issues and experiences of the others; international students new to the United States learn about the transition and adjustment period while becoming familiar with campus and American culture, American students are exposed to the sometimes very different cultural backgrounds and perspectives of international students; brief reflection papers, significant in-class discussion, and one or two small group projects.
Intercollegiate Athletic Participation

**Director**
- Elizabeth Tovar

Students who are members of University of Iowa intercollegiate athletics teams and are certified to participate in their sport may register for IAP:1021 Intercollegiate Athletic Participation. First year student-athletes may enroll in IAP:1021 and receive credit for completion of the section entitled athletic transition seminar. Student-athletes who have not previously received credit for the athletic transition seminar section may also enroll in IAP:1021 and receive credit for their sport participation.

Qualified students may receive up to 2 s.h. of credit for IAP:1021. Registration requires approval from the director of Student-Athlete Academic Services. Members of University of Iowa sport clubs are not eligible to enroll in IAP:1021.

**Courses**

**Lower-Level Undergraduate**

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<tr>
<th>Course Code</th>
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<tr>
<td>IAP:1021</td>
<td>Intercollegiate Athletic Participation</td>
<td>1 s.h.</td>
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Iowa Biosciences Academy

**Codirectors**
- Lori Adams (Biology), Vincent G.J. Rodgers (Physics and Astronomy)

**Faculty:** [http://iba.biology.uiowa.edu/people](http://iba.biology.uiowa.edu/people)

**Web site:** [http://iba.biology.uiowa.edu](http://iba.biology.uiowa.edu)

**Undergraduate Program**

Iowa Biosciences Academy (IBA) is a highly competitive undergraduate research and academic enrichment program funded by the National Institutes of Health. The program identifies academically talented undergraduate, underrepresented students who aspire to research careers and gives them first-rate training that facilitates entry into doctoral programs in biomedical, behavioral, and biophysical sciences.

Iowa Biosciences Academy students have opportunities to work in research laboratories with faculty mentors during the course of their undergraduate careers. The program's faculty represents a broad range of disciplines in the basic and biomedical sciences. IBA students also benefit from specialized course work, career counseling, and academic advising for biomedical and bioscience careers.

Students selected for IBA must maintain good standing in academics and research. Good academic standing requires a g.p.a. of at least 3.00 and is evaluated at the end of each semester. Good research standing is determined by each student's research mentor. Students work with their mentors throughout the academic year and summer.

**STUDENTS ACCEPTED FROM HIGH SCHOOL**

Students admitted to IBA from high school spend their first year at the University of Iowa establishing good academic standing and conducting laboratory rotations.

During fall semester, IBA students enroll in IBA:1041 (168:041) IBA Student Development Seminar (1 s.h.), where they explore topics such as college culture, University resources, study skills, test taking, and goal setting.

During spring semester, IBA students again enroll in IBA:1041 (168:041); this semester of the course is designed to help them navigate their laboratory rotations. They also enroll in IBA:3992 (168:100) IBA Research in Biomedical Science (0 s.h.) and complete a research rotation. The rotation, which is set up by IBA staff, introduces students to laboratory research at the University.

Students may choose to remain on campus for the eight-week summer session. They earn pay for their laboratory work with their research mentors and may participate in IBA events. After completing a full year of research experience, each student is evaluated for admission to the IBA Scholar Program. Students who earn admission may continue in IBA throughout the year.

**STUDENTS ACCEPTED FROM COLLEGE**

Applications also are accepted from current University of Iowa undergraduates majoring in the sciences as well as students transferring to Iowa. Students accepted to IBA during their first, second, or third year of college join the appropriate class of IBA scholars. During their first semester of participation, new undergraduates complete lab rotations and establish good academic standing. They also enroll in IBA:1041 (168:041) IBA Student Development Seminar (1 s.h.). Once students are matched with a research mentor, they earn pay for their laboratory work during summer and the academic year. They also enroll in IBA:3992 (168:100) IBA Research in Biomedical Science (0 s.h.).

**Admission**

Students apply to Iowa Biosciences Academy during their senior year of high school or once they are undergraduate students.

Applicants must:
- have a strong interest in pursuing a research career;
- have a qualifying academic major;
- be in good academic standing;
- submit an IBA application, including short essays; and
- submit one letter of recommendation from a science/math instructor or research mentor.

Admission requires an interview. Admission decisions are generally made in March, July, and October.

**Faculty**

Faculty members from the University's broad range of basic and biomedical science disciplines serve as teachers and mentors to IBA students. They represent many departments, including anatomy and cell biology, biochemistry, biology, biomedical engineering, chemistry, health and human physiology, microbiology, molecular physiology and biophysics, neuroscience, nursing, physics, and psychological and brain sciences.

**Courses**

**Lower-Level Undergraduate**

**IBA:1041 IBA Student Development Seminar**

1 s.h.

Academic and professional development; presentations by faculty researchers, admissions representatives, or students in graduate bioscience programs; discussions about succeeding at the University; talks by professional educators on topics such as effective study skills.

**Upper-Level Undergraduate and Graduate**

**IBA:3992 IBA Research in Biomedical Science**

0 s.h.

Registration in a section taught by student's research mentor. Requirements: enrollment in IBA.

**Graduate**

**IBA:5045 Entering Mentoring**

0 s.h.

Process of becoming an effective research mentor; mentoring methods and resolution of mentoring dilemmas; secondhand exposure to the experiences of other mentors; strategies for managing mentoring challenges.
Iowa Lakeside Laboratory

**Associate provost and dean**
- Chet Rzonca

**Associate director, academics and research**
- Michael J. Lannoo (Anatomy and Cell Biology, Indiana University School of Medicine)

Iowa State University participating faculty
- Lori Biederman (Ecology, Evolution, and Organismal Biology), James Colbert (Ecology, Evolution, and Organismal Biology), Mary Harris (Natural Resource Ecology Management)

University of Iowa participating faculty
- John F. Doershuk (Anthropology)

University of Northern Iowa participating faculty
- Kavita Dhanwada (Biology), Laura Jackson (Biology), Mark Meyers (Biology), Daryl D. Smith (Biology)

Web site: [http://www.continuetolearn.uiowa.edu/lakesidelab/](http://www.continuetolearn.uiowa.edu/lakesidelab/)

Iowa Lakeside Laboratory is a field station run cooperatively by the University of Iowa, Iowa State University, and the University of Northern Iowa. Students at all three institutions may take Iowa Lakeside Laboratory courses for credit. They should check with their advisors to determine whether specific courses count toward requirements of their academic majors or minors or toward other requirements.

Iowa Lakeside Laboratory was established in 1909 for the conservation and study of the rich flora and fauna of northwestern Iowa, especially the numerous lakes, wetlands, and prairies of the Iowa Great Lakes region. The campus is located on approximately 140 acres of restored prairie, wetland, and gallery forest along the west shore of West Okoboji Lake. Lakeside’s mission is to provide undergraduate and graduate students an opportunity for hands-on experience in a variety of natural and human environments through its field-oriented summer courses, and to provide research facilities and support for graduate students and faculty members working on research projects in northwestern Iowa.

Each summer Iowa Lakeside Laboratory offers students a unique educational experience—small, inquiry-based, full-immersion, field-oriented courses in the natural sciences (archaeology, botany, ecology, hydrology, soils, zoology) and related areas, such as the health sciences and archaeology. Courses are taught at the sophomore/junior level and the senior/graduate level. Enrollment usually is limited to 10 or fewer students per course. Most courses meet all day Monday through Friday, last four weeks, and offer 1 s.h. of credit for each week (40 clock hours) in class. One- and two-week courses also are available, including courses designed especially for teachers. Weather permitting, students normally spend at least part of each day doing fieldwork, either as part of their class work or for individual or group projects.

Not all courses are offered every year; visit Courses on the Iowa Lakeside Laboratory web site or consult the University of Iowa summer course offerings on ISIS (Iowa Student Information System) to learn which courses will be offered during a particular summer session.

Research projects by undergraduates, graduate students, and faculty members can be completed either on the Iowa Lakeside Laboratory campus or at many nearby natural areas. Undergraduate and graduate students are strongly encouraged to do independent projects at the laboratory, and graduate students are welcome to use Lakeside as a base for their thesis and dissertation research. Laboratory space and other facilities are available for long-term or short-term research projects.

Teaching and research facilities include eight laboratory buildings, a library, and a lecture hall. Living accommodations include cottages, motel-style units, and a large mess hall. All students are encouraged to stay at Lakeside while they are taking courses to derive full advantage of its educational, professional, and social life.

**Registration**

Students may enroll in Iowa Lakeside Laboratory courses only by submitting an Iowa Lakeside Laboratory Registration and Housing Form to the Iowa Lakeside Laboratory administrative office. Information about current courses and housing is available on the Iowa Lakeside Laboratory web site.

Registration usually opens in early January. Enrollment is limited, so students should register early. When they register, they must apply for housing or indicate that they plan to live off campus.

**Financial Support**

Financial support is available for undergraduate and graduate students. The Friends of Lakeside Lab organization provides a merit scholarship that is equivalent to the cost of room and board. Additional financial support may be available from Iowa Lakeside Laboratory and from other sources. Consult the Office of Student Financial Aid for information about support, including work-study and loan programs.

**Courses**

**Lower-Level Undergraduate**

**IALL:1010 Earth, Air, and Sky** 3 s.h.
Essentials of earth science, including astronomy, meteorology, geology, and paleontology; includes laboratory and fieldwork.

**IALL:1030 Natural History Workshop** 1-2 s.h.
A specific aspect of the upper Midwest’s natural history, or techniques for studying natural history; amphibians and reptiles, birds and birding, nature photography, mushrooms and other fungi, Iowa’s trees and forests, fish biology, prairies, common algae, common insects, aquatic plants, life in rivers, life in lakes, mosses and liverworts, natural history of Iowa Great Lakes region, field archaeology, scuba diving, astronomy, nature sketching; five-day, nontechnical introductions.

**IALL:1034 Topics in Ecology and Sustainability** 1-4 s.h.
Scientific introduction to ecology and evolution of important groups of organisms: algae to vertebrates, different ecological phenomena (e.g., fire and climate change), varying landforms, different ecosystems (e.g., prairies and aquatic systems); emphasis on sustainability with introduction to concepts, issues, and practices; ability to communicate environmental information through a variety of means. Requirements: one general biology course.

IALL:3100 Techniques for Biology Teaching 1-2 s.h.
Development and implementation of laboratory exercises suitable for inclusion in elementary, middle, high school, and community college biology and environmental courses; exercises built around common organisms and ecosystems in Iowa; animal biology, plant biology, fungi and lichens, aquatic ecology, prairie ecology, wetland ecology, limnology, animal behavior, insect ecology, biology of invertebrates, noninvasive use of living organisms, Project WET; field trips.

IALL:3102 Plant-Animal Interactions 4 s.h.
Introduction to ecology and co-evolution of plants and animals; emphasis on dispersal, pollination, plant-herbivore interactions; field and laboratory work, reading, discussion. Requirements: one biological science course.

IALL:3103 Aquatic Ecology 4 s.h.
Analysis of aquatic ecosystems; emphasis on basic ecological principles; ecological theories tested in the field; identification of common plants and animals. Requirements: ecology, chemistry, and physics courses.

IALL:3105 Plant Taxonomy 4 s.h.
Principles of classification and evolution of vascular plants; taxonomic tools and collection techniques; use of keys; field and laboratory studies emphasizing identification of local flowering plants, recognition of major plant families.

IALL:3109 Ecology and Systematics of Algae 4 s.h.
Ecology, morphological structure, phylogeny, and taxonomy of freshwater algae based on field material collected; emphasis on genus-level identifications, biodiversity, ecology; habitat visits to lakes, fens, streams, rivers; algal ecology.

IALL:3111 Summer Writing Festival at Iowa Lakeside Laboratory 1 s.h.
Application of imagination to life experiences to become more effective writers; writing exercises invite imaginative leaps, thoughtful reflections, humor, and seriousness; participants work in various forms of expression, including personal essay, poetry, and short fiction; designed for young adult to adult writers of all levels. One week.

IALL:3113 Undergraduate Independent Study 1-4 s.h.
Requirements: junior or senior standing.

IALL:3115 Field Mycology 4 s.h.
Identification and classification of the common fungi; techniques for identification, preservation, and culture practiced with members of the various fungi groups.

IALL:3117 Ecology and Systematics of Diatoms 4 s.h.
Field and laboratory study of freshwater diatoms; techniques in collection, preparation, and identification of diatom samples; study of environmental factors affecting growth, distribution, taxonomic characters; project design and execution, including construction of reference and voucher collections; data organization and analysis.

IALL:3122 Prairie Ecology 4 s.h.
Basic patterns, underlying physical and biotic causes of regional and local distributions of North American prairie plants and animals; field and laboratory analysis and projects. Requirements: familiarity with basic principles of biology and ecology.

IALL:3126 Ornithology 2-4 s.h.
Biological, ecological, and behavior of birds; emphasis on field studies of local avifauna; group projects with focus on techniques of population analysis and methodology for population studies.

IALL:3131 Ecology 4 s.h.
Introduction to the principles of ecology at the population, community, ecosystem levels; field studies of local lakes, wetlands, and prairies used to examine factors that control distributions, interactions, and roles of plants and animals in native ecosystems. Requirements: two semesters of introductory biology.

IALL:3133 Animals and Their Ecosystems 4 s.h.
Vertebrate and invertebrate animals of the Midwest; observation of animals in nature, either through passive observational techniques or active trapping exercises; once identified, placement of animals in proper taxonomic position (i.e., "Tree of Life"); ecological perspective, including habitat preferences (i.e., wetland, lake, prairie, forest, river, edge), trophic position, and activity patterns; discussion and emphasis on conservation status. Requirements: introductory biology course.

IALL:3151 Analysis of Environmental Data 2 s.h.
Theory and application of statistical techniques for analysis of ecological and paleoecological data.
IALL:3160 Restoration Ecology 4 s.h.
Ecological principles for restoration of native ecosystems; establishment (site preparation, selection of seed mixes, planting techniques) and management (fire, mowing, weed control) of native vegetation; evaluation of restorations; emphasis on prairie restoration, wetland vegetation. Requirements: an ecology course.

IALL:3163 Conservation Biology 4 s.h.
Population- and community-level examination of factors influencing viability of plant and animal populations from demographic and genetic perspectives; assessment of biodiversity; design, management of preserves. Offered summer sessions of odd years. Prerequisites: IALL:3131.

IALL:3175 Soil Formation and Landscape Relationships 2-4 s.h.
Relationships between soil formation, geomorphology, environment; soil description, classification, geography, mapping, interpretation for land use.

IALL:3199 Undergraduate Research 1-4 s.h.
Requirements: junior or senior standing.

Graduate

IALL:5213 Graduate Independent Study 1-4 s.h.

IALL:5217 Ecology and Systematics of Diatoms 4 s.h.

IALL:5234 Topics in Ecology and Sustainability 1-4 s.h.
Scientific introduction at graduate level to important groups of organisms: algae to vertebrates, different ecological phenomena (e.g., fire and climate change), varying landforms, and different ecosystems (e.g., prairies and aquatic systems); emphasis on sustainability with an introduction to concepts, issues, and practices; communication of environmental information through a variety of means.

IALL:5250 Graduate Internship 1-5 s.h.
Experience as interpreters, rangers, technicians, and teachers through placement with county conservation boards, camps, parks, schools, other agencies.

IALL:5299 Research 1-4 s.h.
Iowa Young Writers' Studio

**Director**
- Stephen Lovely

**Web site:** [http://iowayoungwritersstudio.org/](http://iowayoungwritersstudio.org/)

**Precollege Program of Study**

The Iowa Young Writers' Studio is a residential creative writing program for high school students offered during summer at the University of Iowa. Students in the program build a community of peers while working with experienced writing teachers, primarily students and graduates of the University's M.F.A. program in creative writing.

The studio offers three courses of study: poetry, fiction, and creative writing (a mix of poetry, fiction, and creative nonfiction). Each course consists of a seminar and a workshop. In seminars, students read literature by established writers. In workshops they share their own writing, get feedback from their classmates and teacher, and discuss issues of narrative and form.

The studio offers two two-week sessions: one in June and one in July.

Young writers who have completed grade 10, 11, or 12 are eligible to attend the studio. Application materials include an application, a creative writing sample, a statement of purpose, a high school transcript, and a letter of recommendation from an English teacher or another instructor familiar with the applicant's writing. Application is done entirely online. For complete application information, contact the Iowa Young Writers' Studio or visit its web site.

Application deadline is early February for the following summer.

**Courses**

**Pre-Lower Level**

*IYWS:1001 Iowa Young Writers' Studio* 0 s.h.
Leadership Studies

Codirectors
- Kelley Ashby, William Nelson

Undergraduate certificate: leadership studies
Web site: http://careers.uiowa.edu/students/leadership-certificate

Leadership studies is a multidisciplinary academic field that draws upon theories and applications from a wide variety of related disciplines, such as the social sciences (e.g., psychology, sociology, political science, and anthropology) and the humanities (e.g., philosophy and history), as well as professional fields, including management and education. The Leadership Studies Program examines ethical issues, principles, theories, and styles of leadership; the dynamics of interactions between leaders, followers, and group members; leaders’ impact on organizations and communities; and leadership skills such as goal setting, communicating effectively, creating a vision, and empowering others.

The Leadership Studies Program offers the undergraduate Certificate in Leadership Studies as well as the Career Leadership Academy, a two-course sequence designed to help undergraduate students develop leadership and employment skills, and the online course LS:3010 Global Leadership Initiative. See "Undergraduate Program of Study" and "Other Undergraduate Programs" below.

Undergraduate Program of Study
- Certificate in Leadership Studies

The Certificate in Leadership Studies is an interdisciplinary program coordinated by the Pomerantz Career Center and supported by the Tippie College of Business, the College of Education, the College of Liberal Arts and Sciences, and the Center for Student Involvement and Leadership.

Certificate

Students who enter the University in or after fall 2015, or who declare the certificate on or after the first day of fall semester 2015, fulfill the requirements below. Students who declare the certificate before the first day of fall semester 2015 may choose to complete the requirements stated in the Leadership Studies section of the 2014-15 General Catalog.

The Certificate in Leadership Studies requires 20 s.h. of credit. The certificate program is open to current University of Iowa undergraduate students and to all individuals who hold a bachelor’s degree and are not enrolled in a graduate or professional degree program. Students must maintain a g.p.a. of at least 2.00 in work for the certificate. Completion of the certificate is noted on the student’s transcript.

Students must declare their intent to earn the certificate to a leadership studies advisor in the Pomerantz Career Center; see Leadership Certificate on the center’s web site for information on how to enter the certificate program.

The certificate program provides a structure for involvement and commitment to leadership. It introduces students to leadership concepts and offers them hands-on leadership experiences they will need in order to begin the life-long development of these skills. Certificate students complete two interdisciplinary core courses (6 s.h.), area electives (12 s.h.), an experiential learning course (2 s.h.), and a final personal and program evaluation.

The Certificate in Leadership Studies requires the following course work.

INTERDISCIPLINARY CORE COURSES

All certificate students are required to complete two interdisciplinary core courses (6 s.h.). In order to enroll in either course, they must have earned a minimum of 30 s.h. of credit and must be in good academic standing as defined by the College of Liberal Arts and Sciences (cumulative g.p.a. of at least 2.00).

<table>
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<tr>
<th>Course Code</th>
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<tr>
<td>LS:3004</td>
<td>Perspectives on Leadership: Principles and Practices</td>
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This core course provides students with a broad foundation of leadership knowledge. It introduces diverse approaches to studying and practicing leadership and gives students a structure for organizing knowledge and skills from other leadership courses and experiences. The course features presentations by guest instructors from across the University, offering students an interdisciplinary perspective on leadership.

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<td>LS:3012</td>
<td>Leadership Theory to Practice</td>
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With the world changing at an accelerating rate, this course examines leadership effectiveness and the demand of a high-level ability to work with others and respond to change. Foundational concepts of major theories and behaviors of leadership models are covered; and practical challenges of leadership are analyzed through the use of experiential projects, discussion, presentations, and exercises. The development of self-awareness through use of behavioral instruments, group exercises, and individual reflection are explored; and major approaches to leadership, authentic leadership, team leadership, gender issues in leadership, emotional intelligence, and virtual leadership are reviewed.

Certificate students must complete LS:3004 and LS:3012 before they may enroll in the required experiential learning or service learning course.

AREA ELECTIVES

Area electives are drawn from four developmental areas central to effective leadership: self and group leadership, communication, cultural competence, and ethics and integrity. Students must complete 3 s.h. from each of these areas (total of 12 s.h.).

Self and Group Leadership

At least 3 s.h. from these:

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<tbody>
<tr>
<td>LS:1020</td>
<td>Introduction to Leadership</td>
<td>3</td>
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<td>LS:1022</td>
<td>President’s Leadership Class (PLC)</td>
<td>3</td>
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<tr>
<td>LS:2002</td>
<td>Career Leadership Academy Part 1</td>
<td>3</td>
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<tr>
<td>LS:3002</td>
<td>Career Leadership Academy Part 2</td>
<td>3</td>
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<tr>
<td>LS:3010</td>
<td>Global Leadership Initiative</td>
<td>1</td>
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<tr>
<td>AERO:3100</td>
<td>Air Force Leadership Studies I</td>
<td>3</td>
</tr>
<tr>
<td>AERO:3200</td>
<td>Air Force Leadership Studies II</td>
<td>3</td>
</tr>
<tr>
<td>COMM:1819</td>
<td>Organizational Leadership</td>
<td>2-3</td>
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<tr>
<td>COMM:2011</td>
<td>Group Communication</td>
<td>3</td>
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<tr>
<td>LLS:1045</td>
<td>Leadership in the Outdoors</td>
<td>3</td>
</tr>
<tr>
<td>MGMT:2100</td>
<td>Introduction to Management</td>
<td>3</td>
</tr>
<tr>
<td>MGMT:3200</td>
<td>Individuals, Teams, and Organizations</td>
<td>3</td>
</tr>
</tbody>
</table>
MGMT:4300 Leadership and Personal Development 3 s.h.
MILS:1010 Leadership and Personal Development MSL101 1 s.h.
MILS:1020 Introduction to Tactical Leadership MSL102 1 s.h.
MILS:2010 Innovative Team Leadership MSL201 2 s.h.
MILS:2020 Foundations of Tactical Leadership MSL202 2 s.h.
PSY:2501 Introduction to Social Psychology 3 s.h.
SOC:2220 Principles of Social Psychology 3-4 s.h.
SOC:3610 Organizations and Modern Society 3 s.h.
SOC:4225 The Social Psychology of Leadership 3 s.h.
SSW:3600 Nonprofit Organizational Effectiveness II 3 s.h.

Communication
At least 3 s.h. from these:
BUS:3000 Business Communication and Protocol 3 s.h.
BUS:3800 Business Writing 3 s.h.
CNW:3640 Writing for Business and Industry 3 s.h.
COMM:1112 Interpersonal Communication 3 s.h.
COMM:1117 Theory and Practice of Argument 4 s.h.
COMM:1130 The Art of Persuading Others 3 s.h.
COMM:1170 Communication Theory in Everyday Life 3 s.h.
COMM:1301 Core Concepts in Communication Studies 3 s.h.
COMM:1818 Leadership and Organizational Procedures 2 s.h.
COMM:1819 Organizational Leadership 2-3 s.h.
COMM:2091 Organizational Communication 3 s.h.
INTM:3755 What is Storytelling For? 4 s.h.
MGMT:4100 Dynamics of Negotiations 3 s.h.

One elective approved for the Certificate in Critical Cultural Competence 3 s.h.

Students who use an elective approved for the Certificate in Critical Cultural Competence to satisfy this requirement must choose it from elective courses listed on the Certificate in Critical Cultural Competence web site.

Ethics and Integrity
At least 3 s.h. from these:
ARTH:4040/LAW:8163 Art, Law, and Ethics 3 s.h.
HMP:6315 Seminar in Health Care Ethics 1-2 s.h.
HRTS:2115 Introduction to Human Rights 3 s.h.
JMC:3180 Journalism Ethics 3 s.h.
JMC:3300 Media Law and Communication 3 s.h.
MGMT:2000 Introduction to Law 3 s.h.
MGMT:3400 Employment Law 3 s.h.
PHIL:1034 Liberty and the Pursuit of Happiness 3 s.h.
PHIL:1401 Matters of Life and Death 3 s.h.
PHIL:1636 Principles of Reasoning: Argument and Debate 3 s.h.
PHIL:1861 Introduction to Philosophy 3 s.h.
PHIL:2402 Introduction to Ethics 3 s.h.
PHIL:2432 Introduction to Political Philosophy 3 s.h.
PHIL:2435 Philosophy of Law 3 s.h.
PTRS:5100 Professional Issues and Ethics 1 s.h.
RCE:4195 Ethics in Human Relations and Counseling 3 s.h.

EXPERIENTIAL LEARNING
Certificate students must earn 2 s.h. in a course focused on experiential, or hands-on, learning. An experiential learning course may take different forms, such as a service learning experience, an internship, or an on-campus leadership practicum.

Before they enroll in the hands-on course, students must have completed at least 12 s.h. of work toward the certificate, including the core courses LS:3004 Perspectives on Leadership: Principles and Practices and LS:3012 Leadership Theory to Practice, so that they have a solid foundation of knowledge to apply to the experience.

Service Learning Courses
Service learning courses incorporate community engagement with academic course work. They allow students to gain hands-on experience along with a deeper understanding of course content while responding to real community needs. Students may satisfy the certificate’s experiential learning requirement by earning 2 s.h. in service learning courses approved by the University of Iowa Center for Teaching.

Both of these (they must be approved in advance by the Pomerantz Career Center):
LS:3009 Global Leadership Initiative in Xicotepec 1-3 s.h.
ABRD:3352 International Perspectives: Xicotepec (Section 006) arr.

Or this course (it must be approved in advance by the Pomerantz Career Center):
LS:3002 Career Leadership Academy Part 2 3 s.h.
Internship
Students register for the following course (2 s.h.) in order to receive certificate credit for the internship; they must complete all course assignments in order to fulfill the experiential learning requirement.

LS:3011 Leadership Certificate Internship  2 s.h.
Internships consist of preapproved, supervised on-the-job learning; they may be paid or unpaid.
To meet the certificate’s experiential learning requirement, an internship must consist of professional experience that relates to the student’s major field of study or career interest area and allows a student to build on the academic course work he or she has completed in the certificate program. At least 80 percent of a student’s internship duties must be professional-level work, and a student must receive continuous supervision by a professional (not a student) in the internship field. The internship must last a minimum of 15 weeks in fall or spring semester or six weeks in the summer and must require 150 hours of work.
Internships that fulfill the certificate’s experiential learning requirement must be approved in advance by one of the certificate program’s internship advisors, and the internship site supervisor must agree to the terms of the internship and must complete the required form before the internship may be approved. Students may work with staff at the Pomerantz Career Center to find an approved internship opportunity, or they may develop their own internship.
For more information about internships, see Internships on the Pomerantz Career Center web site.

On-Campus Leadership Practicum
Students who wish to fulfill the experiential learning requirement with an on-campus leadership practicum must engage in a formal, approved experience that is meaningful, educational, and cocurricular. It requires a student to take initiative and pursue active leadership roles and responsibilities. Examples include positions as student organization leaders, student government leaders, University Housing resident assistants, student orientation advisors, peer educators, and fraternity and sorority leaders. Practicums may be paid or unpaid.
Students register for the following course (3 s.h.) in order to receive certificate credit for the practicum and fulfill the experiential learning requirement.

LS:1023 Leadership Certificate Practicum  3 s.h.
To meet the certificate’s experiential learning requirement, a practicum must last at least 15 weeks during the semester in which LS:1023 is offered and must require 10-15 hours of work per week; the course is not offered every semester.
Practicums that fulfill the certificate’s experiential learning requirement must be approved in advance by the leadership practicum instructor in the University’s Center for Student Involvement and Leadership. Students must submit a list of goals and assignments and/or duties they will complete during the practicum, to demonstrate that the practicum will provide substantive work assignments and opportunities to build on the academic course work they have completed in the certificate program. Each student also must identify a practicum mentor and demonstrate that the mentor is willing to guide and evaluate the student’s work and development of leadership skills, and intends to participate in reviewing the student’s goal-setting assignment and in the final review of the student’s performance.
Students meet weekly in the practicum course to discuss topics related to the academic course work as applied in practice and they must successfully complete a goal-setting assignment and a reflection assignment.

PERSONAL AND PROGRAM EVALUATION
In order to be awarded the Certificate in Leadership Studies, students must complete a final report detailing how they completed the certificate requirements. The report should include a list of all courses taken for the certificate, indicating the requirement each course met, when each course was taken, and what grade the student earned for each course.

Other Undergraduate Programs
Career Leadership Academy
The Career Leadership Academy is a two-semester sequence of courses designed to help undergraduate students develop vital skills for leadership and employment: communication, interpersonal, and presentation skills and the ability to work well with others. This highly interactive program consists of weekly seminars, activities, and events. Participants also have access to exclusive programs such as career exploration opportunities, networking events, and leadership development experiences.

LS:2002 Career Leadership Academy Part 1  3 s.h.
LS:3002 Career Leadership Academy Part 2  3 s.h.

For more information, see Career Leadership Academy on the Pomerantz Career Center web site.

Global Leadership Initiative
The Leadership Studies Program offers LS:3010 Global Leadership Initiative (1 s.h.), an online course designed to help those engaged in international experiences develop their leadership knowledge, awareness, and skills. Individuals involved in study abroad, international internships, international exchange programs, or employment opportunities that involve international cooperation may enroll in the course concurrently with their international experiences, or in the semester preceding these experiences. The course includes online discussion with other students, guided reflection, opportunities to engage with successful leaders in cross-cultural roles, pre- and postexperience assessment, and direction for continued development of global leadership competence after the course concludes.

Professional Development
Professional development courses provide students with opportunities to engage in practical, hands-on, skills-based instruction relevant to careers and leadership development. The topics and curricula for the following courses incorporate input from employers, who were surveyed about their experiences, real-world examples, guidance, and which skills they most often seek when hiring new graduates.
Courses

Lower-Level Undergraduate

**LS:1005 Leadership Community Seminar** 0-1 s.h.
Opportunity to develop leadership knowledge and skills through workshops and programs; meaningful involvement and engagement on campus and in community through service learning opportunities; team building through a variety of initiatives and student-led programming; interaction with students who are making their own personal impact. Requirements: Personal Impact Living-Learning Community member.

**LS:1007 The 7 Habits of Highly Successful College Students** 1 s.h.
Workshop to help students change their approach to responsibilities, relationships, problems, and opportunities; balancing aspects of college life through time management skills; uncovering and exploring a personal mission and setting goals; increase trust levels and proactive behaviors; developing strong relationships with other students and professors; understand and effectively meet needs and expectations of professors, family, and others most important to student; setting priorities to achieve what matters most.

**LS:1009 Mock Trial** 2 s.h.
Opportunity to learn legal analysis and argumentation, public performance; participation in University of Iowa Mock Trial Club; mock trial role preparation, tournament competition, and staging an annual club tournament.

**LS:1017 Orientation Leader Training** 1-2 s.h.
Preparation for leadership role as a Hawkeye Guide in Orientation Services or as an On Iowa! team captain.

**LS:1018 Issues in College Residence Halls I** 1 s.h.
Development of knowledge and skills required for work as a resident assistant; creating community, handling crises and emergencies; leadership.

**LS:1019 Issues in College Residence Halls II** 1 s.h.
Continuation of LS:1018.

**LS:1020 Introduction to Leadership** 3 s.h.
Overview of leadership theory and skills for effective leadership; historical perspective, development of a personal philosophy of leadership, self-assessments, leadership models; study of groups, culture, and communities; application of experiential learning settings; community service project; geared toward emerging student leaders.

**LS:1021 Current Issues and Leadership in Fraternity and Sorority Life** 3 s.h.
Current issues facing leaders (alcohol and hazing education, conflict management, lasting impact of organizations on members); lifetime membership and values-based decision making; for leaders of fraternity and sorority community.

**LS:1022 President’s Leadership Class (PLC)** 3 s.h.
Meetings on current UI issues and the UI Presidents' philosophy on leadership; leaders from inside and outside the University, including Board of Regents, political leaders, influential alumni, student leaders, professors, coaches, other administrators; activities linked to the development of personal leadership style. Requirements: first-year standing and application.

**LS:1023 Leadership Certificate Practicum Class** 3 s.h.
Meaningful and educational cocurricular experiences in on-campus leadership positions (i.e., student organization leader, student government leader, residence assistant, student orientation advisor, peer educator, fraternity/sorority leader); active leadership roles and responsibilities (i.e., executive leadership position, initiating and organizing a major event); application of leadership models and theories to practical experiences; for students completing the leadership certificate. Requirements: leadership certificate program enrollment, completion of introductory course requirements (general leadership pillar), completion of 9 s.h. in certificate program, and meet with instructor prior to enrollment.

**LS:1024 Alternative Break Service Learning** arr.
Introduction to theoretical approaches to service learning; shared experiential learning event off campus (i.e., alternative break) coordinated by professional or graduate staff member; variety of concepts including intersectionality of varied social and community issues, reflection and reciprocity, active citizenship and community building, practical implementation of skills from student's academic disciplines, leadership development, and other related areas; five expectations of the IOWA Challenge, with emphasis on STRETCH and SERVE, through education, direct service, and reflection. Requirements: application and acceptance to program.

**LS:2002 Career Leadership Academy Part 1** 3 s.h.
Leadership and employee readiness; opportunity to increase understanding of self, leadership concepts, skills sought by employers, and understanding of others; work and lead effectively in teams; creation of a group presentation focused on community needs; career development components of résumé writing, LinkedIn profile construction, and networking; first in a two-course series.

**LS:2012 Communication Skills for Leaders** 1 s.h.
Shortcomings that exist in today's world, where messages are typically conveyed in 140 characters or less, and when people need to communicate effectively as leaders; how to develop and improve essential communication skills in order to be effective leaders in professional and personal relationships; road trip with visits to different organizations to learn how communication is used effectively in the workplace in a variety of settings; opportunity to network and develop communication skills in interactions with employers.
LS:2013 Strengths-Based Leadership 1 s.h.
Examination and evaluation of personal unique talents, be more engaged, and gain better understanding of leadership from a "Strengths" perspective; how to maximize strengths to stand out from the crowd; how society encourages people to be well-rounded (according to Gallup Organization's Strengths research) and how this pursuit of many goals can actually result in mediocrity.

LS:2014 PCC Leadership Internship 0 s.h.
Opportunity to develop and improve leadership and professional skills in a structured environment; skills employers seek in new graduates; evaluation of internship experience; for students who have secured an internship focused on leadership and professional skills development in the Pomerantz Career Center and related programs. Requirements: sophomore or higher standing, completion of at least 12 s.h. of UI course work, secured internship approved in advance by instructor, and compliance with Pomerantz Career Center internship requirements.

Upper-Level Undergraduate and Graduate

LS:3002 Career Leadership Academy Part 2 3 s.h.
Leadership development and employee readiness; application of Top 5 Strengths, building effective teams, communication, problem solving, motivation, and delegation skills to a service-learning project designed by the class through engagement with a community partner; Golden Personality Type Profiles, use of LinkedIn, interviewing, personal branding, job searching, professional etiquette, salary negotiation, and transitioning successfully into the first job; second in a two-course series. Prerequisites: LS:2002.

LS:3003 Culturally Intelligent Leadership 1 s.h.
National Coalition Building Institute (NCBI) and Cultural Intelligence Quotient (CQ) skill-based training to become more culturally intelligent leaders; in-class participation by employers, networking, learning how these principles take shape in the real world at their respective organizations; book of student's résumés provided to employers at completion of course. Requirements: sophomore or higher standing.

LS:3004 Perspectives on Leadership: Principles and Practices 3 s.h.
Broad foundation of leadership knowledge representing diverse approaches to studying and practicing leadership; core course for students pursuing the leadership certificate. Requirements: sophomore or higher standing.

LS:3009 Global Leadership Initiative in Xicotepec 1-3 s.h.
Culture, history, and values of Mexico; leadership skills and work on civil and humanitarian projects; reflection of learning and experiences; spring break week in Xicotepec, Mexico. Requirements: participation in Career Leadership Academy.

LS:3010 Global Leadership Initiative 1 s.h.
Development of knowledge, attitudes, and skills to be effective global leaders regardless of the industry or field; working effectively in a global environment with empathy; ability to deal with ambiguity and unfamiliarity; critical thinking and comparative skills, including the ability to think creatively and integrate knowledge; pre- and post-travel assessment, guided reflection, guest speakers, online discussion; intercultural communication; online course for students engaged in a study abroad experience or international internship. Requirements: concurrent enrollment in a study abroad or international internship experience, or completing an international component of current employment.

LS:3011 Leadership Certificate Internship 0,2,3 s.h.
Registration of practical work experience (internship) with leadership components, for students pursuing the leadership certificate. Prerequisites: LS:3004 and LS:3012. Requirements: an additional 6 s.h. of approved leadership course work.

LS:3012 Leadership Theory to Practice 3 s.h.
How the world is changing at an accelerating rate; leadership effectiveness and demand of a high-level ability to work with others and respond to change; foundational concepts of major theories and behaviors of leadership models; practical challenges of leadership analyzed through use of experiential projects, discussion, presentations, exercises; development of self-awareness through use of behavioral instruments, group exercises, individual reflection; major approaches to leadership, authentic leadership, team leadership, gender issues in leadership, emotional intelligence, virtual leadership.
Lifetime Leisure Skills

Director
- Steve Campbell

Web site: http://recserv.uiowa.edu/

Lifetime Leisure Skills courses are open to University of Iowa undergraduate and graduate students. Undergraduates in the College of Liberal Arts and Sciences may count credit earned in Lifetime Leisure Skills courses toward the minimum of 120 s.h. required for a bachelor's degree. Students should consult with their academic advisors.

Courses

Lower-Level Undergraduate

LLL:1002 Water Safety Instructor 1 s.h.
Training for instructor candidates to teach courses in the American Red Cross Swimming and Water Safety Program; how to use course materials, conduct training sessions, and evaluate participants' progress.

LLL:1003 Wilderness First Responder 2 s.h.
Skills necessary for providing critical medical care and making evacuation decisions in remote wilderness locations; interactive lectures, case studies, and hands-on practice through realistic scenarios help master material; 80-hour certification course.

LLL:1004 Waltz 1 s.h.
Beginning through intermediate-level waltz figures; performing a beautiful waltz routine; skills and knowledge to dance with confidence at any formal dance occasion.

LLL:1005 Intermediate Ballroom Dancing: Rhumba, Cha Cha, Merengue 1 s.h.

LLL:1006 Intermediate Ballroom Dancing: Foxtrot, Waltz, Tango 1 s.h.
Intermediate-level figures in three of the most beautiful and popular dances in the world—foxtrot, waltz, and tango; review of basics. Recommendations: LLS:1060.

LLL:1007 Introduction to Rowing 1 s.h.
Introduction to technique, vocabulary, and procedures needed to safely participate in the sport of rowing; use of rowing machines, rowing tank, and rowing shells.

LLL:1008 Intermediate Kickboxing 1 s.h.
Aggressive workout utilizing heavy bags, coach's mitts, and other equipment; conducted at moderate to intense pace using competitive kicking techniques, training methods, and equipment; kickboxing as a conditioning tool with self-defense as a byproduct; not designed to prepare for competition. Prerequisites: LLS:1047.

LLL:1009 Introduction to the Outdoors 1 s.h.
Introduction to wonderful world of camping; focus on development of skills and knowledge pertaining to camping equipment, campsite selection and setup, outdoor cooking, useful knots, and "Leave No Trace" principles; overnight camping required.

LLL:1010 Whitewater Kayak Playboating 1 s.h.
Varied techniques of playboating—a style of whitewater kayaking in which the paddler performs tricks on natural or human-made whitewater features; taught in Field House pool and at rivers in Iowa with whitewater kayaking parks. Recommendations: previous whitewater kayaking experience or LLS:1049.

LLL:1011 Stand Up Paddleboarding 1 s.h.
Introduction to physical skills and knowledge of equipment to safely enjoy paddleboarding on flat, calm water; paddling environment, board and paddle control, standing and balancing, personal preparation and safety. Taught at Macbride Nature Recreation Area.

LLL:1041 Scuba 1 s.h.
Basics of scuba diving. Taught in CRWC wet classroom and natatorium. Seven weeks.

LLL:1042 Introduction to Rock Climbing 1 s.h.
Utilization of indoor and outdoor climbing classrooms; comprehensive introduction to physical techniques of rock climbing, mechanical skills of belaying, proper usage of personal protective equipment, and common climbing terminology.

LLL:1043 Bicycle Touring 1 s.h.
Basics of bicycle touring; riding techniques, basic bicycle maintenance, rules of the road. Taught on Johnson County area roads and trail systems.

LLL:1044 Mountain Bicycling 1 s.h.
Basics of mountain bicycling; riding techniques, basic bicycle maintenance, trail etiquette. Taught on Sugar Bottom recreation trail system.

LLL:1045 Leadership in the Outdoors 3 s.h.
Leadership theories, group dynamics, expedition logistics, outdoor leadership skills, risk management; indoor and outdoor classroom sessions, overnight camping required; technical skill development may include backpacking, canoeing, kayaking, rock climbing, mountain biking, bike touring, general camping.

LLL:1046 Tae Kwon Do 1 s.h.
Basics of Tae Kwon Do. Eight weeks.

LLL:1047 Kickboxing 1 s.h.
Basics of kickboxing. Eight weeks.

LLL:1048 Canoeing 1 s.h.
Basics of flatwater canoeing; paddle strokes, canoe anatomy, water safety. Taught at Macbride Nature Recreation Area.
LLS:1049 White Water Kayaking 1 s.h.
Basics of whitewater kayaking; paddle strokes, kayak anatomy, rolling and bracing, water safety, whitewater hydrology; introductory session in Field House pool, weekend spent on rivers in Wisconsin or Missouri.

LLS:1050 White Water Canoeing 1 s.h.
Basics of whitewater canoeing; paddle strokes, canoe anatomy, water safety, whitewater hydrology; overnight camping required. Taught on rivers in Wisconsin or Missouri.

LLS:1051 Marathon Training 1 s.h.
Multiweek training program; for students who currently run on a regular basis and wish to take their running to a more advanced level.

LLS:1052 Intermediate Cross-Country Skiing 1 s.h.
Skate skiing in northern Wisconsin. Prerequisites: LLS:1075.

LLS:1053 River Canoeing 1 s.h.
Fundamentals of tandem canoeing on moving water; basic paddling strokes, canoe anatomy, hydrology, river safety; overnight camping required.

LLS:1054 Dog Sledding 1 s.h.
Basics of dog sledding and winter camping.

LLS:1055 Intermediate Rock Climbing 1 s.h.
Builds on skills learned in LLS:1042; overnight camping required. Prerequisites: LLS:1042.

LLS:1056 Hiking 1 s.h.
Basics of hiking and camping. Taught at Devil's Lake State Park in Wisconsin.

LLS:1057 Backcountry Skiing and Snowshoeing 1 s.h.
Basics of backcountry winter travel and camping.

LLS:1058 Basic Self Defense 1 s.h.
Basics of self-defense.

LLS:1059 Intermediate Tae Kwon Do 1 s.h.
Development of knowledge and skills learned in LLS:1046. Prerequisites: LLS:1046.

LLS:1060 Ballroom Dancing 1 s.h.
Basics of ballroom dancing.

LLS:1062 Trail Running 1 s.h.
Techniques of off-road running; utilization of local running trails in and around Iowa City; emphasis on proper training, clothing, equipment, and nutrition.

LLS:1063 Introduction to Nature Photography 1 s.h.
Basics of outdoor photography; no darkroom requirement. Taught at Macbride Nature Recreation Area.

LLS:1064 Basic Orienteering 1 s.h.
Basics of orienteering, including map and compass skills. Taught at Macbride Nature Recreation Area.

LLS:1065 Low Impact Camping 1 s.h.
Seven principles of "Leave No Trace," an international standard for the ethical utilization and enjoyment of outdoor spaces; overnight camping experience at Macbride Nature Recreation Area.

LLS:1066 Exploring the Natural Wonders of Iowa 1 s.h.
Natural history of the Loess Hills of western Iowa, Maquoketa Caves of eastern Iowa, or Effigy Mounds National Monument of northeastern Iowa; weekend hiking and camping.

LLS:1067 Team Building Challenge Course 1 s.h.
Various methods of team building and common characteristics of successful teams through the use of UI High Adventure Challenge Course; strong emphasis on cooperative group work and discussions.

LLS:1068 Wilderness Appreciation 1 s.h.
Basics of wilderness appreciation; one overnight camping experience. Taught at Macbride Nature Recreation Area.

LLS:1069 Basic Snowshoeing 1 s.h.
Basics of snowshoeing. Taught on trails in northern Minnesota.

LLS:1070 Intermediate Bicycle Touring 1 s.h.
How to plan and pack for self-sustained, overnight bicycle touring trips; overnight camping required. Prerequisites: LLS:1043.

LLS:1071 Advanced Open Water Scuba 1 s.h.
Participation in five scuba diving specialty activities. Prerequisites: LLS:1041. Requirements: certification as open water scuba diver.

LLS:1072 Basic Sea Kayaking 1 s.h.
Basics of sea kayaking using solo and tandem boats. Taught at Lake Macbride.

LLS:1073 Winter Camping 1 s.h.
How to successfully and comfortably camp in cold, harsh conditions; snow shelters, hydration, meal preparation, clothing needs; snowshoe/ski travel with sleds (as conditions permit).

LLS:1074 Intermediate Mountain Bicycling 1 s.h.
Mountain bicycling knowledge and skill developed on intermediate-level trails; on-trail maintenance. Prerequisites: LLS:1044.

LLS:1075 Basic Cross-Country Skiing 1 s.h.
Basics of cross-country skiing in northern Wisconsin.

LLS:1076 Mountain Bicycling in Moab 1 s.h.
Advanced mountain bicycling techniques. Taught near Moab, Utah. Prerequisites: LLS:1044.

LLS:1077 Backpacking 1 s.h.
Development of skills necessary for remote, multiday, backcountry travel while exploring some of the most iconic backpacking trails in the United States; locations have and may include Grand Canyon National Park, Canyonlands National Park, and the Appalachian Trail; physically strenuous.
LLS:1078 Ballroom Dancing—Nightclub Series 1 s.h.
Salsa, the Hustle, Nightclub Two-Step, Argentine tango.

LLS:1079 Ballroom Dancing—Rhythm and Smooth 1 s.h.
Mambo, samba, waltz, Viennese waltz.

LLS:1080 Challenge Course Facilitation 3 s.h.
How to effectively and purposefully facilitate and lead challenge course activities; philosophy and history of challenge courses, group games and initiatives, processing and debriefing with challenge course groups, low- and high-course elements, risk management.

LLS:1081 Hut-to-Hut Skiing 1 s.h.
Cross-country skiing in Colorado's 10th Mountain Hut System.

LLS:1082 Introduction to Bouldering 1 s.h.
Basic skills and technique for bouldering with a partner. Taught at Horse Pens 40 in Alabama and/or Rocktown in Georgia.

LLS:1083 Tandem Biking 1 s.h.
How to ride a tandem bicycle with a partner; traffic principles and safety concerns; equipment and accessories for tandem bikes.

LLS:1084 Late Night Outdoor Recreation 1 s.h.
Nighttime outdoor activities such as moonlight kayaking and canoeing, night hiking, orienteering, bouldering.

LLS:1085 Bicycle Racing Techniques 1 s.h.
Basic skills and techniques of bicycle racing.

LLS:1086 Stretch Strength Relaxation (RelaXercise) 1 s.h.
Stress reduction through exercise, stretching, meditation, and full body breathing techniques.

LLS:1087 Modern Dance for Fitness 1 s.h.
Basic working knowledge of modern dance; introduction to modern dance styles, skills, physical art, and discipline; focus on movement, dance techniques and skill, performance, creative experience.

LLS:1088 Salsa Dancing 1 s.h.
Fundamentals of Latin/Salsa dancing; musical rhythms, cultural history, postures, technique, basic movements; techniques for developing strength, stamina, balance, poise, and partner dancing skills; gender interaction and traditional social behaviors in salsa’s cultural context.

LLS:1089 Service Learning 1 s.h.
Service learning project in an urban or wilderness setting; learn about local community, environment; projects depend on location, season.

LLS:1090 Rock Climbing Anchor Systems 2 s.h.
Development of basic skills for climbing anchors; understanding setting top-ropes anchors; use of bolts, trees, and passive and mechanical chocks for anchor setting; equalization of anchors; basic knots for rope, webbing, and cordelettes; basic understanding of the structural integrity and frictional forces important to anchor setting.

LLS:1091 Lifeguarding 1 s.h.
American Red Cross lifeguard training through classroom learning, hands-on practice; surveillance skills for preventing and recognizing injuries; land and water rescue skills; first-aid training, professional rescuer CPR; professional lifeguard responsibilities (e.g., interacting with the public, addressing uncooperative persons); certification in lifeguarding, first aid, professional rescuer CPR, AED.

LLS:1092 Bicycling Southern States 1 s.h.
Ride routes and trails between Memphis, TN and Vicksburg, MS; see everything from Graceland to cotton fields by bicycle; vehicle supported adventure, camp while exploring the Southern states.

LLS:1093 Intermediate Sea Kayaking 1 s.h.
Exploration of the beautiful waters of Lake Powell by sea kayak, venture into remote hidden side canyons, gaze at stunning landscape, and camp on secluded beaches under star-filled sky; learn skills needed to be a safe and efficient sea kayak adventurer, including packing and transporting boats, paddle strokes, rescue techniques.

LLS:1094 Land Navigation 1 s.h.
Travel to the American Southwest to learn navigation and camping skills in a beautiful remote wilderness; focus on map and compass skills including declination, bearings, triangulation, topographical map reading, situational awareness; backcountry camping skills; very physically strenuous.

LLS:1095 Movement Analysis and Relaxation Techniques for Fitness 1 s.h.
Intensive workshop about connections: body to mind, breathing to efficient strengthening and stretching, stability to mobility, exertion to recuperation, function to expression; objectively observe, record, analyze, and understand student's own movement and that of classmates to bring positive change to movement habits and behavior which block energy and create unneeded stress, inhibit full movement ability and not allow for optimal, desired performance; mindful, efficient, articulate movement.

LLS:1096 Brazilian Jiu-Jitsu 1 s.h.
Introduction to the sport of Brazilian Jiu Jitsu; basic self-defense, positional grappling, submissions, submission defense.

LLS:1097 Introduction to Lead Climbing 1 s.h.
Fundamentals of lead climbing and lead belaying; use of 52.5-foot tall climbing wall at CRWC; eligible to lead climb at UI Climbing Wall after successful completion of course. Prerequisites: LLS:1042.
LLS:1098 Yoga
Emphasis on mindfulness, breath awareness, and attention to alignment.

LLS:1099 Golf
Basic principles and fundamentals of golf swing (e.g., full swing, pitching, chipping, putting); opportunity to practice skills at various facilities; history, basic rules, proper golf etiquette, evolution of golf related to technology.

Upper-Level Undergraduate and Graduate

LLS:4000 Independent Study
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Individual study in an area of interest to students; course work determined by faculty supervisor.
Military Science (Army ROTC)

Head

Undergraduate minor: military science
Web site: http://www.uiowa.edu/armyrotc/

The Military Science Program administers Iowa Army ROTC. It gives students who wish to serve on active or reserve status in the U.S. Army the opportunity to earn commissions as army officers. It also administers merit scholarships from the United States government to qualified students.

Although the Military Science Program does not offer degrees, students can earn a minor in military science. ROTC courses provide education in the military's role and instruction in leadership and management. The program's courses are an essential part of the Iowa ROTC program, which competes annually in national leadership assessments.

Military Science Program courses are open to all students. Course credit that counts toward graduation varies by college. Students in the College of Liberal Arts and Sciences may count up to 20 s.h. earned in military science courses toward graduation.

Undergraduate and Graduate Programs

Basic Course

The ROTC Basic Course is designed primarily for first- and second-year students. It provides the fundamentals of leadership and management and introduces the roles of the military as influenced by national and foreign policy. Students incur no obligation to the military for participation in the basic course.

The following four courses satisfy the Basic Course requirement.

MILS:1010 Leadership and Personal Development MSL101 1 s.h.
MILS:1020 Introduction to Tactical Leadership MSL102 1 s.h.
MILS:2010 Innovative Team Leadership MSL201 2 s.h.
MILS:2020 Foundations of Tactical Leadership MSL202 2 s.h.

Two of these courses have prerequisites; students must complete all of a course's prerequisites before they may register for the course. Courses MILS:1010 and MILS:1020 are prerequisites for MILS:2010; all three courses are prerequisites for MILS:2020.

The Basic Course requirement may be taken over a one- or two-year period or during a four-week paid summer camp, Cadet Initial Entry Training (CIET), held at Fort Knox, Kentucky, followed by completion of a Lateral Entry Cadet Training Module. Students with prior military training normally are exempt from the Basic Course requirement.

Cadet Initial Entry Training (CIET) is a recent addition to the Army ROTC summer training requirements. CIET takes place in the summer, either between a cadet's first and second years or between their second and third years. Similar to basic training, CIET trains cadets on many basic soldier skills ensuring cadets across the country have the same foundation knowledge to be successful with the remainder of their Army ROTC training.

Advanced Course

The ROTC Advanced Course is open to any student who meets the prerequisites, but it is designed primarily for cadets who wish to pursue a commission as a lieutenant in the U.S. Army upon graduation. It is open to both undergraduate and graduate students. Most cadets in the Advanced Course incur an obligation to the military that can be satisfied in the Active Army, Army Reserve, or Army National Guard.

To enter the Advanced Course, students must satisfy the Basic Course requirement, earn at least 54 s.h., and have a cumulative g.p.a. of at least 2.00. In order to become U.S. Army officers, cadets must complete the Cadet Leaders Course (CLC), an approximately 30-day session held at Fort Knox, Kentucky. Cadets normally attend CLC during the summer between their third and fourth years. With the military science professor's permission, cadets may delay CLC until the summer after their final ROTC class.

A tax-free monthly stipend is provided to cadets who enter a contractual agreement with ROTC to serve in the armed forces. Additional financial assistance may be provided through scholarships.

The following courses are the academic requirements for completion of the Advanced Course. Some of these courses have prerequisites and corequisites, so students must be careful to take courses in the correct order. Prerequisites and corequisites for each course are listed with course descriptions; see "Courses" at the end of this section.

MILS:1090 Leadership Laboratory 0 s.h.
MILS:1095 Advanced Military Fitness Training 1 s.h.
MILS:3010 Adaptive Tactical Leadership MSL301 3 s.h.
MILS:3020 Leadership in Changing Environments MSL302 3 s.h.
MILS:4010 Developing Adaptive Leaders MSL401 3 s.h.
MILS:4020 Leadership in a Complex World MSL402 3 s.h.

Additional Course Work

Cadets whose aim is a commission must satisfy a Professional Military Education (PME) requirement. They must complete at least one course in military history from the following list. This course may be the same as one used to complete the College of Liberal Arts and Sciences General Education Program (p. 313). Cadets may use other courses to meet the requirement, with the military science professor's approval.

HIST:1012 Issues in Human History: Europe's Expansion Overseas 3 s.h.
HIST:1016 Issues in Human History: The Vietnam War in Historical Perspective 3 s.h.
HIST:4256 The Progressive Era in America 3 s.h.
HIST:4264 U.S.A. in a World at War 1931-1945 3 s.h.
HIST:4268 The Contemporary U.S. 1940-Present 3 s.h.
HIST:4271 American Revolutionary Period 1740-1789 3 s.h.

Undergraduate Program of Study

- Minor in military science

**Minor**

The minor in military science requires a minimum of 20 s.h. of course work taken at the University of Iowa. Students must maintain a g.p.a. of at least 2.00 in all courses for the minor and in all UI courses for the minor. Course work in the minor may not be taken pass/nonpass. In order to count course work taken at other institutions toward the minor, students must have the military science professor's approval. The minor requires the following course work.

All of these:

- MILS:1010 Leadership and Personal Development MSL101 1 s.h.
- MILS:1020 Introduction to Tactical Leadership MSL102 1 s.h.
- MILS:2010 Innovative Team Leadership MSL201 2 s.h.
- MILS:2020 Foundations of Tactical Leadership MSL202 2 s.h.
- MILS:3010 Adaptive Tactical Leadership MSL301 3 s.h.
- MILS:3020 Leadership in Changing Environments MSL302 3 s.h.
- MILS:4010 Developing Adaptive Leaders MSL401 3 s.h.
- MILS:4020 Leadership in a Complex World MSL402 3 s.h.

One of these:

- MILS:3121 Readings in Contemporary Military Issues (taken with a qualified IMHIC instructor) 2-3 s.h.
- HIST:1000 First-Year Seminar (when topic is history in the making: world events in historical context) 2 s.h.
- HIST:1012 Issues in Human History: Europe's Expansion Overseas 3 s.h.
- HIST:1014 Issues: Twentieth-Century Crisis (when topic is history of World War II) 3 s.h.
- HIST:1016 Issues in Human History: The Vietnam War in Historical Perspective 3 s.h.
- HIST:2261 American History 1492-1877 3 s.h.
- HIST:2262 American History 1877-Present 3 s.h.
- HIST:3155 The World Since 1945 3 s.h.
- HIST:3145 Europe and the U.S. in the Twentieth Century 3 s.h.
- HIST:4215 War and Peace in the Twentieth Century 3 s.h.
- HIST:4232 United States in World Affairs 3-4 s.h.
- HIST:4256 The Progressive Era in America 3 s.h.
- HIST:4264 U.S.A. in a World at War 1931-1945 3 s.h.
- HIST:4268 The Contemporary U.S. 1940-Present 3 s.h.
- HIST:4271 American Revolutionary Period 1740-1789 3 s.h.

HIST:4334 Topics in American Borderlands History 3 s.h.
HIST:4475 Germany Since 1914: Weimar, Hitler, and After 3-4 s.h.
HIST:4499 First World War 3-4 s.h.
HIST:4617 History, Memory, and Pacific War 3 s.h.
HIST:4810 History of the Modern Middle East (when topic is historical survey of Southwest Asia and North Africa) 3 s.h.
HIST:4815 Topics in the Modern Middle East 3 s.h.

**Financial Aid**

Military Science offers two-, three-, and four-year ROTC scholarships for students who enter the ROTC program. These scholarships pay tuition at the University of Iowa, an allotment for books and supplies each semester, most mandatory educational fees, and a tax-free monthly stipend during the academic year. Scholarships also are available for nursing students who wish to become Army nurses.

**Courses**

**Lower-Level Undergraduate**

**MILS:1010 Leadership and Personal Development MSL101** 1 s.h.
Introduction to the personal challenges and competencies critical for effective leadership; how skills such as critical thinking, goal setting, time management, physical fitness, and stress management relate to leadership, officership, and the army as a profession; dimensions of army leadership; understanding of the ROTC program, its purpose in the army, its advantages for students. Offered fall semesters.

**MILS:1020 Introduction to Tactical Leadership MSL102** 1 s.h.
Leadership fundamentals such as setting direction, problem solving, listening, presenting briefs, providing feedback, using effective writing skills; leadership values, attributes, skills, and actions explored through hands-on, interactive exercises; cadre role models, development of strong relationships among students through common experience, practical interaction. Offered spring semesters.

**MILS:1090 Leadership Laboratory** 0 s.h.
Hands-on training in basic soldier skills, such as customs and courtesies, drill and ceremony, first aid, weapons employment, troop movement techniques; leadership training for U.S. army officership. Offered fall and spring semesters.

**MILS:1095 Advanced Military Fitness Training** 1 s.h.
Aerobics and running, muscular strength and endurance, flexibility, and nutrition through exercise and classroom instruction; how to evaluate and measure fitness improvement; developed around Army physical fitness training program. Offered fall and spring semesters.

**MILS:2010 Innovative Team Leadership MSL201** 2 s.h.
Dimensions of creative, innovative tactical leadership strategies and styles explored through team dynamics and historical leadership theories (trait and behavior) central to the Army leadership framework; personal motivation and team building through planning, executing, and assessing team exercises and participating in leadership labs; continued development of leadership values and attributes through understanding army rank, structure, duties, basic aspects of land navigation and squad tactics; case studies on soldier's creed and warrior ethos in the contemporary operating environment. Offered fall semesters. Prerequisites: MILS:1010 and MILS:1020.

**MILS:2020 Foundations of Tactical Leadership MSL202**

Challenges of leading tactical teams in the complex contemporary operating environment; dimensions of terrain analysis, patrolling, operation orders; theoretical basis of the army leadership framework, dynamics of adaptive leadership in the context of military operations; self-assessment of cadet leadership styles, practice in communication and team building skills; case studies on importance and practice of teamwork and tactics in real-world scenarios. Offered spring semesters. Prerequisites: MILS:1010 and MILS:1020 and MILS:2010.

**Upper-Level Undergraduate and Graduate**

**MILS:3010 Adaptive Tactical Leadership MSL301**

Study, practice, and evaluation of adaptive leadership skills in challenging scenarios related to squad tactical operations; feedback on cadets' leadership attributes and actions, continued development of leadership and critical thinking abilities; development of tactical leadership abilities in preparation for Leadership Development Assessment Course (LDAC). Offered fall semesters. Corequisites: MILS:1090 and MILS:1095. Requirements: MILS:1010 and MILS:1020 and MILS:2010 and MILS:2020; or completion of army basic training or Leader's Training Course.

**MILS:3020 Leadership in Changing Environments MSL302**

Development of cadet awareness and tactical leadership to platoon level, through increasingly intense situational leadership challenges; experience reviewing combat, stability, and support operations, conducting military briefings, developing proficiency in garrison operation orders; focus on exploring, evaluating, and developing skills in decision making, persuasion, and motivation of team members in a contemporary operating environment; preparation for summer Leader Development Assessment Course. Offered spring semesters. Prerequisites: MILS:3010. Corequisites: MILS:1090 and MILS:1095. Requirements: MILS:1010 and MILS:1020 and MILS:2010 and MILS:2020; or completion of army basic training or Leader's Training Course.

**MILS:3121 Readings in Contemporary Military Issues**

Preparation of book reviews from a reading list provided by the instructor, with topics ranging from historical battles and campaigns to global impact of U.S. political policies; or writing of an operations order relating to an ROTC event or similar project of historical significance (work in conjunction with instructor). Requirements: MILS:1010 and MILS:1020 and MILS:2010 and MILS:2020; or completion of army basic training or Leader's Training Course.

**MILS:4010 Developing Adaptive Leaders MSL401**

Development of proficiency in planning, executing, and assessing complex operations, functioning as member of a staff, providing performance feedback to subordinates; experience assessing risk, making ethical decisions, leading fellow cadets; military justice and personnel processes in preparation for officership; identification of key staff responsibilities, coordination of staff roles, use of situational opportunities to teach, train, and develop subordinates. Offered fall semesters. Prerequisites: MILS:3010 and MILS:3020. Corequisites: MILS:1090 and MILS:1095.

**MILS:4020 Leadership in a Complex World MSL402**

Leadership dynamics in complex military operations of the contemporary operating environment; differences in customs and courtesies, military law, principles of war, rules of engagement in the face of international terrorism; interaction with nongovernmental organizations, civilians on the battlefield, host nation support; ethical and practical demands on army commissioned officers; preparation for first unit assignment through case studies, scenarios, exercises. Offered spring semesters. Prerequisites: MILS:3010 and MILS:3020 and MILS:4010. Corequisites: MILS:1090 and MILS:1095.
Nonprofit Management

Director
  • Joseph Sulentic (Management and Organizations)

Undergraduate certificate: nonprofit management
Web site: http://distance.uiowa.edu/article/undergraduate-certificate-nonprofit-management

Nonprofit organizations play vital roles in our communities and contribute to our quality of life. These organizations have unique management, funding, and finance issues that require specialized training. The Certificate in Nonprofit Management is designed to help staff members, board members, founders, and volunteers develop the business and leadership skills necessary for building a successful nonprofit organization. The program provides a balance of academic principles and real-world experience as well as a fundamental understanding of how nonprofit organizations participate in building communities.

Certificate courses cover a wide range of topics and issues, such as community and government partnerships, organizational leadership, entrepreneurship, planning, human resources, financial accountability, grant writing, and web site creation and maintenance. Entrepreneurship courses help frame an organization's value proposition to maximize revenue generation from multiple sources.

Courses are offered primarily online.

The Certificate in Nonprofit Management is administered by the Division of Continuing Education and the Larned A. Waterman Iowa Nonprofit Resource Center, in collaboration with University College.

Undergraduate Program of Study
  • Certificate in Nonprofit Management

Certificate

The Certificate in Nonprofit Management requires a minimum of 18 s.h. of credit. The certificate program is open to current University of Iowa undergraduate students and to all individuals who hold a bachelor's degree and are not enrolled in a graduate or professional degree program. Students must maintain a g.p.a. of at least 2.00 in work for the certificate. Completion of the certificate is noted on the student's transcript.

See the Certificate in Nonprofit Management web site for details about how to enter the program.

Bachelor of Applied Studies (p. 1192) and Bachelor of Liberal Studies (p. 1195) students may be able to incorporate certificate courses into their degree programs; students should consult with their advisors.

The Certificate in Nonprofit Management requires the following course work.

FOUNDATION COURSES

Students should complete these two courses before they enroll in the remaining certificate course work.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MGMT:3500</td>
<td>Nonprofit Organizational Effectiveness I</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ENTR:3500</td>
<td>Nonprofit Organizational Effectiveness II</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>IS:3910</td>
<td>Human Rights Advocacy</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>POLI:3123</td>
<td>State Politics in Iowa</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>SOC:4225</td>
<td>The Social Psychology of Leadership</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>SSW:3904</td>
<td>Human Services Administration</td>
<td>2 s.h.</td>
</tr>
</tbody>
</table>

Students complete one of the following three courses. Two of them, ENTR:2000 Entrepreneurship and Innovation and ENTR:3520 New Ventures in the Arts, have corequisites; see the course descriptions on ISIS for choice of corequisites. Foundations in Entrepreneurship [ENTR:1350] is the only corequisite that may be taken online.

<table>
<thead>
<tr>
<th>Course Code</th>
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<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENTR:2000</td>
<td>Entrepreneurship and Innovation</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ENTR:3520</td>
<td>New Ventures in the Arts</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>MGMT:3100</td>
<td>Entrepreneurial Strategy</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

ELECTIVES

Students earn a minimum of 9 s.h. in courses chosen from these.

<table>
<thead>
<tr>
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<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMM:1819</td>
<td>Organizational Leadership</td>
<td>2-3 s.h.</td>
</tr>
<tr>
<td>DPA:3510</td>
<td>Introduction to Arts Management</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>EDTL:4081</td>
<td>ePortfolio Production</td>
<td>1-2 s.h.</td>
</tr>
<tr>
<td>EDTL:4936</td>
<td>Home/School/Community Partnerships</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ENTR:3500</td>
<td>Social Entrepreneurship</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>IS:3910</td>
<td>Human Rights Advocacy</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>POLI:3110</td>
<td>Local Politics</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>POLI:3123</td>
<td>State Politics in Iowa</td>
<td>3 s.h.</td>
</tr>
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<td>The Social Psychology of Leadership</td>
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</tr>
<tr>
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<td>Human Services Administration</td>
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</tbody>
</table>

Students may take one of these:

<table>
<thead>
<tr>
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<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARTS:3400</td>
<td>Grant Writing in the Arts</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>EALL:4130</td>
<td>Introduction to Grant Writing</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>
Patient Care Practicum

**Director**
- Lon D. Moeller

The Patient Care Practicum prepares students for work and/or internships at University of Iowa Hospitals and Clinics (UIHC). Students complete required online training modules through the University's course management system. Once the training modules are completed, students are certified to work at UIHC.

**Courses**

**Upper-Level Undergraduate and Graduate**

PCP:3198 UIHC Compliance Training  0 s.h.
Project Lead The Way

Coordinator
- Lon D. Moeller

Precollege Program of Study
Project Lead The Way (PLTW) at Iowa is a sequence of courses for high school students taught in conjunction with traditional math and science courses. The curriculum emphasizes critical thinking, creativity, innovation, and real-world problem solving. PLTW courses provide students with in-depth, hands-on knowledge of biomedical science.

Courses

**PLTW:1010 Principles of Biomedical Science**
1 s.h.
Introduction to human physiology, basic biology, medicine, and research processes through student activities and projects. Requirements: Project Lead the Way high school student.

**PLTW:1020 Human Body Systems**
3 s.h.
Interactions of human body systems in promoting homeostasis. Requirements: Project Lead the Way high school student.

**PLTW:1030 Medical Interventions**
3 s.h.
Techniques for preventing, diagnosing, and treating diseases. Requirements: Project Lead the Way high school student.

**PLTW:1040 Biomedical Innovation**
3 s.h.
Independent projects with a mentor to design solutions for pressing health challenges for the 21st century. Requirements: Project Lead the Way high school student.
Secondary Student Training Program

Director
• Lori M. Ihrig

Web site: http://www2.education.uiowa.edu/belinblank/students/summer/Classes.aspx?P=SSTP

Precollege Program

Students who are currently in grades 10-11 may nominate themselves for the Secondary Student Training Program (SSTP), a five-week residential summer research program at the University of Iowa. SSTP students conduct original research in University laboratories under the guidance of a faculty mentor. They also produce a research abstract and an academic poster as a part of the program.

Students who participate in the program pay an SSTP fee that covers room, board, all materials, and admission to all regularly scheduled activities. They also pay University of Iowa tuition for a required 3 s.h. of credit. Students and their families are responsible for their transportation to and from SSTP and for incidental expenses, such as souvenirs and snacks. Students are considered for financial aid after they are selected for the program.

The Secondary Student Training Program is administered by the Belin-Blank International Center for Gifted Education and Talent Development. For more information, contact the Belin-Blank Center.

Courses

Lower-Level Undergraduate

SSTP:1001 Secondary Student Training Program 3 s.h.
Experience conducting research under the guidance of a faculty mentor; presentation of research findings at concluding seminar. Six weeks.
Student Information Technology Skills

**Director**
- Mary Grabe (Information Technology Services)

Student Information Technology Skills offers a course for students who are interested in on-campus employment providing IT support or creating and maintaining web sites. Students are graded on participation in online and class discussions and projects. They must obtain the instructor's consent before registering for this course.

**Courses**

**Upper-Level Undergraduate and Graduate**

**SITS:3102 Core IT Support Skills**
2 s.h.
Knowledge and hands-on skills necessary for supporting computers in an institutional setting; basic hardware, operating systems, application, and networking support topics.
Study Abroad

Director
  • Douglas J. Lee

Web site: http://international.uiowa.edu/study-abroad/

The University of Iowa sponsors or cosponsors a wide variety of study abroad programs in approximately 50 countries. Students may choose from summer, fall or spring semester, academic year, and winter session programs that complement and extend the University's academic programs across the curriculum.

Students also may participate in study abroad programs sponsored by other accredited U.S. and foreign institutions. They should obtain advance approval of all transfer credit by completing a Study Abroad Credit Approval Form.

Information on University of Iowa and other study abroad programs is available from Study Abroad.

Courses

Upper-Level Undergraduate and Graduate

ABRD:3010 Iowa Regents Semester in Wales
University of Swansea, Wales; three-week interdisciplinary course on British life and culture, followed by regular degree course work in the humanities, social sciences, physical sciences, business, engineering. Fall and spring semesters. Requirements: g.p.a. of at least 2.80.

ABRD:3012 Iowa Regents Semester in Scotland
Advanced undergraduate study at the University of Edinburgh; humanities, social sciences, science, engineering. Fall and/or spring. Requirements: g.p.a. of at least 3.00.

ABRD:3020 London Performance Study
Selected theater productions, lectures, performances, discussions, written exercises, workshops, cultural activities. Credit may be applied toward a University of Iowa major in English or theatre arts. Summer.

ABRD:3025 Undergraduate International Business Abroad
Study of the international business environment in one of the world’s financial capitals; may count toward undergraduate business major or Certificate in International Business. Winter. Prerequisites vary depending on classes being offered. Requirements: junior standing.

ABRD:3027 Crime and Justice in Britain
3 s.h.
Introduction to crime and criminal justice in Britain, drawing comparisons and highlighting features important to understanding crime and justice in the United States; first week on campus in Iowa City, second two weeks overseas; classroom and experiential learning through visits to key sites in London in Edinburgh; unique opportunity to visit sites that aid understanding of British justice and prison systems; contemporary patterns of crime and justice in Great Britain. Three-weeks in summer. Requirements: completion of one academic year of work (24 s.h. minimum) at the University of Iowa at time of application or 2.50 g.p.a., and good academic standing.

ABRD:3029 Health Promotion in Great Britain
Health care as offered by Great Britain's National Health Service and private providers, compared to health care delivery systems in the United States. Offered every other year during spring break.

ABRD:3030 Iowa Regents Semester in Ireland
Regular course work in all disciplines at University College Cork in Ireland. Fall and spring semesters. Requirements: sophomore standing and g.p.a. of at least 3.00.

ABRD:3035 Irish Writing Program
Dublin, Ireland; writing workshops directed by Irish writers, literature courses taught by faculty. Summer.

ABRD:3045 Academic Year in Freiburg
Combination of special program classes, German for foreigners, and regular degree course work in most liberal arts subjects at Albert-Ludwigs University, Freiburg, Germany. Academic year. Requirements: at least four semesters college German with g.p.a. of at least 3.00.

ABRD:3062 CIEE Paris Critical Studies Program
Analysis of literature, film, and other forms of visual expression through use of contemporary critical theory; interaction among fields of literature, aesthetics, and psychoanalysis; examination of problems involved in such analysis; administered by the Council on International Educational Exchange (CIEE) on behalf of a consortium of which the University of Iowa is a member; for students with advanced French language skills. Requirements: 3.00 cumulative g.p.a., five semesters of college-level French, and previous course work in relevant fields.

ABRD:3063 CIEE Paris Contemporary French Studies Program
Combines an interdisciplinary academic program on contemporary French society and culture (taught in French or English) with opportunity to develop strong language skills; contemporary social issues in politics, Francophone cultures, and Muslim communities in Europe; administered by the Council on International Educational Exchange (CIEE) on behalf of a consortium of which the University of Iowa is a member; for intermediate-level French students. Requirements: 3.00 cumulative g.p.a. and at least two to five semesters of college-level French.

ABRD:3064 CIEE Rennes Liberal Arts Program
12 s.h.
Increase language ability and knowledge of France and French culture; opportunity to take regular university classes alongside French students; intensive language and humanities course work; cultural activities; administered by the Council on International Educational Exchange (CIEE) on behalf of an academic consortium of which the University of Iowa is a member; for intermediate or advanced intermediate students. Requirements: 2.75 cumulative g.p.a., 3.00 g.p.a. in French language, and four semesters of college-level French.

**ABRD:3066 CIEE Paris Language and Culture Program**

Introduction to French society through an interdisciplinary course on culture or study of French language in the world metropolis of Paris; administered by the Council on International Educational Exchange (CIEE) on behalf of an academic consortium of which the University of Iowa is a member. Two three-week sessions. Requirements: 2.75 g.p.a. and four semesters of college-level French.

**ABRD:3070 USAC Studies in France**

Beginning through advanced French language study at the University of Pau; additional courses in French culture, literature, politics, history, and other disciplines. Taught in English and French. No previous study of French required. Requirements: g.p.a. of at least 2.50.

**ABRD:3071 Study Abroad in Montpellier**

Special courses for foreign students or regular courses with French students at University of Montpellier; taught in French. Semester or academic year. Requirements: four semesters of French.

**ABRD:3072 Montpellier Summer Language Program**

Advanced French language and course on contemporary France that explores current perspectives on immigration; visits to local organizations dedicated to naturalization services; public housing; immigrants' rights, nonviolence, antiracism, and antidiscrimination; excursions around Montpellier and other social activities; option to take accelerated language track in either four- or eight-week program; development of language skills in various contexts depending on level (beginning through advanced) and prescribed curriculum at each level. Six weeks. Requirements: 2.50 g.p.a. and average grade of B in French course work.

**ABRD:3073 Perspectives on International Politics**

Study world politics in Paris, France; how concepts of international relations originated and evolved, and how political phenomena relate to theories of world politics through study in Europe, the birthplace of the modern nation-state; site visits related to France's flavored history of religion, revolution, colonization, war, occupation, emancipation, integration, and globalization; fundamental processes of international politics. Requirements: good academic and disciplinary standing.

**ABRD:3081 John Cabot University in Rome, Italy**

Business, social science, humanities, art, and language courses at John Cabot University; located in the heart of Rome and surrounded by the extraordinarily rich offerings of a city of culture, history, art, creativity, business, and international affairs.

**ABRD:3082 Studio Art Centers International in Florence, Italy**

Studio art, design, art conservation, art history, Italian language, and creative writing instruction at Studio Art Centers International (SACI) in Florence, Italy; focus on art courses; engagement in leading areas of research and exploration; opportunities to interact with the Florentine community through a variety of social and humanitarian programs. Summer, semester, or academic year.

**ABRD:3083 USAC Turin Program**

Academic course work, practical learning, tours, site visits, and integrated cultural experience; content in diverse academic areas of business, architecture, and Italian studies; Italian language courses; administered by the University Studies Abroad Consortium (USAC) of which the University of Iowa is a member. Semester, summer, or academic year. Requirements: 2.50 g.p.a. and appointment with Italy study abroad advisor prior to application.

**ABRD:3084 USAC Viterbo Program**

Academic course work at Viterbo's historical Tuscia University of Viterbo; practical learning, tours, site visits, and integrated cultural experience; high-quality educational experience in art history and Italian studies; Italian language course; administered by the University Studies Abroad Consortium (USAC) of which the University of Iowa is a member. Semester, academic year, or five-week summer session. Requirements: 2.50 g.p.a., good academic standing, and appointment with Italy study abroad advisor prior to application.

**ABRD:3085 Natural Disasters**

How normal processes of earth-atmosphere-hydrosphere-space systems result in events that are capable of dealing disastrous blows to humans on the scale of individual lives to civilizations; focus on geologic processes that have impacted Mediterranean civilization (i.e., earthquakes, volcanic eruptions, floods, tsunami) including their local, national, and global impact; case studies drawn from contemporary and ancient societies, and feature ancient and modern Italy. Requirements: 2.50 g.p.a. and good academic and disciplinary standing.

**ABRD:3087 USAC Reggio Emilia Program**

Language study and additional course work in English or Italian; administered by the University Studies Abroad Consortium (USAC) of which the University of Iowa is a member. Summer, semester, or academic year. Requirements: 2.50 g.p.a. and good academic and disciplinary standing.

**ABRD:3088 CIMBA Italy Program**

Course work in business and related disciplines in the Veneto region of Italy, taught in English. Four weeks in summer or 13-week semesters.
ABRD:3120 Regents Hispanic Institute
Study of Spanish language and culture in Valladolid, Spain. Six weeks in summer. Requirements: four semesters of college-level Spanish.

ABRD:3121 Cultures of Spain
Study abroad in Madrid, the geographic and sociocultural center of Spain; overview of heterogeneous cultural landscape of Spain through interdisciplinary approach to its history; special attention given to conflict between two antagonistic national projects—one that understands Spain as a homogeneous entity and historically based on authoritarian forms of government, Catholic faith, and centralistic culture, and one that advocates for a plural conception of the country and emphasizes a liberal government, tolerance, and cultural diversity. Four weeks. Requirements: 2.50 cumulative g.p.a. and good academic and disciplinary standing.

ABRD:3135 CIEE Portugal Program
Intensive Portuguese language study (beginning to advanced levels) and area studies courses taught in English at Lisbon's Universidade Nova; regular university courses are available to semester students with sufficient language proficiency. Summer, semester, or academic year. Requirements: g.p.a. of at least 2.75.

ABRD:3140 American College of Thessaloniki Semester
Undergraduate studies in varied academic disciplines (business, history, international relations, psychology, fine arts, literature, philosophy, modern Greek language) at the American College of Thessaloniki. Taught in English.

ABRD:3165 Archaeological Field Work Abroad
Major archeology projects hosted at international excavation sites. Summer.

ABRD:3201 CIEE Alcala Language and Culture Program
Established in 1999, the CIEE Study Center at the Universidad de Alcala (Alcala de Henares, Spain) provides an academic program for students with a high-intermediate to advanced-level of Spanish; the summer program (established in 2008) consists of language and culture courses offered through the Institute; all courses offered in Spanish; many approved for Spanish majors, minors, and general education requirements, and may be approved for other degree requirements; 6 s.h. taken in each four-and-one-half-week session. Requirements: 2.75 cumulative g.p.a., 3.00 g.p.a. in most recent Spanish course, four semesters of college-level Spanish, and valid passport at time of application.

ABRD:3205 CIEE Alicante Language and Culture Program
Rapid progress in language skills while taking area studies courses related to Europe and Spain; linguistic development and cultural immersion promoted through housing in Spanish-speaking homes and supplementary visits and excursions; administered by the Council on International Education Exchange (CIEE) on behalf of an academic consortium of which the University of Iowa is a member. Semester or academic year. Requirements: 2.75 minimum g.p.a., three to four semesters of college-level Spanish, and valid passport at time of application.

ABRD:3206 CIEE Alicante Language and Culture Summer Program
Development of Spanish language skills and knowledge of Spanish art, cinema, and culture in Alicante, Spain; linguistic development and cultural immersion through housing in Spanish-speaking homes, supplementary visits and excursions, content courses in Spanish, and direct enrollment at the University of Alicante; administered by the Council on International Educational Exchange (CIEE) on behalf of an academic consortium of which the University of Iowa is a member; for students with varying levels of Spanish. Summer. Requirements: 2.75 cumulative g.p.a., four semesters of college-level Spanish, and valid passport at time of application.

ABRD:3207 CIEE Alicante Language in Context Program
Solid foundation provided in Spanish language; improvement of language skills while pursuing studies focusing on Spain and Europe; topics in history, art history, political science, and international business; intensive language course work; area studies courses in English, conversation exchange program, excursions, and homestays; administered by the Council on International Educational Exchange (CIEE). Requirements: 2.75 minimum g.p.a., two semesters or less of college-level Spanish, and valid passport at time of application.

ABRD:3208 CIEE Alicante Liberal Arts Program
Development of spoken and written Spanish language skills; linguistic development and cultural immersion promoted through housing in Spanish-speaking homes, supplementary visits and excursions, content courses in Spanish, and direct enrollment at the University of Alicante; administered by the Council on International Education Exchange (CIEE) on behalf of an academic consortium of which the University of Iowa is a member. Semester or academic year. Requirements: 2.75 minimum g.p.a., at least five semesters of college-level Spanish, and valid passport at time of application.

ABRD:3215 CIEE Barcelona Advanced Liberal Arts Program
Development of fluency through direct enrollment in a wide range of regular university classes; classes taken alongside Spanish classmates who become friends and guides to the culture; dramatic improvement of Spanish language skills while living the language every day in the city and the university; for students with advanced Spanish language skills. Semester or academic year. Requirements: 3.00 minimum g.p.a., at least six semesters of college-level Spanish, and valid passport at time of application.
**ABRD:3216 CIEE Barcelona Architecture and Design Program**

Exploration of the intersection of two fields in a city famous for its vibrant architecture and innovative design; courses offered by ELISAVA and CIEE allow a unique opportunity to collaborate in a joint core class alongside courses in student’s track and Spanish language; administered by the Council on International Educational Exchange (CIEE) on behalf of an academic consortium of which the University of Iowa is a member. Requirements: 3.00 cumulative g.p.a. and valid passport at time of application; for design track students — design or related major or minor and four semesters of college-level Spanish.

**ABRD:3217 CIEE Barcelona Business and Culture Program**

Development of competency in Spanish language while studying issues related to business in Spain and the European Union, Spanish language and culture; company visits, excursions, and homestays or student residence option in the vibrant city of Barcelona contribute to students’ cultural immersion and development of language skills; administered by the Council on International Educational Exchange (CIEE) on behalf of an academic consortium; designed for students with varied levels of Spanish. Semester or academic year. Requirements: 3.00 cumulative g.p.a.; three semesters of microeconomics, macroeconomics, accounting, finance, management, or statistics; and valid passport at time of application.

**ABRD:3218 CIEE Barcelona Economics and Culture Program**

Classes at a Spanish university for students with varying levels of Spanish and a strong background in economics; administered by the Council on International Educational Exchange (CIEE) on behalf of an academic consortium of which the University of Iowa is a member. Semester or academic year. Requirements: 3.25 cumulative g.p.a., three semesters of microeconomics or macroeconomics, one semester of calculus, and valid passport at time of application.

**ABRD:3219 CIEE Barcelona Language and Culture Program**

Development of skills and competency in Spanish language while studying Spanish history, arts, politics, and culture; administered by the Council on International Educational Exchange (CIEE) on behalf of an academic consortium of which the University of Iowa is a member. Requirements: 3.00 cumulative g.p.a., junior standing, one to three semesters of college-level Spanish, and valid passport at time of application.

**ABRD:3220 CIEE Barcelona Language and Culture Summer Program**

Rapid progress in language skills while taking language, culture, or business courses in Barcelona; administered by the Council on International Educational Exchange (CIEE) on behalf of an academic consortium of which the University of Iowa is a member; for students with varying levels of Spanish. Summer. Requirements: 2.75 cumulative g.p.a. and four semesters of college-level Spanish.

**ABRD:3221 CIEE Barcelona Liberal Arts Program**

Development of skills and competency in Spanish language while studying Spanish history, politics, and culture at Universitat Pompeu Fabra; cultural immersion and development of language skills through excursions and homestays or student residence option in the vibrant city of Barcelona; administered by the Council on International Educational Exchange (CIEE) on behalf of an academic consortium of which the University of Iowa is a member. Requirements: 3.00 cumulative g.p.a., junior standing, four semesters of college-level Spanish, and valid passport at time of application.

**ABRD:3230 CIEE Madrid Legal Studies Program**

Opportunity to further develop Spanish language skills while pursuing cocurricular program focused on law and public policy in Spain; goals achieved through a specially-designed language course, course on legal issues in Spain, an optional internship, and law and political science elective course at the Universidad Carlos III de Madrid; administered by the Council on International Educational Exchange (CIEE) on behalf of an academic consortium of which the University of Iowa is a member; for highly motivated students with a strong Spanish background, from any academic discipline. Requirements: g.p.a. of at least 3.00, six semesters of college-level Spanish, junior standing or above, and valid passport at time of application. Recommendations: good background in math/statistics in order to grasp the more theoretical focus of European business instruction.

**ABRD:3231 CIEE Madrid Liberal Arts Program**

Opportunity to matriculate in a combination of content courses in Hispanic studies, regular university courses, and short seminars while continuing to improve language skills and take advantage of the vibrant and rich cultural milieu of Madrid; linguistic development and cultural immersion promoted through housing in Spanish-speaking homes, and supplementary visits and excursions; administered by the Council on International Educational Exchange (CIEE) on behalf of an academic consortium of which the University of Iowa is a member; for independent, advanced-level students. Semester or academic year. Requirements: 3.00 minimum g.p.a., five or six semesters of college-level Spanish, and valid passport at time of application.

**ABRD:3240 CIEE Palma de Mallorca Liberal Arts Program**

Established in 2006, the CIEE study center at Universitat de les Illes Balears provides an academic program for students with an advanced level of Spanish who are interested in tourism studies, business, humanities, Spanish literature and language, and social sciences; administered by the Council on International Educational Exchange (CIEE) on behalf of a consortium of which the University of Iowa is a member. Requirements: 2.75 cumulative g.p.a., five semesters of college-level Spanish, and valid passport at time of application.

**ABRD:3241 CIEE Palma de Mallorca Business and Tourism Program**

12 s.h.
Study business, tourism, and hospitality alongside Spanish students in a direct enrollment environment with a global perspective in Palma de Mallorca; development of management skills for future leadership in the tourism and hospitality industry; administered by the Council on International Educational Exchange (CIEE) on behalf of a consortium of which the University of Iowa is a member. Requirements: 2.75 cumulative g.p.a. and valid passport at time of application. Recommendations: two semesters of college-level Spanish.

**ABRD:3242 CIEE Palma de Mallorca**

**Language and Culture Summer Program**

Established in 2006, the CIEE Study Center at Universitat de les Illes Balears provides an academic summer program for students interested in tourism; development or improvement of Spanish language skills while learning about Spain and Europe; administered by the Council on International Educational Exchange (CIEE) on behalf of an academic consortium of which the University of Iowa is a member. Requirements: 2.75 cumulative g.p.a., four semesters of college-level Spanish, and valid passport at time of application.

**ABRD:3243 CIEE Palma de Mallorca**

**Summer Internship Program**

Enhancement of academic and language skills in a professional context while being immersed in Spanish professional work environment; intensive Spanish language course related to business and tourism taken during first three weeks with substantial interactive and practical component; five-week internship in hotel, company, or nonprofit organization with completion of 130 hours of work and meeting three hours each week with a university professor; designed for business and tourism students. Requirements: 2.75 cumulative g.p.a., four semesters of college-level Spanish, and valid passport at time of application.

**ABRD:3250 CIEE Seville Advanced Liberal Arts Program**

Achievement of fluency in spoken and written Spanish; wide variety of academic fields to gain deeper understanding from a Spanish perspective; direct matriculation in university courses, homestays, local and overnight excursions, conversational exchange program, volunteer opportunities, and independent study options in Seville, Spain. Requirements: 3.00 cumulative g.p.a., 3.00 minimum g.p.a. in Spanish courses, six semesters of college-level Spanish, and valid passport at time of application.

**ABRD:3251 CIEE Seville Business and Society Program**

Opportunity to study business in an international context through a combination of course work in Spanish business, society, and language; related field visits to Spanish companies; designed for highly motivated students of business with advanced-level Spanish skills at the University of Seville’s Business School; unpaid internships may be available to students with advanced language ability; administered by the Council on International Educational Exchange (CIEE) on behalf of a consortium of which the University of Iowa is a member. Semester or academic year. Requirements: at least 2.75 g.p.a.; five semesters of college-level Spanish; 6 s.h. of microeconomics, macroeconomics, accounting, finance, management, or statistics; and valid passport at time of application. Recommendations: good background in math/statistics to grasp the more theoretical focus of European business instruction.

**ABRD:3252 CIEE Seville Business Internship Program**

Exposure to a professional workplace atmosphere in Seville, Spain for business students; administered by the Council on International Educational Exchange (CIEE) on behalf of an academic consortium of which the University of Iowa is a member. Eight weeks. Requirements: 2.75 cumulative g.p.a., five semesters of college-level Spanish, and valid passport at time of application.

**ABRD:3253 CIEE Seville Communications, New Media, and Journalism Program**

Valuable hands-on experience in a multifaceted academic and professional environment; courses through CIEE and with Spanish students at the Universidad de Sevilla; may include CIEE classes offered through the Liberal Arts program; social and cultural immersion of participants in the host society through specialized projects and extracurricular activities; administered by the Council on International Educational Exchange (CIEE) on behalf of an academic consortium of which the University of Iowa is a member; for students considering a career in any communication environment. Requirements: 2.75 cumulative g.p.a., five semesters of college-level Spanish, and valid passport at time of application.

**ABRD:3254 CIEE Seville International Business and Culture Program**

Spanish language improvement in Seville, Spain; courses in English, primarily in the field of international business; administered by the Council on International Educational Exchange (CIEE) on behalf of a consortium of which the University of Iowa is a member; for beginning to intermediate students. Semester or academic year. Requirements: 2.75 g.p.a., four semesters or less of college-level Spanish, and valid passport at time of application.

**ABRD:3255 CIEE Seville Language and Culture Summer Program**

3,6,9 s.h.
Development of Spanish language skills and exposure to Spanish culture through an intense immersion experience; courses in Spanish language and culture, conversational exchange program, homestay program, and local visits and excursions; administered by the Council on International Educational Exchange (CIEE) on behalf of an academic consortium of which the University of Iowa is a member. Three, six, or nine weeks. Requirements: 2.75 cumulative g.p.a., four semesters of college-level Spanish, and valid passport at time of application.

ABRD:3257 CIEE Seville Language and Society Program
Rapid improvement of Spanish language skills; Spanish culture and its artistic, literary, historical, or political traditions; linguistic and cross-cultural development enhanced by participation in community life, volunteer work, field trips, and housing with Spanish-speakers in homestays; administered by the Council on International Educational Exchange (CIEE) on behalf of a consortium of which the University of Iowa is a member; for intermediate or low-advanced level students. Fall or spring semester. Requirements: 2.75 minimum g.p.a., completion of three and no more than four semesters of college-level Spanish, and valid passport at time of application.

ABRD:3258 CIEE Seville Liberal Arts Program
Achieve fluency in written and spoken Spanish; language acquisition and cultural immersion through housing in Spanish-speaking homes, involvement in volunteer opportunities, and conversation exchanges; courses at the CIEE Study Center, the University of Seville, and Pablo de Olavide University (UPO); administered by the Council on International Educational Exchange (CIEE) on behalf of a consortium of which the University of Iowa is a member. Semester or academic year. Requirements: 2.75 cumulative g.p.a., five semesters of college-level Spanish, and valid passport at time of application.

ABRD:3259 CIEE Seville Teaching Development Program
Achieve greater competency in written and spoken Spanish while developing specific expertise in international education and second language acquisition; academic program, teaching development course, homestay, excursions and cultural activities, conversation exchanges, and volunteer opportunities; administered by the Council on International Educational Exchange (CIEE) on behalf of a consortium of which the University of Iowa is a member. Semester or academic year. Requirements: 2.75 cumulative g.p.a., five semesters of college-level Spanish, and valid passport at time of application.

ABRD:3260 CIEE Madrid Business, Economics, and Culture
Development of skills and competency in Spanish language while studying business, economics, and culture at CIEE Madrid study center and/or Universidad Carlos III; cultural immersion and development of language skills through excursions and homestays or student residence option in energetic city of Madrid; administered by the Council on International Educational Exchange (CIEE) on behalf of an academic consortium of which the University of Iowa is a member. Requirements: 3.00 cumulative g.p.a., two semesters of college-level Spanish, and three semesters of college-level microeconomics, macroeconomics, accounting, finance, management, marketing, or statistics; for students taking economics courses — two additional college-level microeconomics or macroeconomics courses and one semester of calculus.

ABRD:3270 USAC Alicante Program
Intensive language study in Alicante, Spain; up to two years of university language requirements may be met in one semester; additional courses taught in English or Spanish; administered by the University Studies Abroad Consortium (USAC) of which the University of Iowa is a member. Summer, semester or academic year. Requirements: 2.50 g.p.a. and good academic standing.

ABRD:3272 USAC Bilbao Program
Intensive language study; up to two years of university language requirements may be met in one semester; additional courses taught in English or Spanish; administered by the University Studies Abroad Consortium (USAC) of which the University of Iowa is a member. Summer, semester or academic year. Requirements: 2.50 g.p.a. and good academic standing.

ABRD:3274 USAC Madrid Program
Intensive language study; up to two years of university language requirements may be met in one semester; additional courses taught in English or Spanish; administered by the University Studies Abroad Consortium (USAC) of which the University of Iowa is a member. Summer, semester or academic year. Requirements: 2.50 g.p.a. and good academic standing.

ABRD:3276 USAC San Sebastian Program
Intensive language study; up to two years of university language requirements may be met in one semester; additional courses taught in English or Spanish; administered by the University Studies Abroad Consortium (USAC) of which the University of Iowa is a member. Summer, semester or academic year. Requirements: 2.50 g.p.a. and good academic standing.

ABRD:3312 CIEE Buenos Aires Liberal Arts Program
Critical appreciation of Argentina and its importance in Latin America from perspective of social sciences and humanities; administered by the Council on International Educational Exchange (CIEE) on behalf of a consortium of which the University of Iowa is a member; for advanced Spanish students with strong language preparation. Requirements: 2.75 cumulative g.p.a. and six semesters of college-level Spanish. Recommendations: completion of Spanish language course in session prior to study abroad and college-level course work in Latin American Studies.
ABRD:3313 CIEE Bahia Liberal Arts Program
Special CIEE courses and direct enrollment in regular classes at two local universities; improvement of Portuguese language skills; the northeast region of Brazil and its Afro-Brazilian culture; administered by the Council on International Educational Exchange (CIEE) on behalf of a consortium of which the University of Iowa is a member. Requirements: 2.75 cumulative g.p.a., and four semesters of college-level Spanish or two semesters of college-level Portuguese.

ABRD:3314 CIEE Sao Paulo Liberal Arts Program
5,12 s.h.
Language-learning course in Brazil; direct enrollment in a host of English-taught courses at Pontificia Universidade Catolica de Sao Paulo; subjects range from anthropology, history, and international relations to business administration, journalism, and performing arts; administered by the Council on International Educational Exchange (CIEE) on behalf of a consortium of which the University of Iowa is a member; for students with multiple levels of Portuguese fluency. Requirements: 2.75 g.p.a., and four semesters of college-level Spanish; two semesters of college-level Portuguese. Recommendations: Portuguese or Spanish course taken within past year.

ABRD:3315 CIEE Sao Paulo Business and Culture Program
Oppportunity to begin or continue study of Portuguese while studying issues related to economy and business in Brazil and Latin America alongside Brazilian and other international students at the International Program in Management at the prestigious Getulio Vargas Foundation; administered by the Council on International Educational Exchange (CIEE) on behalf of a consortium of which the University of Iowa is a member; for students with varying levels of Portuguese language skills. Requirements: 3.00 cumulative g.p.a. and three semesters of microeconomics, macroeconomics, accounting, finance, management, marketing, or statistics.

ABRD:3316 CIEE Bahia Intensive Language and Culture
Intensive summer program to develop Portuguese language proficiency and a critical appreciation of Brazilian life and society; cultural immersion through classroom, homestay living, program excursions and activities; administered by the Council on International Educational Exchange (CIEE) on behalf of a consortium of which the University of Iowa is a member. Five weeks. Requirements: 2.75 cumulative g.p.a., and four semesters of college-level Spanish or two semesters of college-level Portuguese.

ABRD:3317 CIEE Santiago (Chile) Business and Culture Program
12 s.h.
Development of competency in Spanish language while studying issues related to local and regional business environment, management practices, and entrepreneurship in Chile and the southern cone; homestay living provides opportunities for cultural and linguistic immersion; administered by the Council on International Educational Exchange (CIEE) on behalf of a consortium of which the University of Iowa is a member; for students with varying levels of Spanish. Requirements: cumulative g.p.a. of 2.75. Recommendations: completion of Spanish language course within past year.

ABRD:3318 CIEE Santiago (Chile) Liberal Arts Program
arr.
Special CIEE courses and direct enrollment with Chilean students in regular courses at the Pontificia Universidad Catolica de Chile and the Universidad de Chile; first-hand knowledge of contemporary issues and cultural patterns in Chile; administered by the Council on International Educational Exchange (CIEE) on behalf of a consortium of which the University of Iowa is a member. Semester or academic year. Requirements: 2.75 cumulative g.p.a. and six semesters of college-level Spanish.

ABRD:3321 USAC Studies in Chile
arr.
Intensive beginning-level Spanish language; advanced language, literature, civilization at third-year level; area studies. Some courses taught in English. Requirements: g.p.a. of at least 2.50.

ABRD:3323 CIEE Valparaiso Liberal Arts Program
12 s.h.
Special CIEE courses and direct enrollment with Chilean students in regular courses at the Universidad Catolica de Valparaiso; first-hand knowledge of contemporary issues to better understand Chilean society and an appreciation for Chilean history and identity; administered by the Council on International Educational Exchange (CIEE) on behalf of a consortium of which the University of Iowa is a member. Requirements: 2.75 cumulative g.p.a. and six semesters of college-level Spanish.

ABRD:3324 CIEE Monteverde Tropical Ecology and Conservation
10,12 s.h.
Rich understanding of tropical ecology through hands-on exposure, direct experimentation, study of theory, taxonomy of major groups, and observation of empirical patterns; science courses taught in English; Spanish-language course for various levels; travel to diverse ecosystems; administered by the Council on International Educational Exchange (CIEE) on behalf of a consortium of which the University of Iowa is a member. Requirements: 2.75 cumulative g.p.a. and two semesters of college-level biology. Recommendations: college-level ecology or environmental science course, and college-level Spanish.

ABRD:3325 CIEE Monteverde Sustainability and the Environment
12 s.h.
Insight into complexity of pressures that confront global biodiversity (e.g., population growth, consumption, urbanization, globalization); homestay with local families provides exposure to Spanish language and Costa Rican culture; administered by the Council on International Educational Exchange (CIEE) on behalf of a consortium of which the University of Iowa is a member; for students with an interest in environmental studies. Requirements: 2.75 g.p.a. and three semesters of college-level environmental studies. Recommendations: college-level Spanish.

**ABRD:3326 CIEE Santiago (DR) Liberal Arts Program**
12 s.h.
Enrollment in one of three distinct academic tracks based on language proficiency level; tracks offer a variety of courses on society, culture, economics, and politics of Hispaniola and the Greater Hispanic Caribbean; regional literature, history, and, and widely variant sociocultural issues facing the region; administered by the Council on International Educational Exchange (CIEE) on behalf of an academic consortium of which the University of Iowa is a member. Requirements: 2.75 cumulative g.p.a., 3.00 g.p.a. in Spanish language, and four semesters of college-level Spanish.

**ABRD:3327 CIEE Santo Domingo Liberal Arts Program**
12 s.h.
Direct enrollment at three local universities in a wide range of courses in humanities and social sciences, in addition to a number of CIEE advanced language and area studies courses; optional track of study focused solely on the region with courses in social and ethno-cultural identity, authors of Hispanic Caribbean, and Dominican-Haitian relations; administered by the Council on International Educational Exchange (CIEE) on behalf of an academic consortium of which the University of Iowa is a member. Requirements: 2.75 cumulative g.p.a. and five semesters of college-level Spanish. Recommendations: Spanish language course within past year.

**ABRD:3328 CIEE Guanajuato Liberal Arts Program**
arr.
Personal reflection of identity, culture, and contemporary society encouraged through active reading and writing; development of Spanish language proficiency in course work and homestay living; Mexican literature, history, and art studied alongside Mexican peers at the University of Guanajuato; courses in migration, revolution, and community-based Spanish specially designed for CIEE. Requirements: 2.75 g.p.a. and four semesters of college-level Spanish.

**ABRD:3332 CIEE Lima Liberal Arts Program**
arr.
CIEE-taught course, homestay, and city-based cultural activities with direct enrollment alongside Peruvian students at the Pontificia Universidad Catolica del Peru; immersion to refine language skills and develop understanding of contemporary Peruvian society; administered by the Council on International Educational Exchange (CIEE) on behalf of a consortium of which the University of Iowa is a member. Requirements: 2.75 cumulative g.p.a. and five semesters of college-level Spanish. Recommendations: completion of Spanish language course within past year.

**ABRD:3333 CIEE Guanajuato Summer Language and Culture Program**
3,6 s.h.
Opportunity to further develop Spanish language skills while expanding knowledge and understanding of Mexico; key elements include homestay, day-to-day engagement with local community, and intensive Spanish-taught courses in Mexican studies. Requirements: 2.75 cumulative g.p.a. and five semesters of college-level Spanish.

**ABRD:3334 CIEE Valparaiso Language in Context**
arr.
Development of Spanish language skills; Chile and its role in Latin America; intensive language study and choice of courses in history, literature, economics, and international relations taught in English; excursions, homestay, and opportunities for community service; administered by the Council on International Educational Exchange (CIEE). Requirements: g.p.a. of 2.75.

**ABRD:3335 USAC Heredia Program**
arr.
Culture and physical beauty of Costa Rica experienced through specially designed courses combined with family home stay and some program travel; administered by the University Studies Abroad Consortium (USAC) of which the University of Iowa is a member. Requirements: cumulative g.p.a. of 2.50.

**ABRD:3336 USAC Puntarenas Program**
arr.
Expansion of Spanish language skills through personal interaction with host culture in homestay setting, field trips and optional tours, and accelerated classroom study according to tracks; administered by the University Studies Abroad Consortium (USAC) of which the University of Iowa is a member. Requirements: 2.50 g.p.a. and good academic standing.

**ABRD:3337 USAC San Ramon Program**
arr.
Life and health sciences, Spanish language and culture studies program; tropical ecology, tropical marine biology, conversation biology, and environmental policy courses taught in English; science curriculum combined with Spanish language or literature classes designed by tracks according to level; administered by the University Studies Abroad Consortium (USAC) of which the University of Iowa is a member; for science majors interested in learning more about ecology and conservation biology in Costa Rica. Requirements: 2.50 g.p.a. and one year of college-level general biology with lab.

**ABRD:3338 USAC Havana Program**
3,6 s.h.
Appreciation of Cuban society through area studies course work in history, culture, and politics of the region; courses taught in English and Spanish; administered by the University Studies Abroad Consortium of which the University of Iowa is a member. Requirements: 2.50 g.p.a. and good academic standing.

**ABRD:3339 CIEE Buenos Aires Community Public Health Program**
9 s.h.
Classroom-based theory and language instruction to support extensive, offsite field work; examination of Argentine health care system through lens of social sciences; exposure to challenges facing global health arena and diversity of solutions being implemented locally to resolve them. Summer. Requirements: 2.75 cumulative g.p.a. and five semesters of college-level Spanish. Recommendations: college-level course work in public health, and course work in history or politics of Latin America or Argentina.

**ABRD:3342 Brazilian Carnival: Music and Dance**  
**3 s.h.**

**ABRD:3343 CIEE Sao Paulo Intensive Language and Culture**  
CIEE Sao Paulo Intensive Language and Culture program helps students develop Portuguese language fluency and learn about Brazilian culture; 6 s.h. of language course work may advance to an academic year in language progression at the University of Iowa. Requirements: completion of at least one semester of college-level Portuguese or two semesters of college-level Spanish. Summer; for students with background in Mandarin Chinese; 2.75 g.p.a., and good academic and disciplinary standing.

**ABRD:3352 International Perspectives: Xicotepec**  
**arr.**

Introduction to providing service to communities in underdeveloped countries through discipline-specific projects to improve community life in Xicotepec, Mexico; cultural and professional preparation for team work in an international environment; service-learning course in collaboration with Rotary International; Spring break in Xicotepec, Mexico.

**ABRD:3364 Pharmacy Rotations Abroad**  
**arr.**

Practicum experience; focus on best practices for pharmaceutical management, ways to enhance access to medicine; promotion in underserved and resource-limited environments abroad. Recommendations: successful completion of all requirements listed as prerequisites for rotations in the advanced practice experience syllabus.

**ABRD:3370 Spanish Language and Service Learning Ecuador**  
**arr.**

Spanish language and Ecuadorian civilization course work (6 s.h.) and 100 hours of community service learning in Cuenca, Ecuador. Two months in summer. Requirements: two years of college-level Spanish. 2.50 cumulative g.p.a., and good academic and disciplinary standing.

**ABRD:3372 USAC Florianopolis Program**  
**arr.**

Brazilian culture studies, global economy, and natural resource management; opportunity to develop language skills while taking courses taught in English by local faculty from the Universidade Federal de Santa Catarina; administered by the University Studies Abroad Consortium (USAC) of which the University of Iowa is a member. Summer, semester, or academic year. Requirements: cumulative g.p.a. of 2.50.

**ABRD:3401 CIEE Beijing Advanced Chinese Studies**  
**arr.**

Important topics in Chinese from a Chinese perspective; development of professional writing and research skills in Chinese; designed for students interested in using their superior level of Chinese to study international affairs, business, history, or Chinese literature.

**ABRD:3402 CIEE Beijing Intensive Chinese Language**  
**10,12 s.h.**

CIEE’s Intensive Chinese Language study abroad program at Peking University in Beijing, China, is one of the oldest and most recognized intensive Chinese language programs; the Peking University Center for Teaching Chinese houses over eight different language levels and many other elective courses; intensive language courses coupled with individual language tutorials, diversified field trips, modern housing facilities, and experienced onsite staff make the CIEE Study Center in Beijing an incredible place to study and learn under the auspices of the most famous university in China. Requirements: 2.75 g.p.a. and two to six semesters of college-level Chinese. Recommendations: completion of at least one Chinese area studies course before departure.

**ABRD:3403 CIEE Beijing Ethnic Identity and Cultural Studies**  
**12 s.h.**

Language study in Beijing, China; exploration of China; for students with background in Chinese, Tibetan, or Uyghur language. Requirements: cumulative g.p.a. of 2.75. Recommendations: one semester of college-level Chinese and previous course work in anthropology, sociology, development, religious studies, or global studies.

**ABRD:3411 Iowa in Tianjin**  
**arr.**

Chinese language, area studies, and folk art; based at Tianjin University of Technology. Summer or semester. Requirements: one to three years of college-level Chinese.

**ABRD:3415 CIEE Nanjing Intensive Chinese Language and Culture**  
**arr.**

CIEE’s intensive Chinese language and culture program in Nanjing, China; Chinese studies and immersion in a more traditional and accessible locale against the backdrop of a large developing Chinese city; for students with background in Mandarin Chinese. Requirements: 2.75 g.p.a. and two to six semesters of college-level Chinese. Recommendations: completion of one Chinese area studies course.

**ABRD:3425 CIEE Shanghai Accelerated Chinese Language**  
**10,12 s.h.**

Accelerated language program in Shanghai, China; one year of Chinese language training accomplished during summer; for intermediate and advanced Chinese language students. Requirements: cumulative g.p.a. of 3.00.

**ABRD:3426 CIEE Shanghai Advanced Chinese Studies**  
**12 s.h.**
CIEE study abroad program in Shanghai, China; development of advanced communicative skills in Mandarin Chinese through small classes, tutors, and language clinics; contemporary economic and political issues affecting China and effects of China as a rising power in the world today; application of skills learned in classroom to environment outside through independent field work and volunteer opportunities; for students with background in Mandarin Chinese. Requirements: 3.00 g.p.a., four to six semesters of college-level Chinese, and completion of one Chinese area studies course.

ABRD:3427 CIEE Shanghai Business, Language, and Culture
9,12 s.h.

CIEE study abroad program in Shanghai, China; Chinese language training at standard and intensive levels; courses (taught in English) in business, marketing, economics, international relations, and area studies; contemporary business issues affecting China; effects of China as a rising power in the business world today; for students majoring in business with no Chinese language background and those who have studied Chinese for several semesters. Requirements: 2.75 g.p.a., seven semesters or less of college-level Chinese, and three or more semesters of microeconomics, macroeconomics, accounting, finance, management, or marketing.

ABRD:3428 CIEE Shanghai China in a Global Context
12 s.h.

CIEE study abroad program in Shanghai, China; focus on China in a global context; Chinese language training at standard and intensive levels; courses (taught in English) in global studies, economics, international relations, and area studies; for students with no Chinese language background and those who have studied Chinese for several semesters. Requirements: 2.75 g.p.a. and seven semesters or less of college-level Chinese. Recommendations: completion of one Chinese area studies course.

ABRD:3442 CIEE Taipei Communications, Business, and Political Economy
arr.

Intensive Mandarin Chinese language courses; courses in business, communications, political sciences, and other academic areas taught in English; internships in various fields; administered by the Council on International Educational Exchange (CIEE) on behalf of an academic consortium of which the University of Iowa is a member. Requirements: cumulative g.p.a. of 2.75. Recommendations: one Chinese area studies course.

ABRD:3443 CIEE Taipei Intensive Chinese Language and Culture
12 s.h.

CIEE intensive Chinese language and culture program in Taipei, Taiwan; for beginning through advanced language students who have an interest in improving their Chinese; opportunity to take non-language courses taught in English to aid understanding of Taiwanese culture and society; flexible and supportive environment to experience life at one of Taiwan’s most prestigious national universities. Requirements: 2.75 g.p.a. and two to eight semesters of college-level Chinese. Recommendations: completion of one Chinese area studies course.

ABRD:3445 International Development: India
arr.

Exploration of student interests in social entrepreneurship, global health, microfinance, cultural production, environmental sustainability, or other development issues in India; varied disciplinary perspectives (i.e., public health, business, social work, geography, art); student work with Indian NGOs employing a diverse variety of techniques to address social problems such as child labor, health care for the poor, illiteracy, and disability services; led by UI faculty. Winter session.

ABRD:3500 Study Abroad
arr.

Students participating in study abroad programs at other U.S. or foreign universities maintain their status at the University of Iowa by registering for this course.

ABRD:3501 Study Abroad
arr.

ABRD:3502 Study Abroad Independent Enrollment
arr.

ABRD:3510 International Student Exchange Program Direct
arr.

Study at some ISEP member institutions in Brazil, Chile, Costa Rica, Estonia, Ghana, Italy, Malta, The Netherlands, New Zealand, South Africa, Thailand, the United Kingdom; fields and terms vary.

ABRD:3515 Business Internships Abroad
arr.

Orientation, academic course work, internship; London, Madrid and Paris. Requirements: g.p.a. of at least 2.75, 45 s.h. earned, at least one semester at the University of Iowa; and Spanish proficiency for Madrid program or French proficiency for Paris program.

ABRD:3530 Elementary Student Teaching Abroad
arr.

Supervised student teaching in an overseas school.

ABRD:3531 Secondary Student Teaching Abroad
arr.

Supervised student teaching in an overseas school.

ABRD:3580 USAC Direct Programs
arr.

Direct enrollment in foreign universities in 15 countries. Semester or academic year.

ABRD:3601 Iowa Regents Semester in Australia: University of Newcastle
arr.

Opportunity to study at the University of Newcastle in Australia; full academic and social integration with Australian peers. Requirements: 2.50 minimum g.p.a. and sophomore standing.

ABRD:3602 Iowa Regents Semester in Australia: University of Tasmania
12 s.h.

Study at the University of Tasmania; full academic and social integration with Australian peers. Semester. Requirements: 2.50 minimum g.p.a. and sophomore standing at time of application.

ABRD:3712 Child Life Experiential Learning Program
3 s.h.
Preparation to work with children and their families in a variety of health care settings through a practical experience in Cape Town, South Africa; impact of illness, injury, trauma, and health care environments on patients and families; hands-on opportunity to explore how the Red Cross and hospitals operate on a daily basis. Requirements: good academic standing.

**ABRD:3750 Arabic Language and Culture in Morocco**
Moroccan colloquial Arabic, modern standard Arabic, and Moroccan culture; development of communication skills and cultural awareness through language study, homestays, cultural immersion; based in Fez, Morocco. Seven weeks in summer. Requirements: completion of General Education Program foreign language requirement and minimum g.p.a. of 3.00.

**ABRD:3751 Archaeology in Israel**
Opportunity to participate in an active archaeological dig alongside local professionals and faculty in Israel; part of an international consortium participating the Lautenschlage Tel Azekah archaeological excavation; morning excavation time complemented by daily afternoon lectures from leading local archaeologists and University of Iowa faculty. Requirements: good academic and disciplinary standing.

**ABRD:3805 Russian Politics and Foreign Affairs**
Courses in Moscow (Russian politics and institutions, Russian foreign policy) taught in English by Russian professors; additional basic Russian language course (1 s.h.). Summer.

**ABRD:3810 ACTR Contemporary Russian Program**
Russian language study; Russian economics, politics, and culture classes taught in English; content-based courses taught by faculty of the State University Higher School of Economics in Moscow; full-time resident director oversees academic and cultural programs and assists participants with academic, administrative and personal matters; for students and working professionals at all levels of Russian-language proficiency, including no prior study of the language. Requirements: good academic and disciplinary standing.

**ABRD:3811 ACTR Language & Area Studies**
Russian Language and Area Studies Program of the American Council of Teachers of Russian (ACTR); designed for improvement of oral, listening, reading and writing proficiency in Russian language; Russian history, politics, culture, and society; offered at one of three locations (St. Petersburg, Moscow, or Vladimir) with final placement determined by ACTR; full-time U.S. resident director provides ongoing logistical support and emergency assistance to participants. Requirements: four semesters of college-level Russian language.

**ABRD:3812 ACTR Business Russian Language & Internship Program**
Curriculum focusing on language of Russian business combined with an internship at a multinational company, business, or NGO agency in Russia; highly-individualized curriculum; offered at one of two locations (St. Petersburg or Moscow) with final placement determined by ACTR; full-time U.S. resident director provides ongoing logistical support and emergency assistance to participants; for intermediate- to near-native speakers of Russian. Requirements: prior Russian language study and a strong command of Russian grammar.

**ABRD:3830 USAC Studies in the Czech Republic**
Introductory Czech language and culture courses taught in English at Charles University. Summer, semester, or academic year.

**ABRD:4001 Lancaster University Exchange**
Reciprocal exchange programs between the University of Iowa and Lancaster University in Lancaster, England; full integration with British students in student housing and regular classes. Semester or academic year. Requirements: 3.00 cumulative g.p.a., junior or senior standing, declared major, and good understanding of requirements for major.

**ABRD:4002 University of Strathclyde Exchange**
Reciprocal exchange program between the University of Iowa and the University of Strathclyde in Glasgow, Scotland; full integration with British students in student housing and regular classes. Semester or academic year. Requirements: 3.00 cumulative g.p.a., junior or senior standing, declared major, and good understanding of requirements for major.

**ABRD:4003 University of Hull Exchange**
Reciprocal exchange programs between the University of Iowa and University of Hull in Kingston-upon-Hull, England; full integration with British students in student housing and regular classes. Semester or academic year. Requirements: 3.00 cumulative g.p.a., junior or senior standing, declared major, and good understanding of requirements for major.

**ABRD:4004 University of Birmingham Exchange**
Reciprocal exchange program between the University of Iowa and the University of Birmingham in Birmingham, England; full integration with British students in student housing and regular classes. Semester or academic year. Requirements: 3.00 cumulative g.p.a., junior or senior standing, declared major, and good understanding of requirements for major.

**ABRD:4055 Vienna Exchange Program**
Regular degree course work in business administration and economics at Wirtschaftsuniversität in Vienna, Austria; taught in English and German. Semester or academic year. Arranged through Tippie College of Business. Requirements: one year of college German, g.p.a. of at least 2.75, and relevant academic background.
ABRD:4056 Charles University Exchange  12 s.h.
The Czech Studies Program offered by the Charles University Faculty of Arts and Philosophy and the Institute of Czech Studies is a comprehensive program covering Czech language, literature, history, and culture; for students furthering their studies in Czech language and culture at intermediate level; especially well-suited for students interested in Slavonic studies or related disciplines. Requirements: one or two years of prior Czech language study and good academic standing.

ABRD:4057 Aalborg University Exchange  12 s.h.
Reciprocal exchange agreement between the University of Iowa and Aalborg University; students study in Denmark alongside local students in regular classes and standard student housing; language of instruction is Danish and there is a commitment to use of other languages of instruction where relevant, including a number of offerings taught in English (Spanish, German, and French) in various subjects and disciplines; particularly suitable for students interested in globalization, communication studies, political science, and psychology, who have a firm commitment to their major. Semester or academic year. Requirements: 2.80 cumulative g.p.a., completion of at least one semester in residence at the University of Iowa, and junior or senior standing during session abroad.

ABRD:4059 Dortmund University Exchange  arr.
Direct exchange program between the Technical University of Dortmund and the University of Iowa; students remain registered at their own institution and receive student status at the guest university; unique blend of courses that combine language and culture courses with academic work in student’s major and minor subjects; university studies and life outside the classroom are synthesized in a holistic learning process. Requirements: German language proficiency and cumulative g.p.a. of 2.80.

ABRD:4060 Giessen-Friedburg Engineering Exchange  12 s.h.
Reciprocal exchange for engineering students to study at the Giessen-Friedburg University of Applied Sciences; education/research collective with emphasis on practice-oriented research and development projects; main focus on engineering sciences; courses are application-oriented in subject and methodology; course work similar to that offered at the University of Iowa; academic credit may be earned in biomedical, chemical, civil, and environmental engineering. Semester or academic year. Requirements: two years of college-level German, 3.00 g.p.a., and relevant academic background.

ABRD:4063 University of Iceland Exchange  arr.
Reciprocal exchange program between the University of Iowa and the University of Iceland; a year of study in Reykjavik alongside local students in regular classes; option of selecting classes from those taught in English in different departments, or an academic year of intensive Icelandic language study; science majors interested in geophysics are encouraged to explore English-taught classes in geography, geology, and geophysics. Requirements: 2.80 cumulative g.p.a., completion of at least one semester in residence at the University of Iowa, and junior or senior standing during session abroad.

ABRD:4065 Tilburg University Exchange  3,12 s.h.
Tilburg University in the Netherlands offers English-language courses in business administration (accounting, applied microeconomics, finance, production management, international marketing, and electronic commerce) and other subjects; suitable for upper-level business majors and students pursuing an international business certificate. Requirements: 3.00 g.p.a. and junior or higher standing.

ABRD:4066 University of Nijmegen Exchange  12 s.h.
Reciprocal exchange agreement between the University of Iowa and Radboud University Nijmegen; students study in the Netherlands alongside local students in regular classes; language of instruction is Dutch and a number of classes throughout the curriculum are taught in English; particularly suitable for students interested in American studies, European studies, and pre-Law, as well as majors in German, linguistics, and political science; Dutch language not required for participation. Semester or academic year. Requirements: 2.80 cumulative g.p.a., completion of at least one semester in residence at the University of Iowa, and junior or senior standing during session abroad.

ABRD:4067 Bogazici University Exchange  arr.
Exchange program with Bogazici University in Istanbul, Turkey allows students to study in Turkey while fully integrating with Turkish students in student housing and regular classes; courses taught in English. Semester or academic year. Requirements: 3.00 minimum g.p.a. and junior or senior standing.

ABRD:4068 WHU-Otto Beisheim School of Management Exchange  arr.
WHU-Otto Beisheim School of Management is a privately financed business school founded in 1984 near Koblenz, Germany; cities of Cologne, Mainz, and Frankfurt can be reached in under an hour; WHU maintains a network of more than 150 partner universities worldwide and has consistently high national and international rankings; areas of study include economics, finance, accounting, management, marketing, and entrepreneurship; courses taught in English; a variety of courses are offered for students who wish to continue study of German. Requirements: completion of at least one year of university study, good academic standing, and sufficient command of English to follow selected course of study; and minimum 2.75 g.p.a. for undergraduates.

ABRD:4300 Curitiba Exchange Program  12 s.h.
Reciprocal exchange to study at FAE Centro Universitario (Curitiba, Brazil); courses from regular curriculum for local students, in any one of their undergraduate programs in economics, business, mechanical/environmental engineering, or letters; students must have sufficient Portuguese language ability to follow courses taught in Portuguese. Semester or calendar year. Requirements: 2.80 g.p.a. and advanced-level Portuguese.

ABRD:4422 Kanda University of International Studies Exchange  arr.
Reciprocal exchange program between the University of Iowa and Kanda University of International Studies; year of study at the Japanese Language and Culture Program at Kanda; small, ultramodern university; facilities designed to promote cross-cultural experience; Multilingual Communication Center has resources and equipment pertaining to Japanese, Korean, Spanish, Portuguese, Indonesian, Vietnamese, and Thai. Requirements: 3.00 minimum g.p.a. and completion of at least one semester in residence at the University of Iowa. Recommendations: strong record in Japanese.

**ABRD:4424 University of Meiji Exchange**  
Reciprocal exchange program between the University of Iowa and Meiji University; study in Tokyo as visiting foreign student in a department of one of Meiji’s various academic divisions; for undergraduates and graduate students with an appropriate research interest; the Japanese academic calendar runs late March through late January the following year, which involves spring through fall semesters at the University of Iowa. Requirements: 3.00 minimum g.p.a., sophomore standing or higher at time of enrollment in Meiji, and enrollment in fourth-year Japanese at time of application; graduate students intending to do research must have an appropriate project and proficiency at third-year level Japanese; graduate students participating in English-taught curriculum of the Special Graduate Student Exchange Program, Department of Political Science and Economics, must have sufficient Japanese to function in everyday living.

**ABRD:4425 Nagoya University of Foreign Studies Exchange**  
Language instruction at all levels and Japanese studies taught in English at Nagoya University of Foreign Studies. Semester or year.

**ABRD:4426 University of Nanzan Exchange**  
Reciprocal exchange program between the University of Iowa and Nanzan University in Nagoya; study at Nanzan’s Center for Japanese Studies; living options include a home stay program that places students in a Japanese home as a family member or residence hall accommodations; for students interested in developing fluency in Japanese language. Semester or year. Requirements: 3.00 minimum g.p.a. and completion of at least one semester in residence at the University of Iowa. Recommendations: strong record in Japanese.

**ABRD:4430 Teaching and Learning in Korea Program**  
Teach and Learn in Korea (TaLK) sends native English speakers to teach English to elementary school children in South Korea; prior to leaving for South Korea, participants receive training to teach English as a second language from UI College of Education faculty and have access to crash courses in Korean language and culture; on-site orientation, training, and excursions familiarize participants with Korean classrooms and culture; free housing, airfare reimbursement, and monthly stipend; no prior knowledge of Korean language/culture required. Requirements: junior standing.

**ABRD:4431 Ajou University Exchange**  
The Ajou University Exchange program is designed for students interested in South Korea; emphasis on global education, Ajou University offers a variety of courses taught in English; excellent opportunity for international and Korean students to take classes in their chosen fields while immersed in an international atmosphere; beneficial for international students anticipating careers in Asia or with multinational corporations, as well as to those seeking advanced degrees in international or area studies. Semester or academic year. Requirements: good academic and disciplinary standing.

**ABRD:4432 Ewha Womans University Exchange**  
The Ewha Womans University Exchange program offers a coeducational international program and welcomes all students, male and female, to study for one or two semesters as a nondegree seeking exchange or visiting student; variety of high-quality courses in various fields, including studies on Asia and Korea. Requirements: cumulative g.p.a. of 2.50.

**ABRD:4433 KAIST Exchange**  
Bilateral exchange agreement between the University of Iowa and the Korea Advanced Institute of Science and Technology (KAIST); study abroad in Korea at KAIST; wide range of classes offered on campus; for mature and independent students looking for more direct interaction with local students and culture. Requirements: good academic and disciplinary standing.

**ABRD:4436 Sungkyunkwan University Exchange**  
The University of Iowa and the University of Seoul maintain a bilateral exchange agreement that allows UI students to study abroad in Korea at UOS; wide range of English-taught classes in a number of different colleges, including liberal arts, humanities, social science, business, and engineering. Requirements: good standing at the University of Iowa.

**ABRD:4437 Business and Culture in China**  
3 s.h.  
Exploration of business and cultural environment through a University of Iowa faculty-led study program in China; lectures, readings, case studies, company visits, and immersion in cultural experiences; development of greater awareness of Chinese history, politics, business, economics, and culture; topics may include Chinese business culture and relationships, local companies going global; business strategies of multinational companies in Chinese market; United States-China trade relations; entrepreneurship, Chinese consumer, sustainability, and social responsibility. Prerequisites: ECON:1100 and ECON:1200. Requirements: 2.75 cumulative and UI g.p.a., and minimum of 30 s.h. completed prior to program.
ABRD:4439 Chinese University of Hong Kong Exchange
The Chinese University of Hong Kong (CUHK) Accounting Exchange Program provides University of Iowa accounting students the ability to integrate a unique international experience with their academic program. Semester. Requirements: 3.00 Ul and cumulative g.p.a., completion of one semester toward Ul accounting major, and good academic standing.

ABRD:4440 Hong Kong University of Science and Technology Exchange
The University of Iowa and Hong Kong University of Science (HKUST) maintain a bilateral exchange agreement that allows engineering undergraduate students to study abroad in Hong Kong at HKUST; courses taught in English alongside with local students and other exchange students. Requirements: engineering major and 2.70 g.p.a.

ABRD:4441 City University of Hong Kong Exchange
The University of Iowa and the City University of Hong Kong (CityU) have initiated an agreement allowing the schools to exchange students on a one-to-one ratio; one of the leading universities in Asia, CityU has a wide range of English-taught classes; originally targeted toward science and engineering majors, this agreement is open to students in all majors; wide range of courses that meet academic needs of students in liberal arts and science, business, and engineering. Requirements: good academic and disciplinary standing.

ABRD:4442 Seoul National University Exchange
The University of Iowa and Seoul National University (SNU) maintain a bilateral exchange agreement that allows students to study abroad in Korea at SNU; wide range of English-taught classes offered in a number of different colleges including engineering, business, liberal arts, humanities, social science, and education. Requirements: minimum g.p.a. of 3.00 and sophomore or higher standing.

ABRD:4443 Peking University Engineering Exchange
College of Engineering partnership with Peking University; wide range of engineering classes offered; intensive summer session. Requirements: engineering major and good academic standing.

ABRD:4510 International Student Exchange Program
Study on reciprocal exchange at foreign universities worldwide; some instruction in English. Year-long, one semester, and summer options. Requirements: 40 s.h. of credit, g.p.a. of at least 3.00, and in some cases, command of a foreign language.

ABRD:4701 University of KwaZulu-Natal Exchange
Introduction to South African culture from varied academic perspectives, summer session. Enrollment in regular University courses; fall and spring semesters.

ABRD:4901 Universidad Autónoma de Baja Journalism Exchange

Project VITAL students from Canada, the United States, and Mexico work to develop a better understanding and journalistic reporting of environmental, social, economic, and political issues surrounding management of continental water supplies in a variety of contexts, including impacts of global warming; exchange students and several hundred non-exchange peers are connected to one another, faculty, and subject experts through individual journalistic projects, a series of special forums, and development of a project web site. Requirements: nomination by School of Journalism and Mass Communication.

ABRD:4902 Universidad de Colima Journalism Exchange

Project VITAL students from Canada, the United States, and Mexico work to develop a better understanding and journalistic reporting of environmental, social, economic, and political issues surrounding management of continental water supplies in a variety of contexts, including impacts of global warming; exchange students and several hundred non-exchange peers are connected to one another, faculty, and subject experts through individual journalistic projects, a series of special forums, and development of a project web site. Requirements: nomination by School of Journalism and Mass Communication.

ABRD:4903 King's College Journalism Exchange

Project VITAL students from Canada, the United States, and Mexico work to develop a better understanding and journalistic reporting of environmental, social, economic, and political issues surrounding management of continental water supplies in a variety of contexts, including impacts of global warming; exchange students and several hundred non-exchange peers are connected to one another, faculty, and subject experts through individual journalistic projects, a series of special forums, and development of a project web site. Requirements: nomination by School of Journalism and Mass Communication.

ABRD:4904 Mount Royal College Journalism Exchange

Project VITAL students from Canada, the United States, and Mexico work to develop a better understanding and journalistic reporting of environmental, social, economic, and political issues surrounding management of continental water supplies in a variety of contexts, including impacts of global warming; exchange students and several hundred non-exchange peers are connected to one another, faculty, and subject experts through individual journalistic projects, a series of special forums, and development of a project web site. Requirements: nomination by School of Journalism and Mass Communication.

Graduate
ABRD:6064 Erasmus/Rotterdam School of Management Exchange
Reciprocal exchange program between the University of Iowa and Erasmus University Rotterdam; full-time students in M.B.A. and M.Ac. programs study for a semester in Rotterdam, The Netherlands; students from Tippie School of Management take courses in Rotterdam School of Management during fall semester; students from M.Ac. program take courses offered through Rotterdam School of Management's Master Programme in Accounting and Control during spring semester. Requirements: completion of at least one year of graduate study prior to participation in exchange and good academic standing; at least three years of work experience and non-Dutch citizen for M.B.A. student.
Sustainability

Coordinator

• Joel F. Wilcox

Undergraduate certificate: sustainability
Faculty: http://sustainability.uiowa.edu/teaching-and-research/certificate/advisory-committee-members/
Web site: http://sustainability.uiowa.edu/teaching-and-research/certificate/

For decades, world leaders have defined sustainability as the implementation of policies, processes, and practices that meet the needs of the present without compromising the ability of future generations to meet their own needs. Achievement of sustainability requires an understanding of human and environmental systems and the complex interactions between them.

The Certificate in Sustainability provides students with the knowledge and skills they will need in order to contribute to sustainable systems and their interactions, especially those related to energy, society, culture, economics, the built environment, health, and public policy. The program helps students become effective leaders and agents of change for sustainability in a wide range of vocations, such as academic researcher, teacher, corporate officer, technology specialist, farmer, grassroots advocate, or government official.

The Certificate in Sustainability is administered by University College.

Undergraduate Program of Study

• Certificate in Sustainability

Certificate

The Certificate in Sustainability requires 24 s.h. of credit. The certificate program is open to current University of Iowa undergraduate students and to all individuals who hold a bachelor's degree and are not enrolled in a graduate or professional degree program. Students must maintain a g.p.a. of at least 2.00 in work for the certificate.

Individuals must declare their intent to earn the certificate; see the Certificate in Sustainability web site for details.

Sustainability embraces many disciplines, methodologies, and institutional practices. Certificate students must have knowledge of the multidisciplinary breadth of the field, which is represented by the program's four areas of breadth electives: changing environments and human health; energy, climate, and built environments; ethics, economics, and public policy; and the power of culture and society. They also must have experience with analyzing real-life problems in and outside of the classroom and working collaboratively to solve such problems.

Work for the certificate includes three introductory core courses; four breadth electives—one from each of the program's four elective areas; and one project course. Students may be able to count some certificate courses toward requirements for their majors or minors. They may count a maximum of three courses in a single department or program toward the certificate. A maximum of 6 s.h. of approved transfer credit may be counted toward the certificate. Certificate courses may not be taken pass/nonpass. A course may be used to satisfy only one certificate requirement.

The Certificate in Sustainability requires the following course work.

INTRODUCTORY CORE

Students complete the following three introductory core courses.

EES:1080/ENVS:1080 Introduction to Environmental Science
ENGR:2013 Introduction to Sustainability
GEOG:1070 Contemporary Environmental Issues

BREADTH ELECTIVES

Students complete at least 3 s.h. in each of the following four breadth areas, choosing from the courses in each list below.

Changing Environments and Human Health

BIOL:2346 Vertebrate Zoology
BIOL:2374/GEOG:2374 Biogeography
BIOL:2673/ENVS:2673 Ecology
CEE:2150 Natural Environmental Systems
CHEM:4873 Atmospheric and Environmental Chemistry
EES:1040 Evolution and the History of Life
EES:1400 Natural Disasters
EES:3070 Marine Ecosystems and Conservation
EES:3080 & ENVS:3000 Introduction to Oceanography - Environmental Sciences Seminar
EES:3390 Integrated Watershed Analysis
EES:4630 Hydrogeology
EES:4700/ENVS:4700 Evolution of Ecosystems
GEOG:1020 The Global Environment
GEOG:2950 Environmental Conservation
GEOG:3070 Hungry Planet: Global Geographies of Food
GEOG:3310 Landscape Ecology
GEOG:3320/EES:3260 Wetlands: Function, Geography, and Management
GEOG:4150 Health and Environment: GIS Applications
HIST:4160 History of Public Health
HIST:4162 History of Global Health
HIST:4605 Disease, Politics, and Health in South Asia
IALL:3131 Ecology
IALL:3163 Conservation Biology
OEH:3210/GEOG:3210 Health, Work, and the Environment
OEH:4210/EPID:4210 International Health
OEH:4240 Global Environmental Health

Energy, Climate, and Built Environments

ARTH:3090 Contemporary Architecture
CBE:2030 Energy and Society
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CEE:3155</td>
<td>Principles of Environmental Engineering</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>CEE:4102</td>
<td>Groundwater</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>CEE:4103</td>
<td>Water Quality</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>CEE:4157</td>
<td>Environmental Engineering Design</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>CEE:4158/OEH:4920</td>
<td>Solid and Hazardous Wastes</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>CEE:4159/CBE:4459</td>
<td>Air Pollution Control Technology</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>CEE:4788/PHAR:8788</td>
<td>International Perspectives: Xicotepec</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>CEE:4995</td>
<td>Contemporary Topics in Civil and Environmental Engineering (when topic is public transit operations and planning)</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>CEE:5092</td>
<td>Graduate Seminar: Environmental Engineering Seminar</td>
<td>0 s.h.</td>
</tr>
<tr>
<td>ECE:5630</td>
<td>Sustainable Energy Conversion</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ECE:5995</td>
<td>Contemporary Topics in Electrical and Computer Engineering (when topic is energy harvesting: solar, wind and ocean energy conversion systems)</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>EES:1290</td>
<td>Energy and the Environment</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>EES:3360/GEOG:3360</td>
<td>Soil Genesis and Geomorphology</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>EES:4720</td>
<td>Glacial and Pleistocene Geology</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>EES:4790</td>
<td>Engineering Geology</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>EES:5120</td>
<td>Global Change Seminar</td>
<td>1-2 s.h.</td>
</tr>
<tr>
<td>GEOG:2310/EES:2310</td>
<td>Introduction to Climatology</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>GEOG:2930</td>
<td>Water Resources</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>GEOG:3750</td>
<td>Environmental Quality: Science, Technology, and Policy</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>GEOG:4750/URP:4750</td>
<td>Environmental Impact Analysis</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>GEOG:4930</td>
<td>Urban Geography</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>IE:4550</td>
<td>Wind Power Management</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ME:4048</td>
<td>Energy Systems Design</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>OEH:3210/GEOG:3210</td>
<td>Health, Work, and the Environment</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>OEH:4240</td>
<td>Global Environmental Health</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>URP:3001</td>
<td>Planning Livable Cities</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>URP:6253</td>
<td>Healthy Cities and the Environment</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

### Ethics, Economics, and Public Policy

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>AMST:1154</td>
<td>Food in America</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>AMST:3047</td>
<td>American Disasters</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>AMST:3050</td>
<td>Topics in American Cultural Studies (when topic is nature and the American mind: environment and sustainability in U.S. history)</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>AMST:3063</td>
<td>American Ruins</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>AMST:3090</td>
<td>Seminar in American Cultural Studies (when topic is ecocriticism: the culture of nature in the U.S.)</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ANTH:2100</td>
<td>Anthropology and Contemporary World Problems</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ANTH:2261</td>
<td>Human Impacts on the Environment</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ANTH:3103</td>
<td>Environment and Culture</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ANTH:3112</td>
<td>Environmentalisms</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ANTH:3260</td>
<td>Pleistocene Peopling of the Americas</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ANTH:3282</td>
<td>Animals, Culture, and Food</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ANTH:4130/RELS:4730</td>
<td>Religion and Environmental Ethics</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ARTH:3090</td>
<td>Contemporary Architecture</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>BIOL:1260</td>
<td>Plants and Human Affairs</td>
<td>2-3 s.h.</td>
</tr>
<tr>
<td>CBE:2030</td>
<td>Energy and Society</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>CHEM:1050</td>
<td>Technology and Society</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>CW:3210/INTD:3210</td>
<td>Creative Writing and the Natural World</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ENGL:2193/GWSS:2193</td>
<td>Literature, Culture, and Women (when topic is women's nature)</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ENGL:3105</td>
<td>Topics in Popular Culture (when topic is food studies and popular culture)</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ENGL:3120</td>
<td>Prose by Women Writers (when topic is Rachel Carson, Jane Jacobs, and their legacy)</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>Course Code</td>
<td>Course Title</td>
<td>Credits</td>
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<tr>
<td>-------------</td>
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</tr>
<tr>
<td>ENGL:3130</td>
<td>Topics in Film and Literature (when topic is U.S. environmental literature)</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ENGL:3152</td>
<td>Literature and Society (when topic is capturing animals)</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>ENGL:3510</td>
<td>Topics in Transnational Literature (when topic is story of water)</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>FREN:1007</td>
<td>Nature/Ecology French Philosophy and Fiction</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>GEOG:1010</td>
<td>Introduction to Human Geography</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>GEOG:1090</td>
<td>Globalization and Geographic Diversity</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>GEOG:2110</td>
<td>Population Geography: Societies in Flux</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>GEOG:2410</td>
<td>Environment and Development</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>LLS:1068</td>
<td>Wilderness Appreciation</td>
<td>1 s.h.</td>
</tr>
<tr>
<td>RELS:3976/AINS:3276</td>
<td>American Indian Environmentalism</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>RHET:3700</td>
<td>Advocacy and Sustainability: Crafting Stories of People, Place, and Resilience</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>SRM:1040</td>
<td>The Good Society</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>TDSN:3200</td>
<td>Product Design</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>TDSN:3210/THTR:3206</td>
<td>Furniture Design I</td>
<td>4 s.h.</td>
</tr>
</tbody>
</table>

**PROJECT COURSES**

Students complete 3 s.h. from these.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMST:3050</td>
<td>Topics in American Cultural Studies (when topic is environmental history; food studies; nature in collections and museums)</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>CBE:5405</td>
<td>Green Chemical and Energy Technologies</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>CEE:3141</td>
<td>Design With the Developing World</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>CEE:4107/CBE:4410</td>
<td>Sustainable Systems</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>CL:3222</td>
<td>City as Text/Text as City</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>CNW:3660</td>
<td>Multimedia Writing (when topic is the green economy: environmental writing and filmmaking)</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>CNW:4642</td>
<td>Team Writing for Business (when topic is sustainability)</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>EES:3150</td>
<td>Sustainability Project</td>
<td>arr.</td>
</tr>
<tr>
<td>ENGL:4000</td>
<td>English Honors Seminar (when topic is the story of water)</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>GEOG:3001</td>
<td>Special Topics (when topic is international development)</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>GEOG:3340</td>
<td>Ecosystem Services: Human Dependence on Natural Systems</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>GHS:4100</td>
<td>Topics in Global Health</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>INTM:3750</td>
<td>Art and Ecology</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>MKTG:4250</td>
<td>Marketing and Sustainability</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>TDSN:6295</td>
<td>Design for Production and Business (when topic is special issues and topics in design)</td>
<td>4 s.h.</td>
</tr>
</tbody>
</table>
Undergraduate Research Experiences

Director
• Lon D. Moeller

Undergraduate Program of Study

EPSCoR Research Internship
Web site: http://iowaepscor.org

Iowa NSF EPSCoR (Experimental Program to Stimulate Competitive Research) supports summer research internships funded by the National Science Foundation for University of Iowa undergraduates. The EPSCoR program involves partnerships between the University of Iowa, Iowa State University, and the University of Northern Iowa for research on renewable energy (wind energy and biofuels), energy efficiency, and energy policy. The program’s goals are to increase the number of students who choose careers in the STEM fields—science, technology, engineering, and mathematics—and to help the State of Iowa advance its capacity and competitiveness in research and technology.

Each intern is a member of a research group working on a specific project. Interns are mentored by the research group’s faculty leader and graduate students and are expected to do research and to participate in weekly lab meetings and other scheduled activities of the group. At the end of the program, they have the opportunity to present their research findings in a poster session. Interns also interact with other student interns and participate in seminars, research lab tours, field trips, and social events.

Internships generally last eight to ten weeks, starting in late May or early June and ending in August. Most interns receive a stipend; in addition, room and board may be provided for students who live on campus during their internships. Application deadline is March 30 for the following summer.

Contact the Department of Chemical and Biochemical Engineering for more information.

Additional Undergraduate Programs

Research Experience for Undergraduates in Microbiology
Web site: http://www.medicine.uiowa.edu/microbiology/summer/

The Department of Microbiology offers URES:4130 Research Experience for Undergraduates in Microbiology, a 10-week summer program for qualified undergraduate students who are studying microbiology or other biological sciences and are interested in pursuing careers in science. Participants conduct research on a project they select, under the direct supervision of a faculty member.

Each participant receives a stipend and an allowance for food. The program reimburses participants for travel expenses and provides housing.

Applicants must be U.S. citizens or permanent residents who have completed their sophomore or junior year in a bachelor’s degree program in the biological sciences. Application materials should include a completed online application, transcript, and two letters of recommendation. Deadline to apply is mid-February for the following summer.

Visit the program's web site or contact the Department of Microbiology, Carver College of Medicine, for more information.

Summer Undergraduate MSTP Research Program
Web site: http://www.healthcare.uiowa.edu/mstp/New/mstp/summer/index.htm

The Summer Undergraduate MSTP Research Program is an intensive 10-week experience for undergraduates interested in becoming physician scientists. Participants gain experience in research laboratories and exposure to clinical medicine and medically relevant research in preparation for careers in academic medicine.

Students conduct research in the laboratories of biomedical sciences faculty members, shadow physician scientists in clinical settings, participate in career development seminars, and attend a weekly seminar series focusing on the intersection of science and medicine.

Participants receive a stipend and are reimbursed for most of their travel expenses. The program provides lodging on campus in University housing.

Applicants must be U.S. citizens or permanent residents who will have completed their junior year in a bachelor’s degree program in the biological or physical sciences by the summer of entry. Applicants should submit an application form (available on the program's web site); an official college transcript; and two letters of recommendation. Application deadline is early February for the following summer.

Contact the Medical Scientist Training Program, Carver College of Medicine, for more information.

Courses

Lower-Level Undergraduate
URES:2500 EPSCoR Undergraduate 0 s.h.
Research
Participation in Experimental Program to Stimulate Competitive Research (EPSCoR) undergraduate research internship.

Upper-Level Undergraduate and Graduate
URES:3100 Iowa Center for Research by Undergraduates Research Ambassador 0-1 s.h.
Promotion of undergraduate research from all disciplines within campus community; hosting various on-campus events, leading workshops, presentations at student organization meetings and in-class; leadership and public speaking; regular meetings with ICRU staff.
<table>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tr>
<td>URES:3200</td>
<td>Topics in Undergraduate Research</td>
<td>1-3 s.h.</td>
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<tr>
<td></td>
<td>Upper-level, interdisciplinary seminar and</td>
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<td>undergraduate research leadership; discussion of</td>
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<td></td>
<td>research and creative work on a broad level.</td>
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<td>Requirements: current involvement in research or</td>
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<td>creative project with UI faculty or staff member</td>
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<td>for at least one full semester or one summer</td>
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<td>session prior to start of course.</td>
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<tr>
<td>URES:3992</td>
<td>Undergraduate Research and Creative Projects</td>
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<td>Independent research or pursuit of a creative</td>
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<td></td>
<td>project under mentorship of a faculty supervisor</td>
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<tr>
<td>URES:3993</td>
<td>Undergraduate Research and Creative Projects</td>
<td>1-4 s.h.</td>
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<td>Independent research or pursuit of a creative</td>
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<td>project under mentorship of a faculty supervisor</td>
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<td>URES:3994</td>
<td>Undergraduate Research and Creative Projects</td>
<td>1-4 s.h.</td>
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<td>Independent research or pursuit of a creative</td>
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<td>project under mentorship of a faculty supervisor</td>
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<td>URES:3995</td>
<td>ICRU Research Fellow</td>
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<td>Recognition of undergraduates involved in</td>
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<td>scholarly efforts of UI faculty and research</td>
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<td>staff; work on specific research and/or creative</td>
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<td>projects under selected mentors; funded annually</td>
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<td>by the Iowa Center for Research by Undergraduates</td>
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<td>(ICRU) through a competitive application process.</td>
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<td>Requirements: selection as ICRU Fellow.</td>
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<tr>
<td>URES:4130</td>
<td>Research Experience for Undergraduates in</td>
<td>0 s.h.</td>
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<tr>
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<td>Microbiology</td>
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<td>URES:4150</td>
<td>Undergraduate MSTP Research</td>
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<td>URES:4170</td>
<td>Research Experience for Undergraduates in</td>
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<tr>
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<td>Nanoscience and Nanotechnology</td>
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University Libraries

Director
• John P. Culshaw

Web site: http://www.lib.uiowa.edu/instruction/


Library Research in Context is an activity-based course that helps students integrate information skills and concepts into their academic tool kit, enabling them to develop habits of critical inquiry and to accomplish course goals. Designed primarily for sophomores and juniors, the course introduces students to the basic research process and helps them formulate research questions and evaluate information. It also touches on the social and ethical contexts of information. Subject-specialist librarians present the course, using in-class activities and assignments and class discussion. Most sections of the course are offered online.

Library Strategies for International Research helps students prepare to write an academic research paper and succeed in upper-level courses throughout their academic careers. Students work with a research librarian, gaining new skills and experience as they solve information-related problems. The class features small group activities, short student presentations, and an individual research consultation with the instructor. Students develop familiarity with a variety of research and popular materials, become experts in at least one academic research database, and enhance their critical thinking skills. The course lasts eight weeks.

Being Responsible Online: From Facebook to Academic Research introduces students to ethical issues that surround online information, especially in the context of social media. Discussion topics include issues of privacy, security, free versus fee-based information, censorship, one's digital footprint, and academic integrity.

Courses

Lower-Level Undergraduate

ULIB:1001 Library Research in Context 1 s.h.
Academic research, effective use of the library and its resources, basic research methods, process of scholarly communication; content may be keyed to a discipline-specific course; students apply concepts and processes to their research projects; transferable skills.

ULIB:2001 Being Responsible Online: From Facebook to Academic Research 1 s.h.
Introduction to ethical issues surrounding online information; using information as researchers or creating information on a social networking site; issues of privacy, reliability, and intellectual property; skills to navigate online information responsibly and knowledgeably.

Upper-Level Undergraduate and Graduate

ULIB:3011 Library Strategies for International Research 1 s.h.
Skill development in international research; academic projects; work with research librarian; activity-based introduction to article, statistical, and governmental databases; research and popular materials; information discovery process (tools and search strategies); enhancement of critical thinking skills. Same as IS:3011.
University of Iowa Honors Program

Director
• Art L. Spisak

Web site: http://honors.uiowa.edu/

The University of Iowa Honors Program enriches the intellectual and personal lives of outstanding undergraduates across the University. It provides academic opportunities, cocurricular programs, special recognitions, and social events, many of which are held in the award-winning Blank Honors Center. It also sponsors three residential communities for honors students.

Honors at Iowa challenges students and helps them make connections. For example, honors students learn from some of the top professors on campus when they select from the University's many honors courses.

Honors students engage in a wide variety of academic and cocurricular activities, with support from numerous programs. They enjoy extended library privileges, including longer loan periods. Honors Writing Fellows refine their own writing skills while they mentor other student writers. Some students investigate topics for Iowa communities and the Iowa Legislature through the Iowa Policy Research Organization. Those who need to find mentors and funding for research may request help from the Iowa Center for Research by Undergraduates.

All honors students may take part in programs that offer opportunities in the arts, sciences, politics, international relations, cultural explorations, and a variety of field trips.

The honors staff helps students tailor their honors curricula to enrich their majors. The staff also helps to arrange internships, service learning, study away, teaching, and other experiences for students exploring their interests in and beyond the classroom.

Undergraduate Program of Study

• University of Iowa Honors Program

Honors at Iowa helps students tailor opportunities to different educational needs and goals. Honors students may take honors courses every semester they are enrolled at the University. Honors courses generally are small and interactive. They connect students with distinguished professors and offer new topics each semester. Honors courses also are part of the regular curriculum, not additional requirements for graduation.

Students are encouraged to begin honors work early. In HONR:1100 Honors Primetime, entering students earn 1 s.h. of honors credit by taking a short course a few days before fall classes begin. Students who enter the honors program directly from high school take HONR:1300 Honors First-Year Seminar, earning 1 s.h. for fall semester work with selected professors on current topics. Honors students may fulfill General Education Program (p. 313) requirements by completing honors sections such as RHET:1030 Rhetoric, ENGL:1200 The Interpretation of Literature, and CHEM:1110 Principles of Chemistry 1.

Upper-level students may take honors courses in their majors or pursue individual instruction with faculty members through honors courses such as HONR:3994 Honors Research Practicum. Students may also earn honors credit for a non-honors course by developing an honors contract with the course instructor; the student and instructor negotiate a unique project for the course and develop the honors contract around the project.

Additional academic opportunities include honors advanced seminars, honors major seminars, graduate courses, honors studies, and honors practicum in teaching and service.

Students learn about honors opportunities in weekly e-mails from the honors program. Honors professional staff members and peer advisors offer guidance in personal meetings and group presentations. In addition, the honors staff helps students design individualized curricula for their special interests. To learn more, visit Academics on the honors program web site.

JOINING THE HONORS PROGRAM

Honors at Iowa offers membership to students entering the University directly from high school based on students' grades and test scores. Entering students who are not offered membership may request an admission invitation by submitting a high school transcript, a teacher's recommendation, and a personal statement explaining why he or she would like to be admitted to the University of Iowa Honors Program.

New transfer students who have a cumulative g.p.a. of at least 3.50 and have earned at least 24 s.h. of college credit are offered membership in the honors program. Transfer students with less than 24 s.h. of college credit are considered for honors on the same basis as are students who enter the University directly from high school.

Continuing University of Iowa students who maintain a UI cumulative g.p.a. of at least 3.50 are eligible to join the honors program.

To remain in the honors program and to graduate with University honors, students must maintain a University of Iowa cumulative g.p.a. of at least 3.33 and complete specific honors program requirements. For more information about joining the University of Iowa Honors Program, see Joining Honors on the program's web site.

COLLEGIATE HONORS AND HONORS IN THE MAJOR

In addition to graduating with University honors through the University of Iowa Honors Program, students may graduate with collegiate honors or honors in their majors. Each college and/or major sets its own requirements for graduation with honors. Graduation with collegiate honors and with honors in the major are recognized at commencement and are noted on the student's transcript. Visit the individual Catalog sections to learn about requirements for collegiate honors or honors in the major.

Graduation with University Honors

Students must accept a formal invitation from the University of Iowa Honors Program in order to become members; see "Joining the Honors Program" above.

All students who enter the honors program must attend an honors orientation.
Graduation with University honors through the University of Iowa Honors Program is recognized at commencement and is noted on the student’s diploma and transcript. Honors program students completing degree programs in the Colleges of Education, Engineering, Liberal Arts and Sciences, and Nursing and the Tippie College of Business may graduate with University honors. Honors requirements for engineering students are different from those for students in the other colleges.

Graduation with University honors requires the following work.

**Business, Education, Liberal Arts and Sciences, and Nursing Students**

Students earning bachelor’s degrees in the Colleges of Education, Liberal Arts and Sciences, and Nursing and in the Tippie College of Business complete a two-level program of approved course work (level one) and experiential learning (level two) in order to graduate with University honors. Students are not required to complete all level-one requirements before they begin work on level two.

**LEVEL ONE: BUILDING KNOWLEDGE**

Level one requires students to earn 12 s.h. of credit in honors course work during their first four semesters in the honors program. Students may count a maximum of one honors contract course toward the level-one requirement; under certain circumstances, they may count up to 6 s.h. of honors contract course credit. Level one requires the following course work.

- Complete an honors First-Year Seminar during the first semester at the University of Iowa (for students who enter the honors program directly from high school).
- Complete an honors course or an honors contract course during the first semester in the honors program.
- Complete additional honors course work to total 12 s.h. (the level-one requirement).

**LEVEL TWO: LEARNING BY DOING**

Level two requires students to complete 12 s.h. in approved experiential learning activities. Students may satisfy the requirement with one of the options below, or they may combine two or more of these options in order to earn the 12 s.h. of credit required for level two.

- Earn honors in the major; this option fulfills the entire level-two requirement.
- Earn up to 12 s.h. in mentored research; earning the maximum 12 s.h. fulfills the entire level-two requirement; students who earn less credit for mentored research may combine it with another option to fulfill the level-two requirement.
- Study abroad for a minimum of two semesters (fall and/or spring) or the equivalent; carry out a preapproved independent project while abroad and present a poster on the project or write a report about it; this option fulfills the entire level-two requirement.
- Earn up to 6 s.h. for a single semester of study abroad with an independent project, including a summer or between-semester experience.
- Complete an internship and carry out a preapproved independent project during the internship; present a poster on the project or write a report about it; internships normally count for up to 6 s.h. of the level-two requirement, but in some cases they count for the entire 12 s.h. required for level two.
- Earn up to 6 s.h. in honors course work approved for the level-two requirement.

**Engineering Students**

Students earning a Bachelor of Science in Engineering complete 24 s.h. in a program of approved course work and experiential learning in order to graduate with University honors. They must complete one honors course during their first semester in the honors program, earn 6 s.h. of the required 24 s.h. in honors course work, and complete 12 s.h. of the required 24 s.h. during their first six semesters in the honors program. Requirements may be different for honors students who complete the Grand Challenges for Engineering program.

Students may complete one of the options below, or they may combine two or more of the options in order to earn the required 24 s.h. of honors credit. Complete the Grand Challenges for Engineering program; this option fulfills the entire 24 s.h. honors requirement.

- Earn up to 12 s.h. in honors course work, which may include graduate courses.
- Earn up to 12 s.h. in mentored research (earn 3 s.h. by completing 10 hours of mentored research work per week for a fall or spring semester; earn 6 s.h. by completing 20 hours of mentored research work per week for a summer session).
- Earn up to 12 s.h. in study abroad (earn 6 s.h. for one fall or spring semester or an equivalent amount of time during summer and between semesters); carry out a preapproved independent project while abroad and present a poster on the project or write a report about it.
- Earn up to 12 s.h. by completing one or more internship or co-op experience (earn 6 s.h. for a 15-week experience requiring 40 hours of work per week; earn 3 s.h. for a 15-week experience requiring 20 hours of work per week; earn 4 s.h. for a 10-week experience requiring 40 hours of work per week; earn 2 s.h. for a 10-week experience requiring 20 hours of work per week); students must register their internships and co-op experiences with the College of Engineering and meet the college’s reporting and evaluation requirements.
- Earn up to 10 s.h. (no more than 4 s.h. from one single area) by completing a preapproved engineering community engagement experience (each experience listed earns 2 s.h. per semester) in the following activities: fill a leadership position in an approved engineering student organization; be a Hanson Center for Technical Communication peer consultant; or serve as an engineering tutor, engineering teaching assistant, engineering student ambassador, or engineering peer advisor. Students must complete the Engineering Community Engagement Experience Verification form in order to earn honors credit for the experiences.
- Earn honors in the student’s engineering major; this option counts for 12 s.h. of University honors credit.

**Academic Activities**

**Honors Peer Advisors** earn academic credit for acquiring and then sharing knowledge of honors opportunities...
Honors Writing Fellows are trained and paid to assist in undergraduate courses by mentoring a dozen students each semester on two major writing assignments.

The ICRU Research Ambassadors earn academic credit for showing how and why research with faculty mentors is an important aspect of education at the University of Iowa.

The Iowa Policy Research Organization selects a dozen honors students each year to earn academic credit by learning to do policy analysis and then writing policy papers for Iowa communities and the Iowa Legislature.

Study away in foreign countries enables students to earn academic credit for course work, research, or service.

Learn more about honors activities and Experience-Based Learning on the honors program web site.

Cocurricular Programs

Honors at Iowa offers students a rich variety of activities outside the classroom. Many honors students find cocurricular programming a good way to meet people, get involved, and learn more about the world around them. Some of the programs are volunteer, some offer pay, and some award honors credit. These opportunities provide peak educational experiences, especially extensive and intensive interactions with faculty mentors and other talented students.

The Honors Student Advisory Committee enables volunteers to work with the honors director on awards, initiatives, and priorities for honors education at the University of Iowa.

Honors interns receive academic credit for service learning that is mentored by faculty members and provided in professional or other practical settings.

Honors newsletters inform readers on and beyond the campus about honors at the University of Iowa.

The honors student staff earn pay to make the Blank Honors Center useful to students. They also produce most honors cocurricular programs.

Honors summer ambassadors earn pay to orient entering students to the honors program by informing them of academic opportunities and activities.

ICRU fellows receive scholarships from the Iowa Center for Research by Undergraduates to do research and creative projects with faculty mentors in professional fields of study.

Honors Arts sends groups of honors students to music, dance, and theater events at the University and in the community. Students have opportunities to interact with artists, faculty members, and other honors students through related discussions, lectures, and visits.

Honors Gallery takes advantage of the Blank Honors Center’s design to display art. It exhibits student works throughout the year and complements the exhibits with receptions and other events.

The Iowa City Foreign Relations Council hosts luncheon dialogues on relevant international issues. Past speakers include award-winning journalists, Nobel Peace Prize laureates, seasoned diplomats, prominent politicians, and policy analysts. Honors students become better informed about world affairs by listening to and talking with these expert speakers.

The Presidential Scholars Community involves recipients of Iowa’s top merit scholarships in shared classes, opportunities for funded research in the first year, and service. Scholars participate in legacy projects, dinners with faculty and key administrators, scholarship and fellowship mentoring programs, and volunteer projects.

The University of Iowa Honors Program advises four major national and international honor societies: Phi Eta Sigma, National Society of Collegiate Scholars, Mortar Board, and Omicron Delta Kappa. It also works closely with Phi Beta Kappa in the College of Liberal Arts and Sciences. These societies provide select students with opportunities to lead, serve their communities, and cultivate academic excellence.

To learn more, visit Student Activities on the honors program web site.

Facilities

Blank Honors Center

Honors at Iowa makes its home in the Blank Honors Center, a modern facility that fosters community among honors students. The Blank Honors Center is located at the center of the University’s main campus, next to residence halls and classroom buildings. It offers social areas, a kitchenette, quiet study areas, wireless Internet access, a computer lab, and classrooms for students. The center also houses the honors staff and has rooms for meetings, events, presentations, and conversation.

Honors Residential Communities

The honors program sponsors three living-learning communities. Each community hosts its own social events, and all community members have access to the full range of honors academic and cocurricular opportunities.

Honors House is for first-year honors students. It is located in Daum Hall and is connected to the Blank Honors Center by a skywalk. Honors House provides a convenient place for residents to socialize and study together. It also
sponsors academic and social events for honors students living in Daum Hall.

STEM Scholars is for first-year honors students. Preference is given to Old Gold and Presidential Scholarship recipients. First-year honors students in this community are required to take a seminar (1 s.h.) focusing on undergraduate research as well as an honors section of CHEM:1110 Principles of Chemistry I. STEM Scholars enjoy social opportunities to connect with other students and University of Iowa research faculty and staff.

Honors Centerstone is open to continuing and transfer honors students. It offers networking and other support for students who are highly engaged in learning and service activities on or beyond the campus. Some of its social events are held in the Blank Honors Center.

Students must apply to live in the honors residential communities. See Living-Learning Communities on the University Housing & Dining web site for information about how to apply. Visit Housing on the honors program web site to learn more about the honors living-learning communities.

Courses
Honors courses are specifically for honors students.

**Lower-Level Undergraduate**

**HONR:1100 Honors Primetime** 1 s.h.
Preparation for honors opportunities, especially activities and courses; team work on projects that develop skills of invention and communication; presentation of products and performances; connect honors students, honors teachers, and staff members.

**HONR:1300 Honors First-Year Seminar** 1-2 s.h.
Small discussion classes taught by faculty members on special topics; may include outside activities (e.g., films, lectures, performances, readings, visits to research facilities, field trips). Requirements: first- or second-semester standing.

**HONR:1610 Honors Seminar in Historical Perspectives** 3 s.h.
Small-class learning with a faculty member to explore and explain historical developments. GE: Historical Perspectives.

**HONR:1620 Honors Seminar in International and Global Issues** 3 s.h.
Small-class learning with a faculty member to introduce perspectives of other nations and cultures through international or global issues. GE: International and Global Issues.

**HONR:1630 Honors Seminar in Literary, Visual, and Performing Arts** 3 s.h.
Small-class learning with a faculty member to appreciate, analyze, create, or perform art. GE: Literary, Visual, and Performing Arts.

**HONR:1640 Honors Seminar in Natural Sciences** 3 s.h.
Small-class learning with a faculty member on natural science topics. GE: Natural Sciences without Lab.

**HONR:1650 Honors Seminar in Quantitative and Formal Reasoning** 3 s.h.
Patterns of reasoning useful for understanding and evaluating scientific evidence, theory, controversy; historical and contemporary examples from physical, biological, behavioral, and biomedical sciences. GE: Quantitative or Formal Reasoning.

**HONR:1660 Honors Seminar in Social Sciences** 3 s.h.
Small-class learning with a faculty member on social science topics. GE: Social Sciences.

**HONR:1670 Honors Seminar in Values, Society, and Diversity** 3 s.h.
Small-class learning with a faculty member to explore fundamental questions on human experience from cultural, social, performative, philosophical, or spiritual perspectives. GE: Values, Society, and Diversity.

**HONR:1850 Honors Seminar in Communication and Literacy** 3 s.h.
Small-class learning with a faculty member; focus on writing, speaking, and critical reading skills or analysis of fiction, poetry, drama, essays.

**HONR:1883 War** 3 s.h.
Emotions soldiers have as they fight, what makes them continue voluntarily to face death, and how modern society memorializes these experiences; how literature and art transform the experience of war; human responses to war in Homer's *Iliad* and select Greek tragedies. GE: Values, Society, and Diversity. Same as CLSA:1883.

**HONR:1885 Reading the Ancient City** 3 s.h.
How ancient Mediterranean and Near Eastern peoples from third millennium B.C.E. to fourth century C.E. described, celebrated, and deplored life in their great cities (Babylon, Jerusalem, Athens, Alexandria, Rome); readings selected from ancient literary prose, poetry, drama, and religious writings; study of popular writing (e.g., ancient inscriptions, graffiti, letters, prayers, account books, and magic spells). GE: Interpretation of Literature.

**HONR:2600 Honors Special Topics** 1-3 s.h.
Small-class learning with a faculty member on special topics.

**Upper-Level Undergraduate and Graduate**

**HONR:3050 Honors Studies** arr.
Independent studies arranged with faculty members who certify satisfactory completion of study plans and performance for topics not covered by other UI courses.

**HONR:3100 Honors Teaching Practicum** 1-3 s.h.
Teaching internship in first- and second-year courses; may include providing tutorial assistance, conducting review sessions, aiding course organization.
HONR:3150 Honors Service Learning  arr.
Service learning projects arranged with faculty members who certify satisfactory completion of study plans and service.

HONR:3160 Honors Internship  0-3 s.h.
Independent service internship arranged with faculty members, who certify satisfactory performance and completion of project.

HONR:3170 Honors Peer Advising  1-2 s.h.
Experience sharing knowledge and experiences of the Honors Program with other students in meetings during office hours, online chats, other venues; peer advisors answer questions, provide information, help students find honors opportunities in and out of class.

HONR:3210 Honors Policy Research Practicum  1 s.h.
Theory and practice of public policy research; development of policy-research skills; production of policy-research papers. Requirements: sophomore or junior standing.

HONR:3220 Honors Writing Fellows: Writing Theory and Practice  3 s.h.
Preparation of honors students selected as writing fellows to serve as peer tutors in writing-intensive courses; theories of writing, evaluation of drafts, peer tutoring with students. Requirements: sophomore or junior honors standing, admission to Writing Fellows Program, and availability to work as a writing fellow in subsequent semesters.

HONR:3400 Honors Writing Workshop  1-3 s.h.
Learn writing through the Iowa workshop tradition of sharing new work with colleagues who provide detailed, constructive suggestions in response; emphasis on invention, structure, style; each edition targets a distinct kind of writing; an experienced writer leads the workshop with meeting formats; credit suited to exercises for the type of featured writing. Requirements: completion of Rhetoric requirement.

HONR:3994 Honors Research Practicum  1-3 s.h.
Individual research performed in conjunction with a faculty member’s research.

HONR:4990 Honors Thesis or Project  1-3 s.h.
Culminating project of research or artistic creation; preparation and completion of the final product associated with graduation with honors in the student’s major. Requirements: member of the University of Iowa Honors Program and junior or senior standing.
University of Iowa Upward Bound

**Interim director**
- Georgina Dodge

**Project director**
- Robert L. Welch II

**Web site:** http://diversity.uiowa.edu/unit/trio-upward-bound

**Precollege Program of Study**

University of Iowa Upward Bound is an academic program for eligible high school students from three southeastern Iowa communities. Students participate during the academic year at their local high school and attend a six-week residential program on the University of Iowa campus from mid-June through July. Participants take mathematics, science, language arts, and foreign language courses to prepare them for classes they will take at their local high school in the fall. They also participate in extracurricular activities, field trips, and college visits.

Bridge students (those who will enter college in the fall) enroll in a University of Iowa course during the six-week summer session. Bridge students participate in an on-campus job shadow and take a college transition seminar.

Participants receive all services at no cost.

To be admitted to University of Iowa Upward Bound, students must:

- reside in the target area and attend a target school;
- be in grade 9, 10, or 11;
- have a family income that meets U.S. Department of Education low-income guidelines; and
- be a potential first-generation college student.

Upward Bound provides services to students until they graduate from high school and enroll in postsecondary education.

University of Iowa Upward Bound serves students who attend the following Iowa high schools: Columbus Community High School, Muscatine High School, and West Liberty High School. Other postsecondary institutions in Iowa and across the nation sponsor Upward Bound programs. High school students who do not attend schools served by the University of Iowa program should ask their counselors whether an Upward Bound program serves their area.

For more information, contact University of Iowa Upward Bound.

**Courses**

**Pre-Lower Level**

**UIUB:0018 Upward Bound Project** 0 s.h.
Division of Continuing Education

Dean

• Chet Rzonca

Web site: http://www.uiowa.edu/dce/

The Division of Continuing Education increases access to the services and resources of the University of Iowa. In partnership with the University's colleges and departments, the division provides high-quality credit and noncredit courses, workshops, and programs to traditional and nontraditional learners. Using a variety of locations, schedules, and technologies, the division helps provide a University of Iowa learning environment beyond the physical borders of campus.

The division administers the following programs.

Summer and Winter Sessions

Assistant dean: Marlys Boote

The University of Iowa conducts summer sessions of four, six, eight, and 12 weeks. Classes also are offered outside these normal summer session terms. In addition, a short winter session is offered during the break between the fall and spring semesters.

Students may take undergraduate and graduate course work during the summer and winter sessions. Classes during these sessions are taught mainly by University of Iowa faculty members, so students receive the same first-rate instruction provided during the spring and fall semesters. Courses are offered in a variety of formats both on and off campus. They are open to University of Iowa students and to persons not formally admitted to a degree program.

Distance Programs and Courses

Associate dean: Anne Zalenski

Web site: http://distance.uiowa.edu

The University of Iowa offers a number of degree and certificate programs available entirely by distance education. These programs of study are supported by hundreds of courses that are offered in a variety of ways, including online, independent study, virtual classroom technologies, and a combination of formats. The division also offers on-site programming in the Quad Cities, Sioux City, Des Moines, and at Iowa Lakeside Laboratory.

The University has established partnerships with all of Iowa's community colleges so that Iowans who earn an associate's degree at their community college can continue to live and work in their communities while earning a degree from the University of Iowa.

For information about programs, procedures, and enrollment, contact the Division of Continuing Education.

Bachelor of Applied Studies

Web site: http://distance.uiowa.edu/bas

The Bachelor of Applied Studies (B.A.S.) is an undergraduate certificate offered through the Division of Continuing Education. The degree requires a minimum of 120 s.h. and is offered without an academic major, but students may include certificate programs within their degree or develop an area of emphasis by selecting from seven B.A.S. tracks. Students may earn credit toward the degree by taking courses offered in varied distance education formats; they also may use courses offered in on-campus formats. Applicants must hold an Associate of Applied Science (A.A.S.), an Associate of Arts (A.A.), or an Associate of Science (A.S.) degree. The B.A.S. is awarded by University College and is administered by the Division of Continuing Education. For a detailed program description, see Bachelor of Applied Studies (p. 1192) (University College) in the Catalog.

Bachelor of Business Administration

Web site: http://distance.uiowa.edu/article/undergraduate-certificate-entrepreneurial-management

The Bachelor of Business Administration (B.B.A.) with a major in management, entrepreneurial management track, may be completed entirely by distance education. The degree requires a minimum of 120 s.h. of credit. To be admitted to the program, individuals must have earned a minimum of 60 s.h. of college-level credit with a g.p.a. of at least 2.75, and they must have completed four prerequisite courses (business calculus, statistics, microeconomics, and financial accounting) with a g.p.a. of at least 2.75 and no grade below C. The degree is awarded by the Tippie College of Business and is administered by the Division of Continuing Education. For a description of the program, see Management and Organizations (p. 682) in the Catalog.

Bachelor of Liberal Studies

Web site: http://distance.uiowa.edu/bls

The Bachelor of Liberal Studies (B.L.S.) is a bachelor's degree that may be completed entirely by distance education. The degree requires a minimum of 120 s.h. and is offered without an academic major, but students may include certificate programs or emphasis areas within the degree. Students may earn credit toward the degree by taking courses offered in varied distance education formats; they also may use courses offered in on-campus formats. Applicants must have either an Associate of Arts (A.A.) degree or have earned at least 60 s.h. of credit. The B.L.S. is awarded by University College and is administered by the Division of Continuing Education. For a detailed program description, see Bachelor of Liberal Studies (p. 1195) (University College) in the Catalog.

Center for Conferences

Director: Jo Dickens

Web site: http://www.continuetolearn.uiowa.edu/conferences/

The University of Iowa Center for Conferences (UICC) is the University's principal agency for initiating, coordinating, conducting, and supporting noncredit continuing education programs. It also serves as the University of Iowa's Continuing Education Unit (CEU) database.

UICC coordinates national and international conferences for University faculty, departments, colleges, administrative units, student groups and related academic societies, professional associations, and other groups.
sponsored by the University. Services include initial planning, site location, budget development, income and expense management, payment processing, and online conference registration.

The Center for Conferences uses facilities on the University of Iowa campus as well as those located in Iowa City and Coralville, throughout Iowa, and nationwide. For more information, visit the Center for Conferences web site.

**Iowa Lakeside Laboratory**

**Executive director:** Chet Rzonca  
**Web site:** http://www.continuetolearn.uiowa.edu/lakesidelab/

Iowa Lakeside Laboratory is a field station run cooperatively by the University of Iowa, Iowa State University, and the University of Northern Iowa and administered by the University of Iowa. The laboratory offers summer courses and research opportunities for undergraduate and graduate students. Courses focus on the ecology, taxonomy, and conservation of northern plains animals, plants, microorganisms, and ecosystems. Students take one course at a time, 40 hours per week, for one to four weeks. Class sizes are small, and most students spend at least part of every day outdoors.

The Board of Regents, State of Iowa, has designated Lakeside Laboratory a Regents Resource Center, dedicated to providing lifelong learning opportunities for Iowans.

For information about academic programs and courses at the laboratory, see Iowa Lakeside Laboratory (p. 1212) (University College) in the Catalog or visit the Iowa Lakeside Laboratory web site.

**Iowa Summer Writing Festival**

**Director:** Amy Margolis  
**Web site:** http://www.iowasummerwritingfestival.org/

The Iowa Summer Writing Festival is a noncredit creative writing program for adults. The festival brings some 1,300 writers to the University of Iowa campus each summer to participate in weeklong and weekend workshops across the genres. Writers at all levels are welcome.

Participants choose from more than 135 workshops, including novels, short fiction, gothic fiction, poetry, memoirs, essays, playwriting, travel, humor, writing for children and young adults, and more. Festival classes are conducted as workshops, where the primary texts are participants’ own creative work.

Weeklong workshops meet for three hours each day, Monday through Friday, and include individual student/instructor conferences. Weeklong sessions feature a daily lecture series on aspects of literary craft, as well as evening readings and other events. Weekend sessions meet for eight hours over two days. Visit the Iowa Summer Writing Festival web site for information about workshops, schedules, and registration. Program information for the coming summer is posted in mid-January.

**Iowa Young Writers' Studio**

**Director:** Stephen Lovely  
**Web site:** http://iowayoungwritersstudio.org

The Iowa Young Writers' Studio is a two-week summer residential creative writing program for high school students who love to write. Students build a community of peers while working with experienced writing teachers, primarily students and graduates of the University's M.F.A. program in creative writing.

The studio offers three courses of study: poetry, fiction, and creative writing (a mix of poetry, fiction, and creative nonfiction). Each course consists of a seminar and a workshop. In seminars, students read literature by established writers. In workshops they share their own writing, get feedback from their classmates and teacher, and discuss issues of narrative and form.

The studio offers two two-week sessions: one in June and one in July. Young writers who have completed grade 10, 11, or 12 are eligible to attend the studio. Application materials include an application form, a creative writing sample, a statement of purpose, a high school transcript, and a letter of recommendation from an English teacher or another instructor familiar with the applicant's writing. Applications are submitted online. For complete application information, contact the Iowa Young Writers' Studio or visit its web site.

**John and Mary Pappajohn Education Center**

**Director:** Chet Rzonca  
**Manager:** Richard Gardner  
**Web site:** http://www.uiowa.edu/jmpec/

The John and Mary Pappajohn Education Center (JMPEC) serves a wide range of adult learning needs. It also provides central Iowa students with access to a variety of University of Iowa undergraduate and graduate degree programs and courses. The center is located in downtown Des Moines, Iowa, close to many corporate businesses and government offices. With classrooms that can accommodate groups of up to 60 people, JMPEC is ideal for small conferences, educational workshops, and meetings. It is equipped to handle on-site instructional technology and to deliver distance education to students anywhere. JMPEC also makes noncredit learning opportunities for professional and workforce development available to corporations and individuals. Learn more at the John and Mary Pappajohn Education Center web site.

**Labor Center**

**Director:** Jennifer Sherer  
**Web site:** http://www.continuetolearn.uiowa.edu/laborctr/

The University of Iowa Labor Center provides educational programs to Iowa's working people and their organizations. The center offers a wide range of noncredit courses on workplace rights, labor issues, and skills necessary for effective union leadership. Typical course topics include steward education and contract administration, collective bargaining, labor and employment law, public policy issues, leadership development, organizing and mobilizing, economics, labor history, workplace health and safety, and other content relevant to workers and union members. Courses are offered both on and off campus at times and locations convenient to working adults.

The Labor Center also conducts applied research, publishes educational materials on workplace issues, and conducts public programming on labor issues on the University of Iowa campus and in Iowa communities.
Administrative Officers

Board of Regents, State of Iowa

The Board of Regents, State of Iowa, governs the University of Iowa, Iowa State University of Science and Technology, the University of Northern Iowa, the Iowa Braille and Sight-Saving School, and the Iowa School for the Deaf.

President: Bruce L. Rastetter, Alden
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University ombudspersons: Susan Johnson, Cynthia Joyce

Office of the Provost

Provost and executive vice president: P. Barry Butler
Associate vice president and director of administration and planning: Don J. Szaszczak
Associate provost for undergraduate education and dean of the University College: Lon D. Moeller
Associate provost for faculty: Kevin C. Kregel
Associate provost for graduate education and dean of the Graduate College: John C. Keller
Associate provost and dean of international programs: Downing Thomas
Associate provost and dean of continuing education: Chet S. Rzonca
Associate provost for outreach and education: Linda S Netselaar

Associate vice president for enrollment management:
Brent Gage
Assistant provost for enrollment management and director of academic advising: Lisa Ingram
Assistant provost for enrollment management and university registrar: Lawrence J. Lockwood
Assistant provost for enrollment management and director of student financial aid: Mark S. Warner

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Dean: Sarah Fisher Gardial
College of Dentistry
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College of Education
Dean: Nicholas Colangelo
College of Engineering
Dean: Alec B. Scranton
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College of Liberal Arts and Sciences
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College of Nursing
Dean: Rita A. Frantz
College of Pharmacy
Dean: Donald E. Letendre
College of Public Health
Dean: Susan J. Curry
University College
Dean: Lon D. Moeller
Division of Continuing Education
Dean: Chet S. Rzonca
Academic Advising Center
Director: Lisa Ingram
Information Technology Services
Chief information officer and director, ITS: Steven R. Fleagle
International Programs
Associate provost and dean: Downing Thomas
International Writing Program
Director: Christopher Merrill
Libraries
University librarian: John P. Culshaw
Museum of Art
Director: Sean O’Harrow
Registrar
University registrar: Lawrence J. Lockwood
Student Financial Aid
Director: Mark S. Warner

Research

Vice president for research and economic development:
Daniel A. Reed
Senior associate vice president, research development centers and institutes: Richard Hichwa
Senior assistant vice president for research, research administration: Cheryl Reardon
Associate vice president for economic development: David Hensley
Assistant vice president, interdisciplinary research and outreach: Ann Ricketts
Assistant vice president for economic development: David Conrad
Assistant vice president for community relations: Peter Matthes

Student Life
Vice president for student life: Thomas R. Rocklin
Associate vice president for student life and dean of students:
Assistant vice president for assessment and strategic initiatives: Sarah Hansen
Assistant vice president for student life and senior director, University housing and dining: Von Stange
Assistant vice president for student life: Belinda Lantz Marner

Finance and Operations
Interim senior vice president: Rod Lehnertz
Interim vice president, human resources: Kevin D. Ward
Associate vice president and director, facilities management: Donald Guckert
Interim assistant vice president and director, public safety: David Visin
Assistant vice president and director, business services: Mary Jane Beach
Director, financial management and budget, and university secretary: Susan Klatt
Chief investment officer and director, treasury operations: Cynthia Bartels
Interim University chief financial officer and treasurer: Terry L. Johnson

Health Care
Vice president for medical affairs: Jean E. Robillard
Chief executive officer, UIHC: Kenneth P. Kates

Strategic Communication
Vice president for strategic communication: Joseph Brennan
University spokesperson: Tom Moore

University of Iowa Alumni Association
President: Jeffrey D. Kueter

University of Iowa Foundation
President: Lynette L. Marshall
Faculty

A’Hearn, Amy K., Adjunct Lecturer, University College Courses, 2006 (2007); BA 2001 Iowa; MS 2004 Western Illinois

Abbas, Haruhi, Adjunct Lecturer, University College Courses, 2006 (2006); MA 1985 Indiana PA; MA 1988 Iowa; MA 2002 Iowa

Abbas, Paul J., Professor, Communication Sciences and Disorders/Otolaryngology-Head Neck Surgery, 1974 (1984); BS 1969 Massachusetts Inst of Technol; PHD 1974 Johns Hopkins

Abbi, Kamal Kant Singh, Clinical Assistant Professor, Internal Medicine, 2014 (2014);

Abbott, Charles Wilson, Adjunct Lecturer, International Programs, 2009 (2009); BA 1989 SUNY at Buffalo; PHD 2006 Iowa

Abbott, Linda I., Clinical Adjunct Instructor, Nursing, 2000 (2000); BSN 1980 Iowa; MSN 1996 Iowa

Abbound, Francois, Professor, Physiology/Internal Medicine, 1961 (1968); BS 1948 Christian Brothers’ Schl-Egypt; PNS 1949 Cairo; MCHB 1965 Ain Chams-Egypt; MBCH 1955 Ain Chams-Egypt

Abdel-Malek, Karim, Professor, Biomedical Engineering/ Mechanical Engineering, 1994 (2005); BS 1988 Jordan; MS 1990 Pennsylvania; PHD 1993 Pennsylvania

Abel, Evan Dale, Professor, Internal Medicine/Biomedical Engineering/Biochemistry, 2013 (2013);

Abernathy, M. Glenn, Clinical Assistant Professor, Family Medicine, 2008 (2011); BS 1972 South Carolina; MD 1978 South Carolina

Abou Alaiwa, Mahmoud, Assistant Professor, Internal Medicine, 2013 (2014);

Abrahamsen, Timothy Garth, Clinical Adjunct Assistant Professor, Dermatology, 2002 (2002); BA 1993 Wartburg; MD 1997 Iowa

Abram, Nancy J., Lecturer, Marketing, 2007 (2007); BA 1980 St. Ambrose

Abram, Steven Webb, Adjunct Lecturer, Management Organizations, 2013 (2013);

Abramoff, Michael David, Professor, Ophthalmology Visual Science/Electrical-Computer Engineering/Biomedical Engineering, 2004 (2012); MS 1989 Amsterdam; MD 1994 Amsterdam; PHD 2001 Utrecht

Abramowitz, Paul W., Emeritus Professor, Pharmacy, 1998 (1998); BA 1972 Indiana; BSH 1977 Toledo; PHARM 1979 Michigan

Abrams, Catherine Helen, Lecturer, Nursing, 2012 (2012);

Abrams, Thad Eugene, Assistant Professor, Psychiatry/ Internal Medicine, 2008 (2011); BA 1996 Luther College; MD 2000 Iowa

Abrons, Jeannine Porter, Clinical Assistant Professor, Pharmacy Practice and Science/Oral Path, Radiology Medicine, 2011 (2011); PHAR 2004 Drake

Abrons, Ron Owen, Clinical Assistant Professor, Anesthesia, 2011 (2011); MD 2004 Iowa

Abu Hejleh, Taher, Clinical Assistant Professor, Internal Medicine, 2012 (2012); MD 2004 Jordan University of Science

Abu-Yousef, Monzer M., Professor, Radiology, 1976 (1991); MBBCH 1970 Cairo-Egypt

Aburizik, Arwa, Clinical Assistant Professor, Internal Medicine, 2013 (2013);

Abushahin, Laith, Clinical Assistant Professor, Internal Medicine, 2013 (2013);

Abusin, Ghada Ahmed Yousif, Clinical Assistant Professor, Pediatrics, 2011 (2011); MBBS 2001 Khartoum, Sudan

Accola, Christopher Lee, Adjunct Assistant Professor, Pharmacy Practice and Science, 2014 (2014);

Achero, Martin, Adjunct Assistant Professor, Psychology, 2007 (2007); PHD 2001 Konstanz, Germany

Achenbach, Andrea Elizabeth, Lecturer, Nursing, 2014 (2014);

Achepohl, Keith A., Emeritus Professor, Art Art History, 1973 (1981); BA 1956 Knox; MFA 1960 Iowa

Achrzogou, George John, Adjunct Professor, Psych Quant Foundations/Teaching and Learning, 1987 (2012); BA 1981 Iowa; MA 1993 Iowa; PHD 2003 Iowa

Achter, Charles T., Lecturer, Teaching and Learning, 2011 (2011); BA 1969 St Cloud State; MA 1975 St. Cloud State; EDS 1978 Mankato State

Acion, Laura, Adjunct Assistant Professor, Biostatistics, 2013 (2013); PHD 2011 UI

Acton, Patricia Jo Nassif, Emeritus Professor, Law/Faculty, 1981 (1985); BA 1971 Iowa; JD 1974 Iowa

Adam, Matthew, Adjunct Lecturer, Management Organizations, 2006 (2006); MBA 2002 Iowa

Adamek, Mary, Clinical Professor, Music, 1996 (2007); BM 1977 Virginia Commonwealth; MM 1981 Miami; PHD 1993 Minnesota

Adams, Charlotte, Associate Professor, Dance, 1998 (2003); BA 1976 Appalachian State; MA 1984 Arizona; MFA 1995 Arizona

Adams, Christopher Maxin, Associate Professor, Physiology/Internal Medicine, 2006 (2011); BS 1992 Kansas, Lawrence; MD 1999 Iowa; PHD 1999 Iowa

Adams, Harold P., Professor, Neurology, 1976 (1985); BA 1966 Drake; BS 1968 South Dakota-Vermillion; MD 1970 Northwestern

Adams, Jess, Adjunct Instructor, Preventive Community Dentistry, 2011 (2011); BA 1999 Colorado; DDS 2007 Colorado

Adams, Lafayette Bluford, Associate Professor, American Studies/English, 1994 (2001); BA 1985 Duke; MA 1987 Virginia; PHD 1993 Virginia

Adams, Lori, Lecturer, Biology, 2010 (2010); BS 1998 Illinois; PHD 2003 Texas AM

Adams, Russell, Clinical Adjunct Associate Professor, Internal Medicine, 2000 (2004); MD 1979 Iowa
Adcock, Craig. Professor, Art Art History, 1994 (1994); BFA 1971 Colorado; MA 1974 University of Colorado; PHD 1981 Cornell University

Addis Jr., Laird C. Emeritus Professor, Philosophy, 1963 (1974); BA 1959 Iowa; MA 1960 Brown; PHD 1964 Iowa

Adolphs, Ralph. Adjunct Professor, Neurology, 1997 (2005); BSC 1986 Stanford; MSC 1986 Stanford; PHD 1992 California Technology of Tech

Adrain, Jonathan M. Professor, Earth and Environmental Sciences, 1999 (2011); BS 1989 Alberta; PHD 1993 Alberta

Ahrens, Richard C. Professor, Pediatrics, 1980 (2002); BS 1969 Wisconsin-Madison; MD 1973 Medical College of Wisconsin; MS 1980 Iowa

Ahlers, Timothy John. Clinical Adjunct Assistant Professor, Family Medicine, 2008 (2008); MD 1982 Iowa

Ahier, Azeemuddin. Clinical Professor, Emergency Medicine/Management Organizations, 2005 (2014); BA 1996 Augustana; MD 2000 Iowa; MBA 2010 Iowa

Ahlers, Walid A. Professor, Nursing/Communication Studies, 2013 (2013);

Ahlawal, Gail B. Professor, Law-Faculty, 2010 (2010); BA 1978 New Orleans; MPH 1983 Tulane; JD 1983 Tulane

Agrawal, Naurang. Clinical Professor, Internal Medicine, 2010 (2010); MBBS 1968 Grant Medical, India

Agrell, Jeffrey. Associate Professor, Music, 2000 (2008); BA 1970 St Olaf; MM 1974 Wisconsin

Aguilar Jr., Agustin. Clinical Assistant Professor, Emergency Medicine, 1988 (1995); BS 1978 Emory; MD 1982 Univ Autonomoa de Guadalajara

Ahad, Sajida. Clinical Associate Professor, Surgery, 2014 (2014);

Ahari, Abdi. Clinical Adjunct Assistant Professor, Surgery, 2009 (2009); BA 1987 Rudbeckianska Skolan; MD 1995 Upsaala Univ of Med

Ahern, Christopher A. Associate Professor, Physiology, 2012 (2012);

Ahlers, Katelin Eloyce. Lecturer, Pharmacology, 2014 (2014); BA 2009 Augustana College Sioux Falls

Ahlers, Timothy John. Adjunct Assistant Professor, Health Management Policy, 2008 (2014); BBA 2003 Iowa; MHA 2005 Iowa; MBA 2005 Iowa

Ahmed, Ferhaan. Associate Professor, Radiology/Internal Medicine, 2013 (2013);


Ahrendsen, Jon Sidney. Clinical Adjunct Assistant Professor, Family Medicine, 2008 (2008); MD 1982 Iowa

Ahrens, Richard C. Professor, Pediatrics, 1980 (2002); BS 1969 Wisconsin-Madison; MD 1973 Medical College of Wisconsin; MS 1980 Iowa

Aikin, Judith P. Emeritus Professor, German, 1975 (1988); BA 1968 Oregon; MA 1969 Oregon; PHD 1974 California-Berkeley

Ajuni, Nader. Clinical Adjunct Assistant Professor, Pediatrics, 1999 (1999); DO 1985 Osteopathic Medicine

Akbar, Raja M.. Clinical Adjunct Assistant Professor, Psychiatry, 1999 (1999); MD 1971 King Edward Medical

Akyea, Modei Kwasi. Adjunct Instructor, Dance, 2008 (2011); BA 1997 Iowa

Al-Zubeidi, Dina Naser Saleh. Clinical Assistant Professor, Pediatrics, 2012 (2012);

Alabsi, Samir Y. Clinical Adjunct Associate Professor, Pediatrics, 2007 (2010); MD 1985 Cario, Egypt

Alamert, Renata Pereira. Assistant Professor, Internal Medicine, 2013 (2013);

Albers, Gary Ronald. Adjunct Instructor, Pharmacy, 1997 (1997); BS 1975 Iowa

Albert, James Laurence. Lecturer, Theatre Arts/Dance, 1996 (1999); MFA 1986 Iowa

Albonetti, Celesta A.. Professor, Sociology, 1998 (2000); BA 1973 Missouri-St. Louis; MA 1975 Missouri-St. Louis; PHD 1984 Wisconsin-Madison

Albrecht, Joseph Haws. Professor, Military Science, 2013 (2013);

Albrecht, William P.. Emeritus Professor, Economics, 1965 (1982); AB 1956 Princeton; MA 1962 South Carolina; MA 1963 Yale; PhD 1965 Yale

Albright, John P.. Professor, Orthopaedics and Rehabilitation/Health and Human Physiology, 1972 (1981); BA 1963 Illinois; MD 1967 Loyola

Alden, Jeffrey D.. Clinical Assistant Professor, Psychiatry, 2011 (2011); MD 1992 Uniformed Services UHS

Alderton, Megan Elaine. Adjunct Assistant Professor, Pharmacy Practice and Science, 2003 (2003); PHARMD 2001 Drake

Aldoss, Osamah. Clinical Assistant Professor, Pediatrics, 2013 (2013);

Alegre-Femenias, Analia. Adjunct Assistant Professor, Dance, 2013 (2013); BFA 2005 New World School of ARTs FL


Alexander, Bruce. Emeritus Professor, Pharmacy/Psychiatry, 1976 (2000); BS 1974 Drake; PHARMD 1976 Minnesota

Alexander, Meredith. Lecturer, Theatre Arts, 1992 (1997); MFA 1981 California-San Diego

Alexander, Peter M.. Adjunct Assistant Professor, Music, 2009 (2009); BME 1967 Indiana; MM 1977 Indiana; PHD 1986 Indiana

Alexander, Saramma J.. Clinical Adjunct Assistant Professor, Internal Medicine, 1979 (1979); MBBS 1965 Christian Med School-India

Alipour, Fariborz, Adjunct Professor, Communication Sciences and Disorders, 1985 (2004); MS 1971 Tehran; BS 1971 Tehran; PHD 1981 Iowa

Allan, Gay Dudley, Lecturer, Spanish Portuguese, 2004 (2006); MA 1984 Iowa; MFA 1988 Iowa; PHD 1992 Iowa

Allareddy, Veerasathpurush, Associate Professor, Orthodontics, 2013 (2013);

Allareddy, Veeratrishul, Clinical Associate Professor, Radiology/Ooral Path,RadiologyMedicine, 2008 (2012); BDS 2002 Ragas Dental College

Allbaugh, Laurie, Adjunct Instructor, Pharmacy, 2002 (2002); BS 1978 Iowa

Allen, Bryan G., Assistant Professor, Radiation Oncology, 2013 (2013);

Allen, Daniel P., Clinical Adjunct Assistant Professor, Internal Medicine/Pharmacy, 1987 (1989); MD 1983 Iowa

Allen, Jeffrey F., Adjunct Instructor, Family Dentistry, 2012 (2012);

Allen, John S., Clinical Professor, Law-Faculty, 1991 (2000); BA 1977 St. Olaf; JD 1980 Illinois

Allen, Jonathan Sayre, Lecturer, Music, 2011 (2011); BM 2005 Northern Colorado; MM 2007 Utah; DMA 2011 University of Iowa

Allen, Lee-Ann, Professor, Internal Medicine/Microbiology, 1996 (2010); BS 1982 California-Riverside; MS 1983 California-Riverside; PHD 1990 Wisconsin-Madison

Allen, Megan Erin, Adjunct Instructor, University College Courses, 2008 (2014); BA 1998 Iowa; MA 2008 Keller School Mgmt, DeVry Univ


Allendorf, Lynn Michelle, Adjunct Lecturer, Management Organizations, 2001 (2001); BS 1986 Iowa; MBA 1997 Iowa

Almiron, Rosario, Adjunct Instructor, Preventive Community Dentistry, 2012 (2012);

Almomani, Thakir Damin Judi, Adjunct Instructor, Biomedical Engineering, 2007 (2007); BSC 1998 Jordon Univ; MS 2001 Jordon Univ; PHD 2007 Iowa

Altmayer, Elizabeth M., Professor, Community Behavioral Health/Psych Quant Foundations, 1980 (1989); BA 1973 Wheaton; MA 1975 Ohio State; PHD 1977 Ohio State

Altman, Charles, Emeritus Professor, Cinema Comparative Literature, 1974 (1986); MA 1966 Duke; AB 1966 Duke; PHD 1971 Yale

Alton, Donald A., Emeritus Professor, Computer Science, 1970 (1981); BA 1965 Rice; PHD 1970 Cornell


Amad, Paula T., Associate Professor, Cinema Comparative Literature, 2004 (2009); MA 1990 Melbourne; BA 1990 Melbourne; PHD 2002 Chicago

Amada, Kenneth, Emeritus Professor, Music, 1967 (1976);

Amado, Michael, Adjunct Lecturer, Law-Faculty, 2012 (2012);

Amler, Alicia Rose, Lecturer, English as Second Language, 2010 (2010); BA 2006 Iowa; MA 2007 Iowa

Ambrisco, Jennifer R., Adjunct Assistant Professor, Pharmacy Practice and Science, 2012 (2012);

Amelon, Elizabeth Wittchow, Adjunct Instructor, Pharmacy Practice and Science, 2012 (2012);

Amendola, Anunnziato, Professor, Physical Therapy/Orthopaedics and Rehabilitation/Health and Human Physiology, 2001 (2004); BS 1980 Western Ontario; MD 1984 Western Ontario

Amendt, Brad Allen, Professor, Anatomy Cell Biology/ Dows Institute-Research, 1999 (2012);

Amir, Rabah, Professor, Economics, 2013 (2013);

Amirkhanian, Serji, Adjunct Professor, Public Policy Center, 2011 (2011); PHD 1987 Clemson

Amonson, Kirby D., Adjunct Instructor, Preventive Community Dentistry, 2014 (2014);

Amos, James John, Clinical Professor, Psychiatry, 1996 (2011); BS 1985 Iowa State; MD 1992 Iowa

An, Amy, Lecturer, Accounting, 1983 (1983); BA 1973 British Columbia; MA 1982 Iowa

An, Brian Pyong, Assistant Professor, Sociology/Educ Policy Leadership Studies, 2010 (2010); BA 2000 Washington; MS 2004 Wisconsin; PHD 2009 Wisconsin

An, Guohua, Assistant Professor, Pharmaceutical Sciences and Experimental Therapeutics, 2014 (2014);

Anaya, Heather Ann, Clinical Assistant Professor, Obstetrics Gynecology, 2014 (2014);

Ancona, Christopher Michael, Adjunct Lecturer, Marketing/Management Organizations, 2012 (2012);


Andersen, David R., Professor, Electrical-Computer Engineering/Physics Astronomy, 1986 (1999); BSEE 1981 Iowa State; MSEE 1982 Purdue; PHD 1986 Purdue

Andersen, Eric G., Professor, Law-Faculty, 1984 (1988); BA 1974 Brigham Young; JD 1977 Brigham Young

Andersen, Kathleen Helen, Lecturer, Anatomy Cell Biology, 1992 (2005); MS 1991 Iowa


Anderson, Barrie, Emeritus Professor, Obstetrics Gynecology, 1982 (1993); BS 1963 Wisconsin; MD 1967 State U of NY-Upstate Med Col

Anderson, Bjorn Peter, Assistant Professor, Art Art History, 2007 (2007); MA 1999 British Columbia; MA 2004 Michigan; PHD 2005 Michigan

Anderson, Bruce A., Adjunct Assistant Professor, Preventive Community Dentistry, 1990 (1992); DDS 1988 Iowa
Anderson, Caryn M., Clinical Assistant Professor, Radiation Oncology, 2008 (2008); MD 2003 Texas Medical Branch

Anderson, Charles V., Emeritus Associate Professor, Communication Sciences and Disorders, 1966 (1968);

Anderson, Daniel D., Professor, Mathematics, 1974 (1983); BA 1971 Iowa; MS 1971 Chicago; PhD 1974 Chicago

Anderson, Dawn Renee Barker, Lecturer, Law-Faculty, 2001 (2001); BA 1992 N - Iowa; JD 1995 Iowa

Anderson, Donald Dean, Associate Professor, Biomedical Engineering/Orthopaedics and Rehabilitation, 2004 (2009); BSE 1985 IOWA; MS 1986 IOWA; PhD 1989 IOWA

Anderson, Erling A., Emeritus Associate Professor, Psychology, 1989 (1993); BA 1972 Wisconsin; MA 1981 Iowa; PhD 1984 Iowa

Anderson, Kenneth W., Clinical Adjunct Assistant Professor, Pediatrics, 1975 (1975); MD 1972 Northwestern

Anderson, Lars Gunnar, Adjunct Lecturer, Law-Faculty, 2013 (2013);

Anderson, Mark Edward, Adjunct Professor, Radiation Oncology/Physiology/Internal Medicine, 2005 (2005); BA 1981 Macalester; PhD 1987 Minnesota; MD 1989 Minnesota

Anderson, Michael Gary, Associate Professor, Ophthalmology Visual Science/Physiology, 2004 (2010); PhD 1997 Iowa

Anderson, Paul G., Emeritus Professor, Music, 1949 (1968); BM 1948 Iowa; MA 1949 Iowa

Anderson, Rachel L., Emeritus Associate Professor, Health Management Policy, 1999 (2005); BA 1987 Beloit; PhD 1997 Northwestern

Anderson, Raymond Ronald, Adjunct Assistant Professor, Earth and Environmental Sciences, 1993 (1993); PhD 1992 Iowa

Anderson, Richard, Lecturer, English as Second Language, 2010 (2010); MA 2010 Northern Iowa

Anderson, Robert F., Clinical Adjunct Associate Professor, Pediatrics, 2002 (2009); BA 1971 SAINT MARY’S; MD 1975 IOWA

Anderson, Rockford Charles, Adjunct Assistant Professor, Pharmacy, 2010 (2012); PHARMD 2006 Drake

Anderson, Scott Mitchell, Adjunct Assistant Professor, Preventive Community Dentistry/Family Dentistry, 2012 (2012); BBA 2001 University of Iowa

Anderson, Steven Wayne, Associate Professor, Neurology, 1994 (2003); BA 1982 South Florida; MA 1985 Iowa; PhD 1987 Iowa

Anderson, Steven Paul, Adjunct Assistant Professor, Family Dentistry, 2005 (2005); DDS 1980 Iowa

Anderson, Teresa M., Adjunct Instructor, Pharmacy, 2009 (2009); BSPH 1995 South Dakota State

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Andrews, Janet Isabel, Clinical Assistant Professor, Obstetrics Gynecology, 2014 (2007); BA 1983 BOWDOIN, ME; MD 1990 VANDERBILT,TN

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Anguelov, Zlatko, Adjunct Lecturer, Interdisciplinary Programs, 2008 (2008); MD 1972 Varna, Bulgaria; MA 1995 McGill

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Ansley, Timothy N., Associate Professor, Psych Quant Foundations, 1983 (1989); BA 1974 Eastern Illinois; MS 1977 Northern Illinois; PhD 1984 Iowa

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Barker, David Robert, Adjunct Professor, Finance, 2004 (2008); BA 1984 CALIFORNIA-BERKELEY; MA 1986 CHICAGO; PHD 1991 CHICAGO
Barker, Jason H., Assistant Professor, Internal Medicine, 2005 (2007); MD 1999 Baylor
Barker, Maria Teresita, Adjunct Assistant Professor, Educ Policy Leadership Studies, 2014 (2014); JD 2009 University of Iowa
Barlo, Thomas J., Associate Professor, Radiology, 1981 (1992); BS 1971 Loras; MD 1975 Wisconsin
Barlow, Eric, Clinical Adjunct Assistant Professor, Psychiatry, 2007 (2007); BA 1991 Augustana; BA 1995 Augustana College, SD; MD 1999 South Dakota
Barlow, Patrick, Assistant Professor, Internal Medicine, 2014 (2014);
Barnard, Denise Marie, Adjunct Instructor, Division of Interdisciplinary Program, 2014 (2014);
Barnes, Ed C., Adjunct Instructor, Social Work, 2000 (2000); MSW 1999 Iowa
Barnes, Erin Frances, Adjunct Assistant Professor, Rehabilitation and Counselor Education, 2007 (2011); BA 2001 Iowa; MA 2005 Iowa
Barnes, Kyle Matthew, Adjunct Assistant Professor, Pharmacy Practice and Science, 2013 (2013); BA 2007 University of Iowa
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Barnhardt, Cassie L., Assistant Professor, Educ Policy Leadership Studies, 2012 (2012);
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Baron, Robert S., Emeritus Professor, Psychology, 1970 (1982); BS 1965 Cornell; PHD 1970 Minnesota
Baron, Robert Jacob, Emeritus Professor, Computer Science, 1970 (1993); AB 1963 San Diego State; MS 1965 Cornell; PHD 1968 Cornell
Barquist, Stephanie Kay Rudish, Adjunct Assistant Professor, Operative Dentistry, 2000 (2000); BA 1995 Iowa; DDS 1998 Iowa
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Barrash, Joseph, Clinical Associate Professor, Psychology/Neurology, 1998 (2006); PHD 1988 Iowa
Barrett, Timothy D., Associate Professor, Interdisciplinary Programs, 1993 (1998); BA 1973 Antioch
Barron, Sheila, Adjunct Assistant Professor, Psych Quant Foundations, 2001 (2001); BA 1989 Iowa; MA 1991 Iowa; PHD 1993 Iowa
Barta, Gary Allen, Adjunct Instructor, University College, 2011 (2014); BS 1987 North Dakota State
Bartachek, Amy Lynn, Adjunct Lecturer, University College, 2005 (2005); MA 2001 Iowa
Barth Leick, Marcia Ann, Adjunct Instructor, Communication Sciences and Disorders, 1999 (1999); MA 1996 Northern Iowa
Bartholomay, Lyric C., Adjunct Associate Professor, Epidemiology, 2014 (2014);
Bartlett, Heather L., Clinical Adjunct Associate Professor, Pediatrics, 2004 (2013); BS 1991 Arizona College of Med; MD 1995 Arizona College of Med
Bartlett, Luke Joseph, Adjunct Assistant Professor, Pharmacy, 2008 (2008); PHARM 2000 Iowa
Bartolome, Jasper Zitte Ea, Adjunct Instructor, Preventive Community Dentistry, 2014 (2014);
Barton, Lori A., Adjunct Instructor, Pharmacy, 2005 (2005); BS 1995 Iowa
Barwacz, Christopher Andrew, Assistant Professor, Dows Institute-Research/Prosthodontics, 2008 (2010); DDS 2007 Iowa
Bashir, Amani, Clinical Assistant Professor, Pathology, 2011 (2011); MBBS 1998 Jordan
Bashir, Mohammad, Clinical Assistant Professor, Cardiothoracic Surgery, 2013 (2013); MBBS 2003 University of Jordan
Basile, Monica Reese, Adjunct Assistant Professor, Gender's and Sexuality Studies, 2013 (2013);
Basom, Ann Maria, Adjunct Instructor, Asian Slavic Languages Literature, 2008 (2008); BA 1980 Minnesota; MA 1982 Wisconsin; PHD 1987 Wisconsin
Bassingthwaite, Brenda Jean, Adjunct Assistant Professor, Pediatrics/Psych Quant Foundations, 2010 (2010); BA 1995 North Dakota State; MS 1998 Iowa State; PHD 2007 Iowa
Bassuk, Alexander G., Associate Professor, Pediatrics/Neurology, 2007 (2011); MD 1999 Chicago
Basu, Hriden Narayan, Clinical Adjunct Assistant Professor, Internal Medicine, 2000 (2000); MD 1964 Calcutta Medical
Basu, Nandita, Adjunct Assistant Professor, Civil-Environmental Engineering, 2009 (2009); BENG 1997 Jadavpur University; BE 1997 Jadavpur; MCE 2001 Indian Institute of Tech; PHD 2006 Purdue
Bates, James N., Associate Professor, Anesthesiology, 1984 (1990); BA 1972 Calif-Santa Barbara; MA 1975 Calif-Santa Barbara; PHD 1977 Calif-Santa Barbara; MD 1981 Miami
Bates, Melissa, Assistant Professor, Health and Human Physiology, 2014 (2014);
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Bauder, Stephanie Rene, Adjunct Lecturer, Marketing, 2012 (2012);

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Baumbach, Gary Lynn, Professor, Pathology, 1980 (1996); BA 1971 Wartburg; MD 1976 Iowa

Baumert, Paul Willard, Professor, Family Medicine, 1995 (2004); BA 1975 Colorado College; MD 1976 Iowa

Baumbach, Gary Lynn, Professor, Family Medicine, 1995 (2004); BA 1975 Colorado College; MD 1976 Iowa

Baybayan, Amber Lea, Adjunct Assistant Professor, Pharmacy Practice and Science, 2011 (2011); BS 2006 Samford; MA 2010 Iowa

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Bayless, John D., Emeritus Professor, Psychiatry, 1999 (2008); BS 1974 Wisconsin-Oshkosh; MS 1977 Wisconsin-Oshkosh; PhD 1986 Iowa

Bayman, Emine Ozgur, Assistant Professor, Anesthesia/Biostatistics, 2008 (2011); BA 1999 Hacettepe, Turkey; MS 2002 Bursa, Turkey; MS 2004 Iowa; PhD 2008 Iowa

Baynton, Douglas Cameron, Associate Professor, Communication Sciences and Disorders/History, 1993 (2002); BS 1986 Western Oregon State; MA 1988 Iowa; PhD 1993 Iowa

Bayon, Rodrigo, Clinical Assistant Professor, Otolaryngology-Head Neck Surgery, 2010 (2010); MD 2004 South Florida Med

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Beckett, Andrew, Adjunct Assistant Professor, Edu Policy Leadership Studies, 2011 (2011); BS 1994 Truman State; MA 1996 Arizona; PhD 2006 Missouri-Columbia

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Bednar, Thomas Michael, Lecturer, Management Sciences, 2009 (2009); BBA 1973 Iowa

Beebout, Susan, Clinical Adjunct Assistant Professor, Internal Medicine, 2005 (2008); BS 1997 Iowa State; MD 2001 Iowa
Beecher, Stephanie Lynn, Adjunct Instructor, University College Courses, 2010 (2010); BLS 2008 Coe; MA 2010 Iowa

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Begley, Wayne E., Emeritus Professor, Art Art History, 1966 (1980);


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Bellus, Paul, Adjunct Instructor, Communication Studies, 2001 (2001); BS 1993 Nebraska; MA 1995 Nebraska

Beltran-Garcia, Luis, Clinical Adjunct Assistant Professor, Internal Medicine, 2011 (2011); MD 2000 Pontificia

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Bennett, David, Professor, Geographical and Sustainability Sciences, 2000 (2010); BA 1980 Northern Iowa; MA 1982 Michigan; PHD 1994 Iowa

Bennett, Jeffrey A., Associate Professor, Communication Studies, 2009 (2012); BA 1996 Wayne State; MA 1998 Northern Illinois; PHD 2004 Indiana

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Bennett, Tracey L., Adjunct Instructor, Pharmacy, 2007 (2007); BSPH 1992 Drake

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Berrey, Marquis Shane, Assistant Professor, Classics, 2011 (2011); BA 2003 St Olaf; MA 2006 Texas @ Austin; PhD 2011 Texas @ Austin

Berry, Erin M., Adjunct Assistant Professor, Pharmacy Practice and Science, 2013 (2013);

Berry, Sean R., Adjunct Lecturer, Law-Faculty, 2001 (2003); BBA 1982 Notre Dame; JD 1987 Northwestern

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Bertolatus, John Andrew, Associate Professor, Internal Medicine, 1982 (1992); BA 1972 Johns Hopkins; MD 1976 Johns Hopkins

Bessman-Quintero, Margaret Ann, Adjunct Instructor, Social Work, 2005 (2005); MSW 2005 Iowa

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Bettis, Elmer Arthur lii., Associate Professor, Earth and Environmental Sciences, 1995 (1995); BS 1975 Iowa State; MS 1979 Iowa State; PHD 1995 Iowa

Betts, Carl E., Emeritus Associate Professor, Communication Sciences and Disorders/Pediatrics, 1970 (1979); BA 1951 Iowa; MA 1957 Iowa; PHD 1963 Iowa

Beyer, John Peter, Adjunct Instructor, Pharmacy Practice and Science, 2014 (2014);

Beyer, Nancy Ellen, Clinical Assistant Professor, Pediatrics/Psychiatry, 2008 (2008); BA 1982 Iowa; MA 1985 Iowa; MD 2003 Iowa

Bhalla, Ramesh C., Emeritus Professor, Anatomy Cell Biology, 1973 (1982); BVSC 1957 Panjab-India; FRVCS 1962 Stockholm; PHD 1970 Wisconsin

Bhama, Jay Kumar, Clinical Associate Professor, Cardiothoracic Surgery, 2014 (2014);

Bhandary, Asha Leena, Assistant Professor, Philosophy, 2012 (2012);

Bhargava, Anuj, Clinical Adjunct Associate Professor, Internal Medicine, 2005 (2010); MBBS 1996 Manlana Azad Medical
Bhatia, Sudershank R., Clinical Associate Professor, Radiation Oncology, 2005 (2013); MD 1977 Allahabad; MPH 1986 John Hopkins; PhD 1992 John Hopkins

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Bird, Robert Christopher, Adjunct Associate Professor, Management Organizations, 2014 (2014);

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Blum, Nancee Sue Rose, Adjunct Instructor, Psychiatry, 1994 (1994); BA 1958 Iowa; MSW 1989 Iowa

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Brenneman, Anthony E., Clinical Professor, Physician Assistant, 2004 (2014); BA 1984 Linfield, OR; MSW 1987 Portland State; MPAS 1996 Iowa

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Brenner, Robert L., Emeritus Associate Professor, Earth and Environmental Sciences, 1977 (1982); BS 1963 City College of New York; MS 1964 Montana; PHD 1973 Missouri

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Brigham, Jeremy John, Adjunct Assistant Professor, University College Courses, 2000 (2000); BA 1966 Antioch; MA 1997 Iowa; PHD 1998 Iowa

Bright, David, Adjunct Lecturer, Law-Faculty, 2013 (2013);

Brighton, Veronica A., Emeritus Assistant Professor, Nursing, 1975 (2002); BSN 1975 Iowa; MA 1977 Iowa

Brinkman, Mary Kay, Adjunct Instructor, Preventive Community Dentistry, 2009 (2009);

Bristol, Timothy John, Adjunct Assistant Professor, Nursing, 2006 (2006); BSN 1998 Wisconsin-Madison; MSN 2000 Clarkson; PhD 2005 Capella

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Broderick, Ann, Clinical Professor, Internal Medicine, 2001 (2013); AB 1978 Princeton; MD 1986 Iowa; MS 1991 Iowa


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Brokel, Jane, Adjunct Assistant Professor, Nursing, 2004 (2004); BSN 1988 Iowa; MA 1992 Iowa; PHD 2003 Iowa

Brook, Stacey Lee, Lecturer, Economics, 2008 (2008); BBA 1989 Eastern New Mexico; MA 1991 Nebraska-Lincoln; PHD 1995 Colorado State


Brooks, Mary Kay, Adjunct Instructor, Nursing, 2015 (1994); BSN 1991 University of Iowa; MSN 2003 University of Iowa

Brooks, Michael S., Clinical Adjunct Assistant Professor, Internal Medicine, 1986 (1986); MD 1980 Loyola

Brooks, Philip Dean, Adjunct Lecturer, Finance, 2005 (2005); BBA 1972 Iowa; MBA 1974 Iowa; JD 1977 Creighton

Brophy, Patrick David, Professor, Surgery/Pediatrics, 2007 (2014); MD 1994 Saskatchewan

Brosius, Gregory Alan, Adjunct Assistant Professor, Pharmacy, 2002 (2002); PHARM 2000 Iowa

Brown, Allison, Clinical Adjunct Assistant Professor, Pediatrics, 2005 (2005); BA 1997 William Jewell; MD 2001 Iowa

Brown, Bartram S., Adjunct Lecturer, Law-Faculty, 2014 (2014);

Brown, Bruce Philson, Emeritus Associate Professor, Radiology, 1977 (1995); BS 1966 Michigan; MD 1971 Medical College of VA

Brown, Carolyn Jane, Professor, Otolaryngology-Head Neck Surgery/Communication Sciences and Disorders, 1992 (2006); BS 1980 Iowa; MSPA 1982 Washington; PHD 1989 Iowa

Brown, Carolyn J., Associate Adjunct Professor, Communication Sciences and Disorders, 1983 (1992); PHD 1981 Iowa

Brown, Charles Edward, Adjunct Lecturer, Health Management Policy, 2000 (2000); MHA 1984 Washington

Brown, Donald D., Professor, Internal Medicine, 1973 (1994); BA 1962 Iowa; MS 1965 Iowa; MD 1966 Iowa

Brown, Elizabeth Ann, Clinical Adjunct Assistant Professor, Ophthalmology Visual Science, 2005 (2005); BS 1988 Iowa; MD 1992 Iowa; MA 1994 Iowa

Brown, Jaime, Lecturer, Nursing, 2014 (2014); BSN 2009 University of Iowa

Brown, James Andrew, Professor, Urology/Biomedical Engineering, 2009 (2011); BA 1986 Colorado State; BS 1986 Colorado State University, CO; MD 1991 Baylor

Brown, Jennifer Erin, Lecturer, English as Second Language, 2004 (2010); MA 2004 Iowa

Brown, Kyle E., Associate Professor, Internal Medicine/Radiation Oncology, 2001 (2007); BA 1981 Case Western Reserve; MSC 1982 London-Economics; MD 1986 Case Western Reserve

Brown, Matthew Robert, Clinical Adjunct Assistant Professor, Otolaryngology-Head Neck Surgery, 2006 (2006); MD 1996 Iowa

Brown, Matthew P., Associate Professor, English, 2001 (2007); BA 1986 Oberlin; PHD 1996 Virginia

Brown, Nicholas Anthony, Adjunct Assistant Professor, American Studies/Geographical and Sustainability Sciences, 2013 (2013);

Brown, Robert Terrance, Clinical Adjunct Assistant Professor, Otolaryngology-Head Neck Surgery, 1997 (1997); MD 1966 Iowa

Brown, Roger Lee, Adjunct Instructor, Preventive Community Dentistry, 2014 (2014);


Brown, Thomas M. Jr., Clinical Adjunct Assistant Professor, Internal Medicine, 1980 (1980); MD 1969 Vanderbilt

Brown, Timothy Leo, Adjunct Assistant Professor, Industrial Engineering, 2003 (2003); BE 1994 Iowa; MS 1996 Iowa; PHD 2000 Iowa

Brown-Matthes, Alicia Anne, Emeritus Associate Professor, Dance, 1976 (1982); BA 1972 George Washington; MA 1976 Iowa

Brownlee, Michael Joseph, Clinical Associate Professor, Pharmacy Practice and Science, 2012 (2012);

Bruch, Brittany Ann, Adjunct Instructor, Pharmacy Practice and Science, 2014 (2014);

Bruch, Leslie Anne, Clinical Professor, Pathology/Neurosurgery, 2006 (2011); BS 1986 Iowa; MD 1992 Iowa

Bruch, Sarah K., Assistant Professor, Sociology/Public Policy Center, 2012 (2013);

Bruell, Steven C., Emeritus Professor, Computer Science, 1985 (1996); BA 1973 Texas-Austin; MS 1975 Purdue; PHD 1978 Purdue

Brugge, John F., Adjunct Associate Professor, Neurosurgery, 1997 (2013); BA 1959 LUTHER; MS 1961 ILLINOIS-URBANA CHAMPAGNE; PHD 1963 ILLINOIS-URBANA CHAMPAGNE

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Brunner Luse, Christine Carol, Adjunct Instructor, Division of Interdisciplinary Program, 2014 (2014); BSN 1985 Northern Illinois University; MPA 1989 Northern Illinois University

Brus, Christine Peterson, Adjunct Instructor, Health and Human Physiology, 2013 (2000); BLS 1985 Iowa; MS 1994 Iowa

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Buchkina, Julia Renee, Clinical Assistant Professor, Family Medicine, 2012 (2012);

Buchman, Thomas A., Adjunct Associate Professor, Accounting, 2010 (2010); BS 1965 Illinois; MS 1970 Illinois; PHD 1976 Illinois

Buckingham, Edward T., Clinical Assistant Professor, Psychiatry, 2012 (2012);

Buckley, Jennifer Ann, Assistant Professor, English/Rhetoric, 2011 (2013); BA 1998 Michigan; MA 2005 Columbia; MPHIL 2007 Columbia

Buckwalter, Joseph Addison, Professor, Orthopaedics and Rehabilitation/Pediatrics, 1979 (1985); BA 1969 Iowa; MS 1972 Iowa; MD 1974 Iowa

Buckwalter, Kathleen Coen, Emeritus Professor, Nursing, 1974 (1989); BSN 1971 Iowa; MA 1976 Iowa; PHD 1980 Illinois

Budd, Ann F., Professor, Earth and Environmental Sciences, 1978 (1995); BA 1973 Lawrence; MS 1975 Johns Hopkins; PHD 1978 Johns Hopkins

Buettner, Garry R., Professor, Radiation Oncology, 1993 (1999); BA 1967 Northern Iowa; MS 1969 Iowa; PHD 1976 Iowa

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Bulechek, Gloria Marie, Emeritus Professor, Nursing, 1963 (1996); BSN 1963 Iowa; MA 1967 Iowa; PHD 1981 Iowa

Bullock, Julie M., Adjunct Assistant Professor, Pharmacy Practice and Science, 2015 (2015);

Bullock, Tammy Sue Clapham, Adjunct Assistant Professor, Pharmacy, 2003 (2003); PHARM 1998 Iowa

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Bunell, Charlene Elisabeth, Adjunct Professor, Communication Studies/Journalism Mass Communication, 2008 (2012); MA 1979 Western Illinois; PHD 1995 Delaware

Bunting, Dean A., Clinical Adjunct Assistant Professor, Family Medicine, 1990 (2002); BS 1980 Dubuque; MD 1984 Iowa

Bunyan, Rodney Jermaine, Assistant Professor, Military Science, 2014 (2014);

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Burden, Tamara J., Clinical Adjunct Assistant Professor, Internal Medicine, 2005 (2005); BA 1989 Northern Iowa; DO 1993 University of Osteopathic Med

Burek Pierce, Jennifer, Associate Professor, Library Information Science, 2005 (2011); MA 1990 Gonzaga; AMLS 1999 Indiana; PhD 1999 Indiana

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Burke, Maureen Elizabeth, Adjunct Instructor, Linguistics, 1981 (1997); BA 1968 Emmanuel College; MA 1984 Iowa

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Burks, Douglas Alan, Adjunct Assistant Professor, Pharmacy, 2009 (2009); PHARM.D 1979 Iowa; MBA 1998 St Ambrose

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Burns, Dale Henry, Adjunct Assistant Professor, Earth and Environmental Sciences, 2014 (2014);

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Burnside, Matthew Kyle, Adjunct Assistant Professor, Creative Writing, 2014 (2014);

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Burton, Donald J., Emeritus Professor, Chemistry, 1962 (1970); BS 1956 Loyola-Maryland; PHD 1961 Cornell

Burton, Richard G., Clinical Professor, Oral Maxillofacial Surgery, 1997 (2002); BA 1973 Hanover College; DDS 1977 Ohio State; MS 1985 Iowa

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Buss, Aaron Thomas, Adjunct Assistant Professor, Psychology, 2014 (2014);


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Butler, Audrey Achin, Lecturer, Chemical Biochemical Engineering, 1989 (1998); PhD 1989 Iowa

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Butler, Nicholas Ryan, Clinical Assistant Professor, Family Medicine, 2013 (2013);

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Cameron, Lauren Nicole, Lecturer, Rhetoric, 2013 (2013);

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Capp, Laura, Adjunct Assistant Professor, Interdisciplinary Programs, 2013 (2014); PHD 2010 University of Iowa

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Carlson, Patrick Joseph, Adjunct Instructor, Social Work, 2014 (2014);

Carlson, Wayne R., Emeritus Professor, Biology, 1968 (1993); BA 1962 Rockford; MA 1966 Indiana; PHD 1968 Indiana
Carlstein, Andres Augustine, Adjunct Assistant Professor, Division of Interdisciplinary Program, 2012 (2012);
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Clark, Craig B., Clinical Adjunct Professor, Internal Medicine, 2001 (2011); BS 1991 Iowa State; DO 1995 Des Moines–Col of Osteopa

Clark, Eve Dillman, Clinical Associate Professor, Radiology, 2008 (2014); MD 2002 Iowa

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Clark, Lee Anna, Emeritus Professor, Psychology, 1993 (1993); BA 1972 Cornell; MA 1977 Cornell; PHD 1982 Minnesota

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Clark, William David, Clinical Associate Professor, Family Medicine, 1999 (2011); BS 1973 Iowa State University; MD 1977 Iowa

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Crabb, Larry, Emeritus Associate Professor, Family Dentistry, 1977 (1979);

Crabb, Thomas G., Adjunct Assistant Professor, Pharmacy Practice and Science, 2006 (2006); BS 1973 Morningside; BSPH 1977 Creighton; JD 1991 Drake

Cra abduction, Kirk, Adjunct Assistant Professor, Pharmacy, 2002 (2002); PHARMD 2001 Iowa

Craft-Rosenberg, Martha Jane, Emeritus Professor, Nursing, 1980 (1997); BSN 1970 Iowa; MA 1978 Iowa; PHD 1985 Iowa

Craig, Steven Robert, Clinical Adjunct Professor, Internal Medicine, 1987 (2005); MD 1979 Iowa

Craig, Steven Michael, Adjunct Assistant Professor, Internal Medicine/Medicine Administration, 2010 (2010); MD 2004 Iowa

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Cram, Albert Edwin, Emeritus Professor, Surgery, 1975 (1991); BS 1965 Nebraska; MD 1969 Nebraska

Cram, Ellen, Clinical Associate Professor, Nursing, 2000 (2005); BSN 1980 Coe; MA 1989 Iowa; PHD 2002 University of Iowa

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Cramer, Bradley Douglas, Assistant Professor, International Programs/Earth and Environmental Sciences, 2012 (2012);

Cramer, Elizabeth Suzanne, Clinical Assistant Professor, Family Medicine, 2012 (2012);

Cranberg, Gilbert, Emeritus Professor, Journalism Mass Communication, 1982 (1982); BA 1949 Syracuse; MA 1956 Drake

Cranton, Jane Barnes, Clinical Instructor, Teaching and Learning, 2005 (2009); MA 1980 Western Illinois; MA 1993 Iowa

Crawford, Eean Robert, Assistant Professor, Management Organizations, 2011 (2011); BS 2006 Brigham Young; MAC 2006 Brigham Young; PHD 2011 Florida

Crawford, Lance Wayne, Adjunct Assistant Professor, Endodontics, 2003 (2003); BS 1971 Iowa; BDS 1975 Loyola-Chicago; CER 1981 Loyola-Chicago

Crawford, Robert G., Adjunct Associate Professor, Economics, 2009 (2009); MS 1971 Carnegie Mellon; PHD 1976 Carnegie Mellon

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Cremer, James F., Professor, Computer Science, 1992 (2003); BS 1982 Cornell University; MS 1988 Cornell University; PHD 1998 Cornell University

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Criswell, Thomas J., Adjunct Assistant Professor, Pharmacy Practice and Science, 2010 (2012); PHARMD 2010 Iowa

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Crocket, Erin, Clinical Assistant Professor, Psychiatry, 2011 (2011); MD 2007 South Carolina

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Cruden, Robert W., Emeritus Professor, Biology, 1967 (1978); AB 1958 Hiram; MS 1960 Ohio State; PHD 1967 UC Berkeley

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Cuddihy, Henri A., Emeritus Associate Professor, Internal Medicine, 2000 (2000); BA 1969 New York; MD 1977 Alabama

Cullen, Joseph John, Professor, Radiation Oncology/Surgery, 1993 (2005); BS 1981 Loras; MD 1986 Iowa

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Cumings, Stephen Paul, Clinical Assistant Professor, Social Work, 2005 (2012); BA 1994 Iowa; MSW 2002 Iowa

Cummins, Phillip D., Emeritus Professor, Philosophy, 1963 (1974); BA 1957 Iowa; MA 1959 Iowa; PHD 1961 Iowa

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Daley, Michael E., Associate Professor, Biology, 1996 (2002); BS 1985 Geneva; PhD 1990 Washington

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Danielos, Peter T., Adjunct Assistant Professor, Psychiatry, 2010 (2010); BS 1984 Denver; MD 1989 North Dakota

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Davidovic, Jovana, Assistant Professor, Philosophy, 2012 (2012);
Davidson, Ashley Rose, Adjunct Assistant Professor, Creative Writing, 2012 (2012);
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Davidson, Jill Ellen Kramer, Clinical Adjunct Assistant Professor, Obstetrics Gynecology, 1995 (1995); MD 1988 Iowa
Davies, Brandon Scott Joseph, Assistant Professor, Biochemistry, 2012 (2012);
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Davis, David A., Clinical Adjunct Assistant Professor, Dermatology, 2001 (2001); MD 1994 Colorado
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Davis, Leodis, Emeritus Professor, Chemistry, 1968 (1976); BS 1956 Missouri; MS 1958 Iowa State; PHD 1960 Iowa State
Davis, Mary J., Adjunct Lecturer, Law-Faculty, 2014 (2014);
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Davis, Patricia H., Emeritus Professor, Neurology, 1992 (2005); BS 1973 Queen's-Ontario; MD 1977 Queen's-Ontario
Davis, Rebecca, Clinical Assistant Professor, Internal Medicine, 2007 (2007); BS 1981 Indiana; MD 1987 Indiana
Davis, Roy C., Adjunct Assistant Professor, Pharmacy, 1997 (1997); BA 1979 Pittsburgh; BS 1987 Kansas; PHARMD 1995 Duquesne
Davis, William Alan, Emeritus Associate Professor, Obstetrics Gynecology, 2000 (2003); BA 1963 Wartburg; MD 1967 Illinois
Davis, Wilson L. Jr., Clinical Adjunct Instructor, Internal Medicine, 1990 (1990); MD 1978 Iowa
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Dawson, Deborah V., Professor, Dows Institute-Research/Biostatistics, 2001 (2001); BA 1974 Montclair State; SCM 1976 Johns Hopkins; PHD 1981 North Carolina
Dawson, Jeffrey D., Professor, Biostatistics, 1991 (2009); BS 1987 Brigham Young; SCD 1991 Harvard
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Dayton, Michael John, Adjunct Lecturer, Management Organizations, 2015 (2015);
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De Boyrie, Maria Eugenia, Adjunct Associate Professor, Economics, 2014 (2014);
De Castro Filho, Luciano Irineu, Associate Professor, Economics, 2014 (2014);
De La Pena, George R., Associate Professor, Dance, 2004 (2005);
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De Puma, Richard Daniel, Emeritus Professor, Art Art History, 1968 (1986); BA 1964 Swarthmore; MA 1967 Bryn Mawr; PhD 1969 Bryn Mawr
De Saint Victor, Carol, Emeritus Professor, English, 1966 (1984); BA 1956 Indiana; PhD 1966 Indiana
Dean, Asabi Afi, Lecturer, Rehabilitation and Counselor Education, 2011 (2011); BA 1998 Chicago State; MA 2006 Chicago State
Dean, Thomas Keith, Adjunct Assistant Professor, University College Courses/Health and Human Physiology, 2000 (2000); BA 1982 Northern Illinois; BM 1982 Northern Illinois; MA 1984 Northern Illinois; PHD 1993 Iowa
Debergh, Jennifer, Adjunct Lecturer, Nursing, 2014 (2014); BS 1993 Elizabethtown College; MS 2008 Emporia State University
Deboer, Angela, Lecturer, English as Second Language, 2010 (2010); MA 2001 Minnesota
Decker, Scott Matthew, Adjunct Assistant Professor, Pharmacy Practice and Science, 2010 (2010); PHARMD 2008 Iowa
Decook, Rhonda R., Lecturer, Statistics Actuarial Science, 2006 (2012); BS 1993 Iowa State; MS 2002 Iowa State; PHD 2006 Iowa State
Dee, Fred Randolph, Emeritus Professor, Pathology, 1974 (1983); BA 1963 Iowa; MD 1967 Iowa
Deeter, David Perry, Adjunct Professor, Occupational Environmental Health, 2013 (2013);
Degeest, David Scott, Adjunct Lecturer, Management Organizations, 2014 (2014);
Degner, Katherine Marie, Adjunct Assistant Professor, Teaching and Learning, 2014 (2014);
Degowin, Richard L., Emeritus Professor, Internal Medicine, 1968 (1973); MD 1959 Chicago
Dehn, Richard William, Emeritus Professor, Physician Assistant, 1994 (2000); BA 1973 Iowa; BS 1976 Iowa; MPA 1991 Golden Gate
Dehring, Deborah J., Associate Professor, Anesthesia, 1993 (1993); BS 1974 Wisconsin; MD 1978 Wisconsin
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Dejung, Douglas V., Professor, Accounting, 1980 (1993); BBA 1970 Iowa; MBA 1971 Iowa; PhD 1980 Michigan
Dejung, Stacey Lynn, Assistant Professor, Physical Therapy, 2014 (2014);
Delaney, Connie J., Emeritus Professor, Library Information Science, 1986 (2002); BSN 1975 Viterbo; MA 1978 Iowa; PhD 1986 Iowa
Delaty, Simone, Emeritus Professor, French Italian, 1968 (1986); MA 1962 Grenoble-France; PhD 1970 Bordeaux-France
Deligiorgis, Stavros, Emeritus Professor, Cinema Comparative Literature/English, 1965 (1973);
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Demarco, Diane L., Adjunct Instructor, University College Courses, 2007 (2013); BA 1975 Michigan State; MA 1979 Michigan State
Demello, George, Emeritus Professor, Spanish Portuguese, 1967 (1995); BA 1954 Massachusetts; MA 1959 Colorado; PhD 1968 Colorado
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Demir, Ibrahim, Adjunct Assistant Professor, Civil-Environmental Engineering, 2012 (2012); PhD 2010 University of Georgia
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Denburg, Jeffrey Lewis, Emeritus Professor, Biology, 1977 (1990); BA 1965 Amherst; PhD 1970 Johns Hopkins
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Dennis-Smithart, R. K., Clinical Adjunct Assistant Professor, Pediatrics, 1988 (1988); MD 1982 Iowa
Denniston, Rhawn Flavell, Adjunct Assistant Professor, Earth and Environmental Sciences, 2001 (2001); PhD 2000 Iowa
Densen, Peter, Professor, Internal Medicine/Medicine Administration, 1983 (1991); BA 1966 Colby; MD 1970 Johns Hopkins
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Depew, Mary J., Associate Professor, Classics/International Programs, 1990 (1996); BA 1976 California State; BA 1979 Calif-Irvine; MA 1985 California-Los Angeles; PhD 1989 Calif-Los Angeles
Deppe, Wendy L., Adjunct Instructor, Pharmacy, 2006 (2006); BS 1988 Moorhead State; BSPH 1995 Drake
Deprosse, Charles, Emeritus Associate Professor, Obstetrics Gynecology, 1972 (1978); AB 1946 Cornell; MD 1950 Cornell
Desai, Anand Shashikant, Adjunct Associate Professor, Economics, 2014 (2014);
Deschenes, Cynthia L., Adjunct Instructor, Nursing, 2013 (2013);
Deshpande, Milind S., Adjunct Assistant Professor, Chemical Biochemical Engineering, 2011 (2011); BS 1984 Poona,India; MSC 1986 Poona,India; PhD 1992 Poona,India
Desjardin, Lucy E., Adjunct Assistant Professor, Epidemiology, 2003 (2003); BS 1981 Florida; DPHIL 1993 Florida
Destreul-Johnson, Emilie, Assistant Professor, French Italian, 2013 (2013);
Dettmer, Helena R., Professor, Clas Administration/Classics, 1976 (1997); BA 1972 Indiana; PhD 1976 Michigan
Dettmer, Timothy, Clinical Adjunct Assistant Professor, Otolaryngology-Head Neck Surgery, 2007 (2007); BA 1996 Wartburg College; MA 2000 Jewish Hosp. Cincinnati OH; MD 2000 Iowa
Devane, Benjamin Mitchell, Assistant Professor, Psych Quant Foundations, 2013 (2013);
Devin, Arthur William, Clinical Adjunct Assistant Professor, Urology, 1999 (1999); MD 1977 Iowa
Devocht, James William, Adjunct Associate Professor, Biomedical Engineering, 1997 (2014); PHD 1996 Iowa

Devolder, Russell David, Adjunct Assistant Professor, Pharmacy Practice and Science, 2013 (2013);

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Dietz, Cory Lynn, Clinical Adjunct Assistant Professor, Family Medicine, 1994 (2002); MD 1990 Iowa

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Dobyns, Richard Craig, Clinical Professor, International Programs/Programs Medicine, 1988 (2004); BA 1978 St. Olaf; MD 1983 Minnesota


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Dodge, Jaime Kent, Clinical Adjunct Assistant Professor, Family Medicine, 2012 (2012); Dodge, Rhonda Lynn, Clinical Adjunct Assistant Professor, Pediatrics, 2005 (2005); BA 1996 Simpson; MD 2001 Iowa

Doelle, Gregory Charles, Clinical Professor, Internal Medicine, 2000 (2003); BA 1973 St. Thomas; MD 1977 Minnesota

Doering, John Val, Emeritus Professor, Family Dentistry, 1974 (1989); BA 1966 Regis; DDS 1970 Iowa; MD 1976 Iowa

Doern, Gary V., Emeritus Professor, Pathology/Epidemiology, 1997 (1997); BS 1972 Northwestern; MS 1974 Medical College of Wisconsin; PHD 1977 Medical College of Wisconsin

Doerschug, Kevin Clarke, Clinical Professor, Internal Medicine, 2002 (2013); BA 1990 Grinnell; MD 1994 Iowa


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Doherty, Cornelius, Emeritus Associate Professor, Surgery, 1991 (1997); BS 1959 San Francisco; MD 1963 St Louis

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Dolan Jr., Patrick Anthony, Lecturer, Rhetoric, 1993 (2001); PHD 1994 Iowa

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Dorr, Gloria Graham, Clinical Adjunct Instructor, Nursing, 2000 (2000); BSN 1974 University of Iowa; MA 1979 Iowa

Doucette, William R., Professor, Pharmacy, 1996 (2007); BS 1983 Wisconsin; MS 1988 Wisconsin; PHD 1993 Wisconsin

Dougherty, Joseph Dennis, Adjunct Instructor, Preventive Community Dentistry, 2014 (2014);

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Doyle, Matthew Richard, Adjunct Instructor, Pharmacy, 2001 (2001); BS 1991 Iowa; MS 1996 Western Illinois

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Dresser, Craig, Lecturer, English as Second Language, 2010 (2012); MA 2004 Iowa

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Fagenbaum, Ray Alan, Lecturer, Health and Human Physiology, 2005 (2006); BS 1999 Iowa; MS 2000 Iowa; PHD 2005 Iowa

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Fassler, Jan S., Lecturer, Mathematics, 2011 (2012); BA 1999 Hiram (Ohio); MS 2002 Iowa; PHD 2005 Iowa

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Fassler, Jan S., Lecturer, Mathematics, 2011 (2011); BA 1999 Hiram (Ohio); MS 2002 Iowa; PHD 2005 Iowa

Fasulo, John, Clinical Professor, Physical Medicine/Rehabilitation, 2002 (2002); BS 1977 Michigan; MS 1981 Iowa; PHD 1984 Iowa

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Flaum, Michael Alan, Clinical Professor, Psychiatry, 1990 (2009); BS 1978 Columbia; MD 1982 State U of NY-Stony Brook

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Flemming, Matthew, Clinical Adjunct Assistant Professor, Internal Medicine, 2007 (2007); BA 1987 McGill, Canada; MD 1993 Albany Medical College

Fletcher, Amy, Lecturer, Health and Human Physiology, 2004 (2010); BS 1993 Nebraska @Lincoln; MS 1996 Tennessee

Fletcher, Steven Lloyd, Clinical Assistant Professor, Oral Maxillofacial Surgery, 2010 (2010); BS 1998 Brigham Young; DDS 2006 Iowa

Flood, Michael T., Clinical Adjunct Professor, Internal Medicine, 1992 (2013); BA 1972 Holy Cross; DO 1977 Osteopathic-Des Moines

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Fluharty, Charles W., Clinical Professor, Health Management Policy, 2014 (2014);

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Flynn, Ryan Thomas, Clinical Associate Professor, Radiation Oncology, 2007 (2014); BA 2002 Luther; MS 2004 Madison- Wis.; PHD 2007 Madison-Wis

Foeger, Romaine H., Adjunct Instructor, Social Work, 2003 (2008); BA 1960 Wartburg; MSW 1963 Iowa
Faculty


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Foote, Jan M., Clinical Associate Professor, Nursing, 2011 (2014); BSN 1989 Drake University; MSN 1994 Clarkson; DNP 2009 Iowa

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Foster, Eric D., Clinical Assistant Professor, Biostatistics, 2012 (2012);

Foster, Patricia Ann, Professor, English, 1994 (2006); BA 1970 Vanderbilt; MFA 1980 UCLA; MFA 1986 Iowa; PHD 1993 Florida State


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Fraizer, Michael Christopher, Clinical Adjunct Assistant Professor, Internal Medicine, 2007 (2007); BS 1993 Notre Dame; MD 1997 Iowa

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Frank, Carl Andrew, Assistant Professor, Anatomy Cell Biology, 2010 (2010); BS 1997 Mass Institute of Tech; PHD 2003 UC Berkley

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Freund, Neil, Clinical Adjunct Assistant Professor, Internal Medicine, 2012 (2012);

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Gardner, Thomas V., Emeritus Professor, Oral Maxillofacial Surgery/Family Dentistry, 1974 (1982);

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Garr, Valerie Susanne, Adjunct Instructor, Educ Policy Leadership Studies, 2002 (2011); BA 1987 Iowa; MA 1995 Iowa

Garrett, Robert E., Emeritus Associate Professor, Family Medicine, 1997 (1997); BA 1971 Trinity; MA 1974 Johns Hopkins; MD 1981 Calif-San Diego; MS 1986 Case Western Reserve

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Garvin, Justin Wayne, Lecturer, Mechanical Engineering, 2010 (2011); BSE 2001 Iowa; MS 2003 Iowa; PHD 2006 Iowa

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Gassmann, Michael Jon, Adjunct Instructor, Pharmacy Practice and Science, 2014 (2014);

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Gehl, Carissa Rose Nehl, Adjunct Assistant Professor, Psych Quant Foundations, 2012 (2012);

Gehlbach, Brian, Clinical Associate Professor, Internal Medicine, 2011 (2011); MD 2005 Washington

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Geng, Maxwell Lei, Professor, Chemistry, 1995 (2008); BS 1986 Science and Technology-China; PHD 1994 Duke

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Geers, Dianna L., Adjunct Instructor, Library Information Science, 2014 (2014);

Gehl, Brian Kenneth, Adjunct Assistant Professor, Psychology, 2009 (2010); BA 1999 Jamestown; PHD 2010 Iowa

Gehl, Carissa Rose Nehl, Adjunct Assistant Professor, Psych Quant Foundations, 2012 (2012);

Gehlbach, Brian, Clinical Associate Professor, Internal Medicine, 2011 (2011); MD 2005 Washington

Gehringer, David Charles, Adjunct Assistant Professor, Orthodontics, 2009 (2009); BA 1989 Coe; DDS 1993 Iowa; MS 1995 Iowa

Gehrs, Karen M., Clinical Associate Professor, Ophthalmology Visual Science, 1996 (2002); BS 1983 Rhodes; MD 1987 Missouri

Geist, Lois J., Professor, Internal Medicine/Medicine Administration, 1990 (2009); BS 1978 Trinity; MS 1980 Case Western Reserve; MD 1984 Case Western Reserve

Gelfand, Miriam J., Emeritus Assistant Professor, Russian, 1962 (1966); BA 1946 St Johns-China

Gellhaus, Thomas M., Clinical Associate Professor, Obstetrics Gynecology, 1991 (2010); BA 1979 Augustana College, Sioux Falls; MD 1983 Oklahoma

Genadry, Rene, Clinical Professor, Urology/OBSTETRICS Gynecology, 2012 (2012);

Geneser, Matthew K., Clinical Assistant Professor, Pediatric Dentistry/Preventive Community Dentistry, 2009 (2009); BA 2002 Iowa; DDS 2006 Iowa

Geng, Maxwell Lei, Professor, Chemistry, 1995 (2008); BS 1986 Science and Technology-China; PHD 1994 Duke

Gent, Courtney Sue, Adjunct Instructor, Pharmacy Practice and Science, 2012 (2012);

Gentil-Archer, Anne Christine, Lecturer, Nursing, 2010 (2010); BSN 2002 Iowa

Georgakakos, K. P., Adjunct Professor, Civil-Environmental Engineering, 1986 (1997); BS 1977 National Technical-Athens; MS 1980 MIT; SCD 1982 MIT

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George, Michelle M., Adjunct Instructor, Pharmacy, 2003 (2003); BA 1997 Wartburg; PHARMD 2000 Creighton

George-Paulsen, Leslie Elise, Clinical Assistant Professor, Family Medicine, 2013 (2013);

Geraets, Douglas R., Clinical Assistant Professor, Pharmacy, 1988 (2004); PHARMD 1980 Tennessee

Gerhold, Linda Susan, Lecturer, Biology, 1988 (2003); PHD 1987 Iowa
Gerke, Alicia, Assistant Professor, Internal Medicine, 2008 (2012); BS 1998 South Florida, Tampa; MBA 2002 South Florida, Tampa; MD 2002 South Florida, Tampa

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Gerken, Kathryn C., Associate Professor, Psych Quant Foundations, 1973 (1978); BS 1962 Southern Illinois; MA 1967 Bradley; PhD 1974 Southern Illinois

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Germer, Megan Paige, Adjunct Assistant Professor, Pharmacy Practice and Science, 2013 (2013);

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Getz, Christine, Professor, Music, 1999 (2012); BM 1979 Evansville; MM 1982 Southern Illinois; PhD 1991 Texas

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Gilbert, Miriam, Emeritus Professor, English, 1969 (1982); BA 1965 Brandeis; MA 1967 Indiana; PhD 1969 Indiana

Gilbertson-White, Stephanie, Assistant Professor, Nursing, 2013 (2013);

Gilchrist, Matthew James, Lecturer, Rhetoric, 2006 (2011); BA 2001 Tennessee; MFA 2004 Iowa

Gilg, Joseph, Clinical Adjunct Instructor, Internal Medicine, 2005 (2005); BS 1983 Nebraska; MD 1987 Nebraska Med

Gillan, Edward G., Associate Professor, Chemistry, 1997 (2003); BS 1989 California-Berkeley; PhD 1994 California-Los Angeles

Gillum, Matthew P., Assistant Professor, Neurology, 2011 (2011); PhD 2010 Yale

Gilmore, Jennifer J., Adjunct Instructor, Social Work, 2013 (2013);

Gillotti, Jane A., Professor, Earth and Environmental Sciences, 1999 (2013); BA 1978 Maine; MA 1984 Johns Hopkins; PhD 1987 Johns Hopkins

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Gilster, Megan E., Assistant Professor, Social Work, 2013 (2012);

Gimer, David Arthur, Adjunct Assistant Professor, Family Dentistry, 2011 (2011); DDS 1976 Iowa

Gingrich, Roger D., Emeritus Professor, Internal Medicine, 1981 (1993); BA 1970 Macalaster; MD 1974 Cornell; PhD 1981 Oxford

Girdler, Carol Ellen, Clinical Instructor, Teaching and Learning, 1982 (2009); MA 1980 Iowa
Girotra, Saket, Assistant Professor, Internal Medicine, 2012 (2013);
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Gloer, James B., Professor, Chemistry, 1984 (1994); BS 1978 Florida; PhD 1983 Illinois
Glynn, Christopher Craig, Adjunct Instructor, Family Dentistry, 2011 (2011); DDS 2007 Iowa
Gmurek, Michael, Adjunct Instructor, Preventive Community Dentistry, 2008 (2008); BS 1977 Marquette; DDS 1981 Maryland
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Godwin, Robert F., Clinical Adjunct Associate Professor, Dermatology, 1976 (2004); MD 1966 Iowa
Goedken, Amber Marie, Assistant Professor, Pharmacy Practice and Science, 2012 (2012); PHARMD 2004 Iowa
Goedken, Julie Michele, Clinical Adjunct Assistant Professor, Emergency Medicine, 2012 (2012);
Goeken, James, Emeritus Professor, Pathology, 1976 (1990); AB 1967 Chicago; MD 1972 Missouri
Goeken, Nancy Smith, Emeritus Professor, Internal Medicine, 1983 (1993); BA 1968 Missouri; PhD 1972 Missouri
Goel, Apollina, Assistant Professor, Radiation Oncology/Pathology, 2008 (2008); BS 1987 Kanpur; MS 1992 Poona; PhD 1998 Microbial Technology
Goerbig, Jennifer, Clinical Assistant Professor, Internal Medicine, 2009 (2009); BS 1996 Michigan; MD 2002 Michigan
Goerdt, Christopher John, Clinical Professor, Internal Medicine, 1994 (2007); BA 1983 Iowa; MD 1988 Iowa; MPH 1994 Minnesota
Goettisch, Gordon Frederick, Adjunct Assistant Professor, Family Dentistry, 2007 (2012); DDS 1976 Iowa
Goetz, Devon D., Clinical Adjunct Associate Professor, Orthopaedics and Rehabilitation, 2000 (2000); MD 1987 Iowa
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Goff, Harold M., Emeritus Professor, Chemistry, 1976 (1985); BS 1969 Missouri; MA 1971 Missouri; PhD 1976 Texas
Gogel, Stephanie Ann, Adjunct Instructor, Communication Sciences and Disorders, 2012 (2012); AB 2002 University of Iowa; MA 2004 University of Iowa
Gogerty, Megan Ellen, Lecturer, Theatre Arts, 2008 (2008); BA 1997 Iowa; MFA 2004 Texas at Austin
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Goins, Kenneth M., Clinical Professor, Ophthalmology, Visual Science, 2003 (2006); BA 1982 Tennessee; MD 1986 Kentucky
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Golz, Sabine I., Associate Professor, German, 1987 (1994); MA 1984 Cornell; PhD 1987 Cornell
Gomez, Manuel, Clinical Associate Professor, Endodontics, 2000 (2000); DDS 1977 Javeriana University-Columbia; CER 2005 University of Iowa
Gonwa, Joan, Adjunct Assistant Professor, Division of Performing Arts/University College Courses/University College, 2008 (2014); BFA 1973 Wisconsin; MA 1984 Utah
Gonzales, Edward, Adjunct Instructor, Preventive Community Dentistry, 2012 (2012);
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Gonzalez Bosquet, Jesus, Assistant Professor, Obstetrics Gynecology, 2014 (2014);
Goodin, Julia C., Clinical Adjunct Associate Professor, Pathology, 1999 (1999); MD 1983 Kentucky

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Gordon, Colin, Professor, Public Policy Center/History, 1994 (2004); BA 1985 Alberta-Edmonton; MA 1986 York-Toronto; PhD 1990 Wisconsin-Madison

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Greenlee, Emily Chua, Adjunct Assistant Professor, Ophthalmology Visual Science, 2003 (2005); BA 1991 Notre Dame; MD 1993 Loyola

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Greiner, Mark A., Assistant Professor, Ophthalmology Visual Science, 2012 (2012);

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Greteman, Blaine, Assistant Professor, English, 2009 (2009); BA 1998 Oklahoma State; MPHIL 2001 Oxford; PHD 2008 California - Berkeley

Grewal, Amandeep, Associate Professor, Law-Faculty, 2011 (2011); BA 2002 Williams; JD 2005 Michigan; LLM 2006 Georgetown

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Hanley, Sarah, Emeritus Professor, Law-Faculty/International Programs/History, 1976 (1987); BA 1967 Pittsburgh; MA 1970 Iowa; PHD 1975 Iowa

Hanna, Eyad Michael, Clinical Associate Professor, Pediatrics, 2007 (2014); MD 2000 Washington

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Hansen, Brett, Adjunct Assistant Professor, Pharmacy Practice and Science, 2013 (2013);

Hansen, Calvin, Clinical Adjunct Assistant Professor, Neurology, 2007 (2007); MD 1988 Nebraska Medical

Hansen, David Christian, Adjunct Assistant Professor, Endodontics, 2007 (2007); BS 1982 Iowa; DDS 1986 Iowa; MS 1996 Minnesota

Hansen, Gary F., Emeritus Associate Professor, Teaching and Learning/Health, Sport Studies, 1962 (1969); BA 1957 Iowa; MA 1959 Iowa; PHD 1964 Iowa

Hansen, Marlan Rex, Professor, Neurosurgery/Otolaryngology-Head Neck Surgery, 2003 (2013); BS 1990 Brigham Young; MD 1994 Chicago, Pritzker

Hansen, Sarah Lux, Adjunct Lecturer, Educ Policy Leadership Studies, 2001 (2006); BA 1990 Iowa; MA 1992 Iowa

Hansing, Mark, Adjunct Lecturer, Law-Faculty, 2003 (2003); BA 1978 LUTHER COLLEGE, IOWA; JD 1981 IOWA

Hanson, Daniel Herbert, Adjunct Assistant Professor, Mechanical Engineering, 2005 (2005); BS 1979 Illinois; MS 1998 Iowa; PHD 2004 Iowa

Hanson, Diana O., Adjunct Instructor, Communication Sciences and Disorders, 2007 (2007); BS 1988 Iowa; MS 1990 Madison

Hanson, Douglas Lee, Clinical Adjunct Assistant Professor, Internal Medicine, 2005 (2005); MD 1997 Iowa

Hanson, James W., Emeritus Professor, Pediatrics/Epidemiology, 1976 (1984);

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Harding, Meaghan, Lecturer, English as Second Language, 2014 (2014);

Hardy-Fairbanks, Abbey Joy, Clinical Assistant Professor, Obstetrics Gynecology, 2010 (2010); BA 2002 Colorado; MD 2006 Creighton

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Hark, Mary Anita, Adjunct Assistant Professor, Interdisciplinary Programs, 2011 (2011); BA 1978 St Benedict; MA 1987 Iowa; MFA 1989 Chicago

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Harkness, Sarah Katherine, Assistant Professor, Sociology, 2011 (2011); MA 2005 Kent State; PHD 2011 Stanford

Harlan, Tracy Marie, Adjunct Instructor, Pharmacy Practice and Science, 2014 (2014);

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Harms, Beth Elaine, Adjunct Instructor, Social Work, 2007 (2007); BSW 1973 Northern Iowa; MSW 1997 Nebraska-Omaha

Harms, Dixie Lee, Clinical Adjunct Instructor, Nursing, 2010 (2010); BSN 1986 Drake; MSN 1993 Drake; DNP 2009 Iowa


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Harper, John Brammer, Emeritus Assistant Professor, English, 1976 (1982); BA 1962 Stanford; MBA 1966 Iowa

Harper, Matthew M., Assistant Professor, Ophthalmology, Visual Science, 2013 (2013);

Harrell, Susan, Clinical Adjunct Assistant Professor, Pediatrics, 1999 (1999); MD 1984 Texas
Harrington, Jeanette, Clinical Assistant Professor, Anesthesia, 1990 (1997); BS 1975 Minnesota-Duluth; MD 1983 Minnesota-Minneapolis

Harris, Ann, Adjunct Instructor, Preventive Community Dentistry, 2003 (2003); BS 1977 Iowa; DDS 1984 Iowa

Harris, Christopher J., Adjunct Lecturer, Finance, 2014 (2014);

Harris, Deborah J., Adjunct Assistant Professor, Psych Quant Foundations, 1987 (1987); BS 1977 Central Michigan; MA 1979 Central Michigan; PHD 1983 Wisconsin-Madison

Harris, James M., Adjunct Associate Professor, Family Dentistry, 2004 (2012); BS 1976 Iowa; DDS 1979 Iowa

Harris, Katherine Irene, Clinical Assistant Professor, Internal Medicine, 2010 (2010); MD 2007 Iowa

Harris, Kimm Marie, Adjunct Lecturer, Management Organizations, 2012 (2012);

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Hart, Jeffrey Roy, Lecturer, Finance, 2011 (2011); BBA 1988 Iowa; MBA 1992 Loyola; PHD 1999 Texas @ Arlington


Hartley, Patrick Gerard, Clinical Assistant Professor, Obstetrics Gynecology, 2009 (2009); AA 1973 Grand View; BA 1975 Drake; DO 1978 Des Moines

Hart, Timothy T., Clinical Adjunct Assistant Professor, Internal Medicine, 2000 (2000); MD 1981 Iowa

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Haugen, Thomas H., Associate Professor, Pathology, 1990 (1997); BA 1971 California-Berkeley; PHD 1976 California-Davis; MD 1983 Iowa

Haugland, Frank N., Clinical Adjunct Assistant Professor, Internal Medicine, 2001 (2001); BS 1980 Iowa; MD 1987 Iowa; PhD 1987 Iowa
Haupter, Christopher L., Clinical Adjunct Assistant Professor, Ophthalmology Visual Science, 2005 (2005); BA 1989 Luther College; MD 1994 Iowa
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Havel, Jessica Kay, Adjunct Assistant Professor, Pharmacy Practice and Science, 2003 (2003); PHARMD 2000 Iowa
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Hawkins, Benny F., Emeritus Associate Professor, Periodontics, 1978 (1978); BS 1952 Morehouse; DDS 1958 Meharry; MS 1972 Iowa
Hawley, Clifford B., Adjunct Professor, Economics, 2009 (2009); PhD 1977 Duke
Hawley, Ellis W., Emeritus Professor, History, 1969 (1969);
Hawtrey, Charles E., Emeritus Professor, Urology, 1969 (1977); BA 1957 Grinnell; MD 1961 Iowa
Hayakawa, Minako, Clinical Assistant Professor, Radiology/Neurology, 2003 (2003); MD 1990 St MARIANNA, JAPAN
Hayek, Mary Katherine Pilcher, Adjunct Lecturer, Law-Faculty, 2015 (2015);
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Hayes, Joy, Associate Professor, Communication Studies/Division of Interdisciplinary Program, 1994 (2000); BA 1987 Reed; MA 1988 California-San Diego; PHD 1994 California-San Diego
Hazeltine, Richard Eliot, Associate Professor, Psychology, 2003 (2009); BA 1990 Harvard; PHD 1997 California
Hazelton, Lisa M., Clinical Adjunct Assistant Professor, Internal Medicine, 2000 (2000); MD 1987 Louisville Medical
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Heckart, Kim, Adjunct Lecturer, Teaching and Learning, 2015 (2010); BS 1990 NE Missouri State; MA 2004 Viterbo University
Heckel, Philip H., Emeritus Professor, Earth and Environmental Sciences, 1971 (1978); BA 1960 Amherst; PHD 1966 RICE
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Heddinger, Steven P., Clinical Adjunct Assistant Professor, Internal Medicine, 2004 (2004); BS 1991 Notre Dame; MD 1995 Iowa
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Hegeman, Rebecca Lea, Clinical Associate Professor, Internal Medicine, 1993 (1999); BSN 1977 Iowa; MD 1986 Iowa
Hegeman, Robert James, Clinical Associate Professor, Internal Medicine, 2010 (2010); MD 1977 Michigan
Heggen, Judith, Clinical Adjunct Assistant Professor, Pediatrics, 2002 (2002); AA 1981 DES MOINES AREA COMMUNITY; BS 1991 DRAKE; DO 1996 OSTEOPATHIC-DES MOINES
Hegmann, Theresa Elaine, Clinical Professor, Physician Assistant, 2001 (2012); BS 1987 Iowa; BS 1991 Iowa; MPAS 1999 Nebraska
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Heiar, Kurt Francis, Lecturer, Management Organizations, 2013 (2013);
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Heidger, Paul M., Emeritus Professor, Anatomy Cell Biology, 1974 (1979); BA 1963 Northern Colorado; PHD 1967 Tulane
Hein, Herman A., Emeritus Professor, Epidemiology/Pediatrics, 1973 (1981); BA 1959 Wartburg; MD 1963 Iowa
Heineman, Elizabeth Dian, Professor, International Programs/Gender, Women's and Sexuality Studies/History, 1999 (2013); BA 1985 Oberlin; MA 1988 North Carolina; PHD 1993 North Carolina
Heiner, Anneliese D., Emeritus Professor, Anatomy Cell Biology, 1974 (1979); BA 1963 Northern Colorado; PHD 1967 Tulane
Heintz, Brett, Clinical Associate Professor, Pharmacy Practice and Science, 2012 (2012);
Heintz, James A., Adjunct Professor, Accounting, 2010 (2010); DBA 1972 Washington@ St. Louis
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Herman, Ruth Esther, Adjunct Assistant Professor, Nursing, 2013 (2013);

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Hermanson, Nellie, Adjunct Lecturer, University College, 2010 (2010); MS 2007 Old Dominion

Hernan, Jillian Marie, Adjunct Assistant Professor, Pharmacy Practice and Science, 2010 (2010); PHARMD 2006 Iowa

Hernandez Luna, Maria Marcela, Clinical Associate Professor, Family Dentistry, 2003 (2012); DIP 1983 Gimnasio Femenino; DDS 1988 Javeriana; MS 2001 Iowa

Hero, Michael William, Lecturer, Mathematics, 2013 (2013);


Herr, Keela, Professor, Nursing, 1987 (2001); BSN 1976 Northeast Missouri; MSN 1977 Texas-Austin; PhD 1986 Texas-Austin

Herrera, Jeremy, Adjunct Instructor, Division of Performing Arts, 2012 (2012);

Hershberger, Larry, Lecturer, Finance, 2003 (2003); BBA 1966 Iowa

Herwaldt, Loreen A., Professor, Epidemiology/Internal Medicine, 1987 (2002); BA 1973 Grinnell; MD 1977 Wisconsin

Herwig, Steven R., Clinical Adjunct Assistant Professor, Otolaryngology-Head Neck Surgery, 1997 (1997); DO 1976 Des Moines Osteopathic

Hefstedt, Richard R., Adjunct Assistant Professor, Family Dentistry, 2009 (2009); BA 1971 Augusta; BS 1973 Illinois; DDS 1975 Illinois

Hesler, Sean, Adjunct Lecturer, University College Courses, 2014 (2004); AA 1991 Southeastern Community; BS 1993 Western Illinois; MS 1996 Central Missouri State

Hethcote, Herbert W., Emeritus Professor, Mathematics, 1969 (1979); BS 1964 Colorado; MA 1965 Michigan; PhD 1968 Michigan

Hetrick, Amy Sue, Adjunct Assistant Professor, Pharmacy, 2005 (2005); PHARMD 2001 Iowa

Hettmansperger, Sue E., Professor, Art Art History, 1977 (1994); BFA 1972 New Mexico; MFA 1974 New Mexico

Hettrich, Carolyn M., Assistant Professor, Orthopaedics and Rehabilitation, 2011 (2011); MD 2004 Washington; MPH 2008 Columbia
Heynen, James, Adjunct Associate Professor, University College, 2010 (2010); BED 1961 Calvin College; MA 1965 Iowa; MFA 1972 Oregon


Hickey, Shauna, Adjunct Assistant Professor, Pharmacy Practice and Science, 2010 (2010); PHARMD 2006 Drake

Hicklin, Gregory A., Clinical Adjunct Associate Professor, Internal Medicine, 1986 (2001); MD 1976 Iowa

High, Andrew Charles, Assistant Professor, Communication Studies, 2012 (2012);

High, Mary Kathryn, Lecturer, Communication Studies, 2012 (2012);

Highland, Patrick J., Adjunct Lecturer, Management Organizations, 2004 (2004); MS 1980 Illinois State; MS 1986 Illinois State; PhD 1993 Iowa

Hiland, Kirk Sweitzer, Adjunct Lecturer, Management Organizations, 2006 (2006); BBA 1976 Iowa

Hilger, Shilo, Adjunct Instructor, Preventive Community Dentistry, 2011 (2011); BS 1997 Nebraska; DDS 2003 Nebraska

Hilgerson, Alan Dean, Clinical Adjunct Assistant Professor, Internal Medicine, 2007 (2007); BA 1994 Iowa; DO 1998 Osteopathic Med DM, IA

Hill, Candis Lashel, Lecturer, Rehabilitation and Counselor Education, 2010 (2010); BA 2004 Georgia Southern; MA 2006 South Carolina State

Hill, Elizabeth Ann, Adjunct Assistant Professor, Teaching and Learning, 1995 (1995); PHD 1990 Iowa

Hill, Judith, Adjunct Instructor, Preventive Community Dentistry, 2005 (2005); DDS 1981 Washington

Hill, Lena Michelle, Associate Professor, African-American Studies/English, 2006 (2013); AB 1997 Howard; BA 1997 Howard; PhD 2005 Yale

Hill, Matthew Larry, Clinical Adjunct Assistant Professor, Internal Medicine, 2008 (2008); BA 1994 Northern Iowa; DO 2000 Des Moines, IA

Hill, Matthew E., Associate Professor, Anthropology, 2007 (2014); BA 1990 Boston; MA 1994 Kansas; PHD 2007 Arizona

Hill, Michael, Associate Professor, African-American Studies/English, 2006 (2013); BA 1993 Howard; MA 1995 Harvard; PhD 2004 Harvard

Hill, Ryan William, Clinical Assistant Professor, Hospital Dentistry, 2012 (2012); HS 2003 Iowa City High

Hill, Tracy Ann, Adjunct Instructor, Preventive Community Dentistry, 2000 (2000); BS 1983 Iowa

Hillis, Stephen Lawrence, Professor, Radiology/ Biostatistics, 1995 (2010); BA 1972 Iowa; MFA 1978 Iowa; MS 1982 Iowa; PhD 1987 Iowa

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Hinde, Timothy Robert, Adjunct Assistant Professor, Family Dentistry, 2006 (2006); DDS 1976 Illinois

Hindelang, Thomas Joseph, Adjunct Professor, Finance, 2011 (2011); PHD 1973 Indiana

Hindes, Charles A., Emeritus Professor, Art Art History, 1973 (1985); BFA 1966 Illinois; MFA 1968 Rhode Island School of Design

Hindman, Bradley J., Professor, Anesthesia, 1988 (2002); BA 1978 Oregon; MD 1982 Oregon Health Sciences

Hines, John David, Clinical Adjunct Assistant Professor, Internal Medicine, 2006 (2006); BA 1980 Simpson; DO 1989 Des Moines

Hines, N. William, Emeritus Professor, Law-Faculty, 1962 (1967); AB 1958 Baker; LLB 1961 Kansas

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Hirsch-Giller, Barbara, Adjunct Instructor, Social Work, 2003 (2003); BA 1998 Simpson; MSW 2001 Iowa

Hitchen, Patrick, Professor, Neurosurgery/Biomedical Engineering, 1980 (1989); BS 1969 American University of Beirut; MD 1974 American University of Beirut

Hitlin, Steven, Associate Professor, Sociology, 2005 (2011); BA 1996 William and Mary; MA 1999 Wisconsin; PHD 2003 Wisconsin

Ho, Beng Choon, Professor, Psychiatry, 1999 (2014); MD 1989 Singapore


Hobbs, Ryan Alan, Adjunct Associate Professor, Pharmacy, 1997 (2010); BS 1990 Iowa; BPharm 1990 Iowa

Hochreiter, Wendy Jean, Adjunct Lecturer, Nursing, 2015 (2015); MSN 2010 University of Iowa

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Hockenberry, Jason, Adjunct Assistant Professor, Health Management Policy, 2008 (2008); BS 2002 Kutztown; PHD 2008 Lehigh

Hodgson-Zingman, Denice, Associate Professor, Biomedical Engineering/Internal Medicine, 2006 (2013); BSE 1989 Johns Hopkins; MSE 1992 Johns Hopkins; MD 1996 Johns Hopkins

Hoehele, Zanetta Jane, Adjunct Instructor, Radiology, 2013 (2013); BS 1982 University of Iowa; MA 1997 University of Iowa

Hoehns, James Dewey, Clinical Associate Professor, Pharmacy, 1995 (2004); BPharm 1992 Iowa; PHARMD 1994 Iowa

Hoenicke-Moore, Michaela, Associate Professor, History/ International Programs, 2007 (2011); MA 1989 N. Carolina, Chapel Hill; PHD 1998 N. Carolina, Chapel Hill

Hoentig, Kelly Christine, Adjunct Associate Professor, Pharmacy, 2005 (2014); PHARMD 2003 Iowa

Hoepner, Todd Roger, Adjunct Assistant Professor, Pediatric Dentistry, 2001 (2001); DDS 1999 Iowa
Hoffman, Eric Alfred, Professor, Internal Medicine/Biomedical Engineering/Radiology, 1992 (1996); BA 1974 Antioch; PhD 1981 Minnesota


Hoffman, Valerie Forman, Adjunct Assistant Professor, Epidemiology, 2004 (2004); BA 1996 Lehigh; MPH 1999 Yale; PhD 2002 John Hopkins

Hoffmann, Darren Samuel, Lecturer, Anatomy Cell Biology/Oral Pathology/Radiology/Pharmacy, 2006 (2006); BA 2000 Concordia; PhD 2006 Iowa

Hoffmann, Jeffrey J., Clinical Adjunct Assistant Professor, Family Medicine, 1994 (2002); BS 1976 Loras; DO 1984 Osteopathic Medicine-Des Moines

Hoffmann, Louis G., Emeritus Professor, Microbiology, 1964 (1973); BA 1953 Wesleyan; MS 1958 Johns Hopkins; SCD 1960 Johns Hopkins

Hofmeyer, Brooke Anne Steed, Adjunct Instructor, Pharmacy Practice and Science, 2014 (2014)

Hogan, Michael Joseph, Emeritus Professor, History, 2004 (2004); BA 1965 Northern Iowa; MA 1967 Iowa; PhD 1974 Iowa

Hoganson, Deana D., Clinical Adjunct Assistant Professor, Internal Medicine, 2012 (2012)

Hogg, Robert V., Emeritus Professor, Statistics Actuarial Science, 1948 (1962); BA 1947 Illinois; MS 1948 Iowa; PhD 1950 Iowa

Hohl, Raymond J., Emeritus Professor, Internal Medicine, 1991 (2000); BS 1978 Illinois; MD 1984 Rush

Holanda, Danniele Gomes, Clinical Assistant Professor, Pathology, 2013 (2013)

Holbrook, Mark Andrew, Lecturer, Biology/Social Work, 1999 (2002); PhD 1998 Iowa

Holland, Randy J., Adjunct Lecturer, Law-Faculty, 2006 (2006); BA 1989 Swarthmore; JD 1972 Pennsylvania Law; LLM 1998 Virginia Law


Hollingworth, Liz, Associate Professor, Educ Policy Leadership Studies, 2006 (2012); BA 1992 UCLA; MS 1994 Northwestern; PhD 2005 Iowa

Hollins, George M., Lecturer, Management Sciences, 2010 (2010); BS 1981 Iowa State; BS 1987 Upper Iowa; MA 2007 St Ambrose

Holloway, Julie Ann, Professor, Prosthodontics, 2011 (2011); DDS 1990 Ohio State; MS 1993 Ohio State

Holly Jr., Forrest M., Emeritus Professor, Civil-Environmental Engineering, 1982 (1990); BS 1968 Stanford; MS 1969 Washington; PhD 1975 Colorado State

Holm, Adrian Nathan, Clinical Assistant Professor, Internal Medicine, 2010 (2010); BA 1997 Luther; MD 2004 Des Moines

Holm, Eric J., Clinical Adjunct Assistant Professor, Internal Medicine, 2007 (2007); BA 1999 Central College; MD 2003 Iowa

Holm, Lloyd David, Clinical Adjunct Associate Professor, Obstetrics Gynecology, 2009 (2011); BA 1975 Olivet, MI; DO 1980 Midwestern, Downers Grove

Holm, Carol Joy, Clinical Associate Professor, Pathology, 2011 (2011); BS 1990 Valparaiso; PhD 1999 Illinois; MD 1999 Illinois

Holmes, David Charles, Professor, Family Dentistry, 2004 (2010); BS 1973 Iowa; DDS 1978 Iowa; MS 1991 Iowa

Holmes, Donald C., Adjunct Lecturer, Law-Faculty, 2009 (2009); BA 1965 Maryland; JD 1968 George Washington

Holmes, Jeffrey Scott, Adjunct Instructor, University College Courses, 2014 (2014)

Holstein, Ellen Susanne, Adjunct Instructor, Religion, 2011 (2011); BA 1982 Concordia, MN; MDIV 1987 Wartburg Theological; MA 1998 Iowa

Holstein, Jay A., Professor, Religion, 1970 (1982); BA 1960 Temple; MA 1966 Hebrew Union; PhD 1970 Hebrew Union

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Holton, Nathan Eugene, Assistant Professor, Orthodontics, 2010 (2010); MA 2002 Northern Illinois; PhD 2009 Iowa

Hoitsmark, Erline Bent, Emeritus Professor, Classics, 1963 (1982); BA 1959 California-Berkeley; PhD 1963 California-Berkeley

Honemos, Musab Sultan, Clinical Assistant Professor, Internal Medicine, 2012 (2014)

Honeycutt, Karen, Clinical Adjunct Assistant Professor, Pathology, 2013 (2013)

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Hong, Hyeri, Lecturer, Teaching and Learning, 2014 (2014); AB 1999 Korea University

Hong, Liu, Associate Professor, Dows Institute-Research, 2009 (2009); MD 1990 Shanghai Second Medical; MS 1993 Shanghai Second Medical; PhD 2000 Toyota

Hong, Sandy D., Clinical Associate Professor, Pediatrics, 2007 (2013); MD 2001 California

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Hood, Margie, Adjunct Lecturer, Teaching and Learning, 2015 (2005); BS 1972 IOWA

Hooker, Jacob, Adjunct Assistant Professor, Creative Writing, 2014 (2014)

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Hooks, Adam G., Assistant Professor, English, 2009 (2009); MA 2003 Georgetown; MPHIL 2006 Columbia, New York City; PhD 2009 Columbia, New York City

Hooper, Catalina J., Adjunct Assistant Professor, Psychology, 2010 (2010); PhD 2008 Minnesota
Hoopes, Thomas A., Adjunct Assistant Professor, Pharmacy Practice and Science, 2014 (2014);
Hoover, Hiram D., Emeritus Professor, Iowa Testing Programs, 1967 (1980); BS 1962 Missouri; MA 1964 Iowa; PHD 1969 Iowa
Horner, Kathleen Elizabeth, Clinical Assistant Professor, Pharmacy, 2005 (2007); BS 1999 Saint Louis; PHARMD 2004 Iowa
Hornick, Douglas B., Clinical Professor, Internal Medicine, 1988 (2002); BS 1978 St. Lawrence; MD 1982 Maryland
Horning, Kristin, Adjunct Assistant Professor, Pharmacy Practice and Science/Pharmacy, 2014 (2006); PHARMD 2005 South Dakota State
Horowitz, Steven Paul, Adjunct Assistant Professor, American Studies, 1995 (1995); PHD 1986 Iowa
Horswill, Alexander R., Associate Professor, Microbiology, 2005 (2010); BS 1995 Wisconsin-Madison; PHD 2001 Wisconsin-Madison
Horswill, Michelle Costello, Adjunct Instructor, Health and Human Physiology, 2013 (2013);
Horton, Diana G., Emeritus Associate Professor, Biology, 1983 (1989); BED 1972 Alberta-Canada; PHD 1981 Alberta-Canada
Horton, Douglas James, Adjunct Associate Professor, Family Dentistry, 1997 (2012); DDS 1976 Iowa
Horton, Matthew Randy, Adjunct Assistant Professor, Pharmacy Practice and Science, 2011 (2011); PHARMD 2002 Iowa
Horwitz, Henry G., Emeritus Professor, History, 1963 (1970); BA 1959 Haveford; PHD 1963 Oxford
Horwitz, Phillip Andrew, Clinical Professor, Internal Medicine, 2003 (2014); BA 1989 Colorado; MD 1995 Washington
Hoshi, Hisakazu, Clinical Associate Professor, Surgery, 2007 (2011); MD 1991 Shiga Univ. of Med Science
Hoskins, Brenda Lee Carter, Clinical Associate Professor, Surgery, 2005 (2010); BSN 1994 Coe College; MSN 1998 Iowa; DNP 2006 Rush University
Hostetter, Jesse Michael, Adjunct Associate Professor, Epidemiology, 2007 (2010); DVM 1991 Iowa State; PHD 2000 Iowa State
Hoth, Karin, Assistant Professor, Psychiatry, 2013 (2013);
Hoth, Peter L., Clinical Assistant Professor, Family Medicine, 2013 (2013);
Hogue, Todd, Lecturer, Finance, 1998 (2009); BA 1992 Wartburg; MBA 1994 Iowa; PHD 1998 Iowa
Hourcade, Juan Pablo, Associate Professor, Computer Science/Nursing, 2006 (2012); BS 1996 American University; MS 2000 Maryland; PHD 2003 Maryland
House, Hans Robert, Clinical Professor, Emergency Medicine, 2002 (2012); MD 1997 Southern California
Housel, Audrey Kae, Adjunct Instructor, Pharmacy Practice and Science, 2008 (2014); PHARMD 2008 Creighton
Houser, Kara Marie, Adjunct Instructor, Social Work, 2012 (2012);
Houston, Douglas W., Associate Professor, Biology, 2004 (2010); BS 1992 Florida Inst. of Tech; PHD 1999 Miami School of Med
Houtman, Jon C., Associate Professor, Internal Medicine/Microbiology, 2005 (2011); BA 1994 Minnesota; PHD 1999 Wisconsin
Hove, Harlo Dennis, Emeritus Assistant Professor, Emergency Medicine, 1990 (1995); BS 1970 Iowa State; BS 1972 South Dakota; MD 1974 Nebraska
Hovenkamp, Herbert, Professor, Law-Faculty, 1986 (1986); MA 1971 Texas; PHD 1976 Texas; JD 1978 Texas
Howard, Matthew A., Professor, Otolaryngology-Head Neck Surgery/Neurosurgery/Neurology, 1993 (2002); BS 1981 Tufts; MD 1985 Virginia
Howarth, Allison Marie, Adjunct Instructor, University College Courses, 2013 (2013);
Howe, Brian James, Adjunct Assistant Professor, Family Dentistry, 2014 (2014); DMD 2006 Tufts University
Howe, James Robinson V., Professor, Surgery, 1996 (2005); AB 1982 Dartmouth; MD 1987 Vermont
Howell, James Perry, Lecturer, Rhetoric, 2004 (2013); BA 1979 Swarthmore College; PSYD 1987 VA Consortium for Prof. Psych.
Howell, Nicholas Mark, Adjunct Assistant Professor, Pharmacy, 2007 (2007); PHARMD 2006 Iowa
Howes, Gregory Gershom, Associate Professor, Physics Astronomy, 2008 (2013); BS 1994 CalTech; MS 1998 UCLA; PHD 2004 UCLA
Howren, Matthew Bryant, Adjunct Assistant Professor, Psychology, 2009 (2009); BA 2003 South Alabama; MA 2007 Iowa; PHD 2009 Iowa
Hoxie, Logan Davies, Clinical Adjunct Assistant Professor, Urology, 1999 (1999); MD 1992 Iowa
Hoy, Ariel Kathryn, Adjunct Assistant Professor, Pharmacy Practice and Science, 2014 (2014);
Hoyt, Robert Hughes, Clinical Adjunct Assistant Professor, Internal Medicine, 2008 (2008); MD 1983 Iowa
Hribar, Steven Paul, Professor, Accounting, 2006 (2012); PHD 2000 Iowa
Hu, Hung-Shu, Emeritus Professor, Art Art History, 1968 (1982); BSC 1959 Cheng-Kung-Taiwan; MFA 1966 Cranbrook Academy of Art
Hua, Youjia, Associate Professor, Teaching and Learning, 2008 (2014); BA 1999 Shanghai; MS 2002 Mercyhurst; PHD 2008 Penn State

Huang, Jian, Professor, Biostatistics/Statistics Actuarial Science, 1994 (2000); BS 1985 Wuhan University; MS 1987 Wuhan University; PHD 1994 Washington

Huang, Yung-Shen, Clinical Assistant Professor, Prosthodontics, 2003 (2003); DDS 1992 Taipei Taiwan; MS 2003 Iowa

Hubel, Kenneth A., Emeritus Professor, Internal Medicine, 1962 (1973);

Huber, Diane Lyzotte, Professor, Health Management Policy/Nursing/IA Consortium Substance Abuse, 1982 (2003); BSN 1975 Iowa; MA 1982 Iowa; PHD 1986 Iowa

Huber, Lawrence, Emeritus Assistant Professor, Prosthodontics, 1971 (1981); DDS 1960 Creighton

Huckleberry, Alan, Associate Professor, Music, 2003 (2010); BM 1991 Hochschule fur Musik Germany; MM 1994 Hochschule fur Music Germany; DMA 2003 Univ of Michigan Ann Arbor

Huddie, Sally Mae, Adjunct Assistant Professor, Teaching and Learning, 2014 (2014);

Hughes, Emily Ann, Professor, Law-Faculty, 2002 (2011); AB 1990 Michigan; MD 1997 Michigan; JD 1997 Michigan Law

Hugie, Courtney, Adjunct Instructor, Pharmacy Practice and Science, 2013 (2013);

Hugunin, Rhonda McInroy, Adjunct Instructor, Family Medicine, 2014 (2014);

Hultetelin, David Paul, Adjunct Assistant Professor, Pharmacy Practice and Science, 2014 (2014);

Humbert, Jo Lene Watkins, Adjunct Instructor, Preventive Community Dentistry, 2012 (2012); AS 2011 Kirkwood Community College

Humbert, Lewis Arthur, Clinical Professor, Periodontics, 2004 (2004); BA 1971 Drake; DDS 1975 Iowa; MS 1986 Texas Health Science Center

Hungerford, Frances, Adjunct Instructor, Theatre Arts/Dance, 2010 (2010); HS 1996 Walnut hill School; BA 2001 South Carolina

Hunnicutt, Benjamin K., Professor, Health and Human Physiology, 1975 (1989); BA 1967 North Carolina; MA 1972 North Carolina; PHD 1975 North Carolina

Hunter, Eric James, Adjunct Lecturer, Communication Sciences and Disorders, 2010 (2010); BS 1995 Brigham Young; MS 1997 Brigham Young; PHD 2001 Iowa

Hunter, Stephen Kieth, Professor, Biomedical Engineering/Obstetrics Gynecology, 1996 (2010); BS 1982 Utah; PHD 1987 Utah; MD 1989 Utah


Huntley, John F., Emeritus Professor, English, 1957 (1973);

Huntrods, Clint Simpson, Lecturer, Health and Human Physiology, 2014 (2014); BA 2007 Univ. of Iowa; MA 2009 Univ of Iowa


Huss, Charles D., Clinical Adjunct Assistant Professor, Emergency Medicine/Family Medicine, 1982 (1982); MD 1976 Iowa

Hussain, Muhammad Azam, Clinical Assistant Professor, Internal Medicine, 2012 (2014);

Huston, Kelly, Adjunct Assistant Professor, Operative Dentistry, 2012 (2012);

Huttner, Sidney F., Adjunct Instructor, Library Information Science, 2007 (2007); AB 1963 Chicago; MPHIL 1969 Chicago

Huynh, Tony, Adjunct Instructor, Pharmacy Practice and Science, 2013 (2013);

Hwang, Joseph K., Clinical Adjunct Assistant Professor, Obstetrics Gynecology, 2009 (2009); BS 1988 Loyola; MD 1992 Stritch School Med

Hyer, Daniel E., Clinical Assistant Professor, Radiation Oncology, 2012 (2012);

Hyndman, Margaret Mary, Lecturer, Nursing, 2006 (2011); BSN 2002 Mount Mercy; MSN 2005 Clarke College

Ianzini, Fiorenza, Adjunct Associate Professor, Biomedical Engineering, 2001 (2001); BS 1976 Giovan Battista Morgagni; PHD 1980 University of Rome La Sapienza

Iben, Pollyanne, Adjunct Assistant Professor, Pediatric Dentistry, 2000 (2000); BA 1984 Iowa; DDS 1997 Iowa

Ibsen, Merete, Clinical Assistant Professor, Anesthesiology, 2002 (2002); MD 1987 Copenhagen

Icardi, Michael S., Clinical Associate Professor, Pathology, 2001 (2011); BS 1990 Miami; MD 1995 Miami

Iglehart, David Ralph, Adjunct Assistant Professor, Family Dentistry, 2014 (2014);

Ihrig, Timothy G., Clinical Adjunct Assistant Professor, Internal Medicine, 2012 (2012);

Ijdo, Jacob W., Clinical Adjunct Assistant Professor, Internal Medicine, 2000 (2010); MD 1989 Leiden; PHD 1999 Heidelberg

Ilgenfritz, Ryan Matthew, Clinical Assistant Professor, Orthopaedics and Rehabilitation, 2011 (2011); MD 2005 Miami School of Medicine; BS 2005 Miami

Im, Kyoung Bin, Clinical Assistant Professor, Psychiatry/Neurology, 2010 (2012); MD 1995 Seoul, Korea

Imborek, Katherine Lea, Clinical Assistant Professor, Family Medicine, 2011 (2011); BA 2002 DePauw; MD 2008 Iowa

Imhof, Sara Lynn Baker, Adjunct Assistant Professor, Health Management Policy, 2000 (2008); BS 1993 Iowa; MA 1998 Iowa; PHD 2006 Iowa

Ince, Dilek, Clinical Assistant Professor, Internal Medicine, 2009 (2012); MD 1993 Istanbul Medical School

Ince, Mirac Nedim, Assistant Professor, Internal Medicine, 2007 (2008); MD 1993 Istanbul
Ingram, Marlynne Beth, Emeritus Professor, Economics, 1988 (2001); BS 1981 Iowa; PHD 1986 Minnesota

Ingram, Patrick Edward, Adjunct Lecturer, Law-Faculty, 2008 (2008); BA 1981 Iowa; JD 1992 Iowa

Ingram, Todd Newell, Clinical Assistant Professor, Nursing, 1995 (2002); BA 1974 Iowa; BSN 1980 Iowa; MA 1994 Iowa

Inman, Lorinda K., Adjunct Assistant Professor, Nursing, 1989 (1989); MSN 1976 Loyola-Chicago

Iovanov, Miodrag C., Assistant Professor, Mathematics, 2012 (2012);

Iqbal, Adnan, Clinical Adjunct Assistant Professor, Psychiatry, 2010 (2010); MBBS 1990 Nishtar Medical College

Irani, Kaikobad, Professor, Radiation Oncology/Internal Medicine, 2013 (2013);

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Irish, Michael S., Clinical Adjunct Associate Professor, Surgery, 2002 (2004); BS 1986 Tulane; MD 1990 Kansas

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Isham, Susan C., Lecturer, English as Second Language, 1980 (2010); BA 1971 Illinois; MA 1972 Iowa

Ituk, Unyime, Clinical Assistant Professor, Anesthesiology, 2011 (2013); MBBS 1998 Med, Uni of Ibadan

Ivanovic, Marina, Clinical Associate Professor, Pathology, 2010 (2010); MD 1992 Zagreb

Iverson, Jennifer Joy, Assistant Professor, Music, 2009 (2009); MM 2003 Northern Iowa; PHD 2009 Texas

Iverson, William L., Clinical Professor, Internal Medicine, 2002 (2014); BA 1990 Iowa; MD 1995 Iowa

Izakovic, Martin, Clinical Adjunct Associate Professor, Internal Medicine, 2005 (2008); MD 1995 Comeniu, Slovakia

Jabbari, Gholam H., Clinical Adjunct Instructor, Obstetrics Gynecology, 1982 (1982); MD 1975 Pahlavi Univ-Iran

Jackman, Bryce A., Adjunct Instructor, Pharmacy, 1997 (1997); MS 1992 Kansas

Jackson, Amy Lynn, Adjunct Assistant Professor, Pharmacy, 2000 (2000); PHARMD 1999 Drake

Jackson, Donald F., Emeritus Associate Professor, Classics, 1967 (1973); BA 1962 Niagara; MA 1964 Indiana; PHD 1967 Indiana

Jackson, Frances M., Clinical Adjunct Associate Professor, Pediatrics, 2002 (2009); BS 1982 ILLINOIS; MS 1983 ILLINOIS; MD 1987 ILLINOIS


Jackson, Robert A., Emeritus Associate Professor, Social Work, 1975 (2001); BA 1963 St. Ambrose; MA 1967 Aquina Inst of Theology; MSW 1974 Iowa

Jacob, Mathews, Assistant Professor, Electrical-Computer Engineering/Radiation Oncology/Biomedical Engineering, 2011 (2011); MS 1993 Ind Inst, Bangalore; PHD 2003 Swiss Fed Inst of Tech

Jacob, Susan Marie, Clinical Adjunct Assistant Professor, Internal Medicine, 2008 (2008); BS 1982 Iowa State; MD 1986 Iowa

Jacobsen, Cheryl Denise, Adjunct Assistant Professor, Interdisciplinary Programs, 1998 (2000); BS 1984 Iowa State University

Jacobsen, Ryan B., Clinical Assistant Professor, Pharmacy, 2005 (2005); BA 1998 Dana College; PHARMD 2002 Creighton

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Jacobson, Wayne, Adjunct Assistant Professor, Policy Leadership Studies, 2011 (2011); MA 1986 Minnesota; MS 1993 Wisconsin; PHD 1997 Wisconsin


Jager, Linda, Clinical Adjunct Assistant Professor, Family Medicine, 2014 (2014);

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Jakobsen, James F., Emeritus Associate Professor, Mathematics, 1959 (1964); BS 1950 SW Missouri State; MA 1952 Missouri; PHD 1959 Missouri

James, Cory Lathuriel, Lecturer, Rehabilitation and Counselor Education, 2012 (2012); MA 2006 Langston University, Ok. City

James, Johnnie Eugene, Adjunct Instructor, Health and Human Physiology, 2012 (2012); BS 2001 The University of Iowa; MS 2004 The University of Iowa

James, Paul Arthur, Professor, Family Medicine/Occupational Environmental Health, 2001 (2005); BA 1980 North Carolina; MD 1984 North Carolina

James, Samuel Wooster, Adjunct Associate Professor, Chemistry/Biology, 2011 (2011); PHD 1983 Michigan

Jamrock, Diane I., Adjunct Instructor, Preventive Medicine, 2000 (2000); BS 1984 Hawkeye Community

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Jansen, Kate Logan, Clinical Assistant Professor, Family Medicine, 2012 (2012);

Janssen, Brandi, Clinical Assistant Professor, Occupational Environmental Health, 2014 (2014); BA 1998 Grinnell College; MA 2009 University of Iowa

Janz, Kathleen F., Professor, Epidemiology/Health and Human Physiology, 1982 (2004); BS 1978 Wisconsin-Stevens Point; MA 1982 Northern Colorado; EDD 1990 Northern Colorado
Janz, Siegfried, Professor, Pathology, 2007 (2007); MD 1985 Leipzig, Germany; DSC 1995 Leipzig, Germany
Japsen, Bruce R., Adjunct Instructor, Journalism Mass Communication, 2013 (2013);
Jarosinski, Keith W., Assistant Professor, Microbiology, 2011 (2011); BS 1995 Rochester Institute of Tech; PHD 1999 SUNY-Health Science
Jarvey, John A., Adjunct Lecturer, Law-Faculty, 1997 (2005); BS 1978 Akron; JD 1981 Drake University
Jarzynka-Papineau, Julie A., Adjunct Assistant Professor, Pharmacy Practice and Science, 2013 (2013);
Jawahar Hussaini, Syed Mubeen, Assistant Professor, Chemical Biochemical Engineering, 2014 (2014);
Jean, Wenny, Clinical Adjunct Assistant Professor, Family Medicine, 2007 (2007); BA 2000 Missouri - Kansas City; MD 2000 Missouri - Kansas City; MPH 2004 Iowa
Jebson, Peter, Emeritus Professor, Anesthesia, 1980 (1980); MBCHB 1963 St Andrews
Jenkins, Angela Danielle, Adjunct Instructor, Communication Sciences and Disorders, 2012 (2012);
Jennings, Ashley L., Lecturer, English as Second Language, 2014 (2014);
Jennings, Will, Lecturer, Rhetoric, 1997 (2001); MFA 1993 Iowa
Jennissen, Charles, Clinical Associate Professor, Emergency Medicine/Pediatrics, 1999 (2007); MD 1986 Minnesota
Jensen, Chris S., Clinical Professor, Pathology, 1999 (2010); BS 1985 Iowa State; MD 1989 Iowa
Jensen, Joelle Lyn, Clinical Adjunct Instructor, Nursing, 1995 (1995); BSN 1984 Dubuque; MSN 1988 Dubuque; CER 1993 ANCC
Jensen, Judith Marie, Adjunct Lecturer, Teaching and Learning, 2015 (2014);
Jensen, Paul Wayne, Adjunct Instructor, Journalism Mass Communication, 2010 (2010); BA 1975 Missouri
Jensen, Sarah, Adjunct Lecturer, Marketing, 2014 (2014);
Jensen, Valerie Ellen, Adjunct Assistant Professor, Pharmacy, 2007 (2007); BSPAN 1990 Iowa
Jerath, Nivedita U., Clinical Assistant Professor, Neurology, 2014 (2014);
Jeronimo, Selma M., Adjunct Professor, Internal Medicine, 2002 (2002); PHD 1994 Paulisa DE Medicina-Sao Paulo
Jerz, Richard A., Adjunct Assistant Professor, Management Sciences/Industrial Engineering, 2002 (2002); BS 1978 Illinois Technology; MBA 1984 St. Ambrose; PHD 1997 Iowa
Jeske, Diane, Professor, Philosophy, 1992 (2009); BA 1988 Lawrence; PHD 1992 MIT
Jessen, Kerry, Adjunct Instructor, Pharmacy, 2000 (2000); BS 1977 Iowa
Jessop, Julie L. P., Associate Professor, Chemical Biochemical Engineering, 2000 (2009); BS 1994 Michigan State; PHD 1999 Michigan State
Jesudoss, Randhir, Clinical Assistant Professor, Internal Medicine, 2014 (2014);
Jetton, Jennifer Garcia, Clinical Assistant Professor, Pediatrics, 2010 (2010); MD 2004 Baylor College of Medicine
Jew, Jean Y., Emeritus Professor, Anatomy Cell Biology, 1973 (1984); BS 1969 Newcomb; MD 1973 Tulane
Jin, Zhendong, Associate Professor, Pharmacy, 1997 (2003); BS 1988 East China Normal; MA 1990 State Univ of NY-Buffalo; PHD 1995 Purdue
Jivanjee, Shabnam Ibrahim, Adjunct Assistant Professor, Pharmacy Practice and Science, 2012 (2012); PHARMD 2011 University of Iowa
Joanning, Harvey Herman, Adjunct Professor, Rehabilitation and Counselor Education, 2010 (2010); BA 1969 Briar Cliff College; MA 1972 Iowa; PHD 1973 Iowa
Jochimsen, Peter R., Emeritus Professor, Surgery, 1974 (1983); BA 1961 Ripon; MD 1965 Marquette
Joens, Alicia Mae, Adjunct Instructor, University College Courses, 2008 (2014); BS 1999 Evansville; MA 2006 Iowa
Jogerst, Gerald John, Professor, Family Medicine, 1993 (2005); BA 1969 Loras; MD 1976 Iowa
Johannsen, Megan Marie, Adjunct Assistant Professor, Pharmacy Practice and Science, 2011 (2011); PHARMD 2009 Iowa
Johannsen, Robert G., Clinical Adjunct Assistant Professor, Family Medicine, 2010 (2010); BA 1973 Central College; MD 1977 Loyola, Chicago
Johanss, Patrick Joseph, Lecturer, Management Sciences, 2014 (2014);
Johlin, Frederick C., Professor, Internal Medicine, 1986 (2004); BS 1976 Toledo; MD 1980 Toledo Medical College
Johnsen, David C., Professor, Pediatrics/Pediatric Dentistry/Preventive Community Dentistry, 1995 (1995); BS 1965 Michigan; DDS 1970 Michigan; MS 1973 Iowa
Johnson, Alan K., Clinical Professor, Ophthalmology Visual Science, 1988 (2003); BS 1983 Loyola; MA 1983 Loyola
Johnson, Arlan T., Professor, Pathology, 2007 (2007); MD 1985 Iowa; DSC 1995 Leipzig, Germany
Johnson, Arlan T., Emeritus Professor, Pathology, 2007 (2007); MD 1985 Iowa; DSC 1995 Leipzig, Germany
Johnson, Arlan T., Clinical Assistant Professor, Internal Medicine, 1993 (1993); BS 1977 Iowa; MD 1984 Iowa
Johnson, Arlan T., Emeritus Professor, Anatomy Cell Biology, 1973 (1984); BS 1969 Newcomb; MD 1973 Tulane
Johnson, Brad Gordon, Lecturer, Health and Human Physiology, 2006 (2010); BA 1999 Iowa; BS 1999 Iowa; MA 2001 Iowa; PHD 2006 Iowa
Johnson, David Cassels, Assistant Professor, Teaching and Learning, 2013 (2013);
Johnson, Deanna S., Lecturer, Spanish Portuguese, 2001 (2008); BA 1977 DRURY; BM 1979 DRURY; MA 1981 Iowa; PHD 1995 Iowa

Johnson, Debra Lynn, Adjunct Assistant Professor, Psychology, 1997 (1997); BS 1987 South Dakota; MS 1991 Utah; PhD 1993 Utah

Johnson, Dorothy, Professor, Art Art History, 1987 (1997); BA 1972 Cincinnati; MA 1979 Cincinnati; PHD 1986 Calif-Berkeley

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Johnson, George F., Emeritus Professor, Pathology, 1976 (1988); BA 1963 Park; PhD 1969 Iowa State; MS 1976 Johns Hopkins

Johnson, Georgia Kay Tonn, Professor, Periodontics, 1991 (1996); SCB 1975 University of Iowa; BS 1975 Luther; DDS 1981 Iowa; MS 1983 Iowa

Johnson, Gregory M., Adjunct Instructor, Journalism Mass Communication, 2008 (2008); BA 1978 Luther College; MA 1984 Iowa

Johnson, Hans Joseph, Associate Professor, Electrical-Computer Engineering/Psychiatry/Biomedical Engineering, 2006 (2014); BSE 1997 Iowa; MS 2000 Iowa; PhD 2002 Iowa

Johnson, Hollie Ann, Adjunct Assistant Professor, Pharmacy Practice and Science, 2006 (2006); PHARMD 2004 Drake

Johnson, Jack D., Lecturer, French Italian, 1999 (2001); PHD 1995 California-Berkeley

Johnson, Krista Marie, Clinical Associate Professor, Internal Medicine, 2012 (2012); MD 1995 Washington SOM

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Jolin, Sarah Jean, Adjunct Instructor, Family Medicine, 2010 (2010); BS 1996 Iowa State; MSW 1999 Washington Univ

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Kawasaki, Hiroto, Associate Professor, Neurosurgery, 2002 (2011); MD 1995 Tokyo Women's Medical


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Kaylor, Kristen Annette, Adjunct Instructor, Communication Sciences and Disorders, 2013 (2013);


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Kee, Vicki R., Adjunct Assistant Professor, Pharmacy, 2003 (2003); PHARMD 1999 Samford University McWhorter S

Keech, John Charles, Clinical Assistant Professor, Cardiothoracic Surgery, 2013 (2013);

Keech, Katherine Govier Cashman, Clinical Assistant Professor, Anesthesia, 2013 (2013);

Keefe, Patrick Emmett, Adjunct Associate Professor, Pharmacy Practice and Science, 2012 (2012);

Keegan, Kathryn Anne, Adjunct Instructor, Communication Sciences and Disorders, (2013);

Keegan, Kelly A., Lecturer, English as Second Language, 2013 (2013);

Keegan, Thomas, Lecturer, Rhetoric, 2010 (2011); BA 2002 Virginia; PHD 2010 Iowa

Keeton, Paula Mae, Adjunct Professor, Psych Quant Foundations, 2002 (2014); BA 1986 ST MARY-OF-THE-WOODS; MS 1993 INDIANA STATE; PHD 1998 INDIANA STATE

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Kim, Jae Hee, Adjunct Assistant Professor, Division of Performing Arts, 2010 (2010); BA 1999 Sung-shim Women's; MA 2002 Han-Sung; MFA 2007 Iowa


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Kim, Kyungmin, Assistant Professor, Economics, 2010 (2010); BA 2004 Seoul National; PHD 2009 Pennsylvania

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Kimm, Vanessa, Clinical Instructor, Nursing, 2004 (2005); BSN 2001 Iowa; MSN 2003 Iowa

Kimmich, John, Emeritus Professor, Journalism Mass Communication, 1990 (2007); BS 1973 Illinois-Urbana; MA 1978 Purdue

Kimura, Ken, Emeritus Professor, Surgery, 1987 (1991); MD 1963 Kobe-Japan; PHD 1976 Kobe-Japan

King, David Carl, Adjunct Instructor, Preventive Community Dentistry, 2013 (2013);

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Kirchner, Peter T., Emeritus Professor, Radiology, 1981 (1983); BA 1960 Yale; MD 1964 Columbia


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Klahn, Jeff E., Adjunct Lecturer, Biology, 1990 (1997); PHD 1981 Iowa

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Klein, Garry Steven, Adjunct Lecturer, University College, 2010 (2013); MS 1994 Texas A M

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Kolen, Michael J., Professor, Psych Quant Foundations, 1984 (1997); BS 1973 Iowa; MA 1975 Arizona; PHD 1979 Iowa

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Logan, James, Adjunct Instructor, Preventive Community Dentistry, 2010 (2010); BS 1975 Augusta State; DDM 1978 Med of Georgia
Logan, Nelson S., Emeritus Professor, Preventive Community Dentistry, 1970 (1978); PHD 1969 Utah
Logemann, Craig D., Adjunct Associate Professor, Pharmacy, 1995 (2004); BS 1988 Iowa; PHARMD 1995 Minnesota
Logsdon, John, Associate Professor, Biology, 2003 (2007); BS 1988 Iowa State; PhD 1995 Indiana
Lohman, David F., Emeritus Professor, Psych Quant Foundations, 1981 (1993); BA 1972 Notre Dame; PHD 1979 Stanford
Lohmuller, Joseph L., Clinical Adjunct Professor, Surgery, 1999 (2013); MD 1986 Indiana
London, Barry, Professor, Internal Medicine, 2012 (2012);

Long, Jeffrey D., Professor, Biostatistics/Psychiatry, 2010 (2010); MA 1992 California State; PhD 1996 Southern California
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Longfellow, Brenda, Associate Professor, Art Art History, 2005 (2011); PhD 2005 Michigan
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Meidlinger, Talia Katherine, Adjunct Instructor, University College Courses/University College, 2011 (2014);
Meier, Jeffery Linn, Associate Professor, Internal Medicine, 1993 (2004); BS 1981 Iowa; MD 1986 Iowa
Meisenbach, Rebecca, Adjunct Associate Professor, Communication Studies, 2012 (2012);
Meisterheim, Melissa, Lecturer, English as Second Language, 2009 (2010); BA 1998 Truman State; MA 2001 Iowa
Mekies, Saul, Adjunct Lecturer, Management Organizations, 2009 (2009); MA 1984 Connecticut
Melcher, Jon Christian, Adjunct Assistant Professor, Pharmacy Practice and Science, 2013 (2013);
Melchert, Thomas E., Emeritus Associate Professor, Biology, 1963 (1968); BA 1958 Lawrence; MS 1960 Wisconsin; PhD 1963 Texas
Melessa, Samuel Joseph, Assistant Professor, Accounting, 2012 (2012);
Mellen, Katherine Rose, Lecturer, Health and Human Physiology, 2000 (2000); MA 1997 Iowa; PhD 2007 Iowa
Melloy, James Chad, Adjunct Instructor, University College Courses, 2011 (2014); MBA 2010 St. Ambrose
Melloy, Michael Joseph, Adjunct Instructor, Law-Faculty, 2012 (2012);
Melroe, Corey, Adjunct Instructor, Pharmacy Practice and Science, 2014 (2014);
Menda, Yusuf, Associate Professor, Radiology/Radiation Oncology, 2001 (2011); MD 1994 Istanbul
Mendez, Adriana, Professor, International Programs/Spanish Portuguese, 1985 (1998); BA 1972 Cincinnati; MA 1974 Duke; PhD 1979 Cornell
Mendoza, Sergio Andres, Clinical Associate Professor, Orthopaedics and Rehabilitation, 2001 (2007); MD 1990 Pontifica Catolica
Meng, Xiangbing, Assistant Professor, Obstetrics Gynecology, 2009 (2009); BA 1990 Beijing Normal; MS 1995 Beijing Normal; PHD 1998 Beijing Inst Rad Medicine
Merkel, Crystal Marie, Clinical Adjunct Assistant Professor, Family Medicine, 2013 (2013);
Menninger, John R., Emeritus Professor, Biology, 1972 (1978); BA 1957 Harvard; PhD 1964 Harvard
Mentzer, Raymond A., Professor, History/Religion, 2001 (2001); AB 1967 Fordham; MA 1970 Wisconsin; PhD 1973 Wisconsin

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Merideth, Jeff, Adjunct Instructor, Pharmacy, 2005 (2005); BSPH Creighton

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Merrill, Christopher, Professor, International Writing/ English/International Programs, 2000 (2000); MA 1982 Washington

Mertens, Carol Elaine, Adjunct Assistant Professor, Teaching and Learning, 2000 (2000); BS 1975 Northeast Missouri; MA 1989 Iowa; PHD 2000 Iowa

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Meurice, Yannick, Professor, Physics Astronomy, 1990 (2003); BS 1981 Universite Catholique de Louva; PHD 1985 Universite Catholique de Louva

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Meyer, David L., Adjunct Assistant Professor, Orthodontics, 2009 (2009); DDS 1987 Iowa; MS 1989 Louisville

Meyer, Nathaniel Amiel, Clinical Adjunct Assistant Professor, Family Medicine, 2014 (2014);

Meyerholz, David Kyle, Associate Professor, Pathology, 2006 (2011); DVM 1994 Iowa State; MS 2001 Iowa State; PHD 2004 Iowa State

Mezhib, James John, Assistant Professor, Radiation Oncology/Surgery, 2010 (2010); MD 2001 Buffalo

Miakotina, Olga L., Adjunct Assistant Professor, Biology, 2011 (2011); PHD 1988 Moscow State, Russia

Michaelson, Jacob J., Assistant Professor, Psychiatry, 2013 (2013);

Michaelson, Susan Dominy, Adjunct Assistant Professor, Rehabilitation and Counselor Education, 2003 (2005); BA 1983 Texas Lutheran; MA 2001 Iowa; PHD 2005 Iowa

Michelfelder, Mollie Susanne, Adjunct Instructor, Social Work, 2014 (2014);

Michels, Timothy Lee, Adjunct Associate Professor, Family Dentistry, 1987 (2000); BS 1981 Drake; DDS 1985 Iowa

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Miller, Benjamin James, Assistant Professor, Orthopaedics and Rehabilitation, 2010 (2010); BS 1999 Cornell; MD 2003 Iowa

Miller, Anthony Clark, Clinical Associate Professor, Psychiatry, 2008 (2010); BA 1990 Goshen College; MD 1994 University of Iowa

Miller, Dana K., Adjunct Instructor, Pharmacy, 1997 (1997); BSW 1981 Creighton

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Miller, Daniel W., Assistant Professor, Art Art History, 2014 (2014);

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Miller, Debra Kay Walters, Clinical Adjunct Assistant Professor, Pediatrics, 1988 (1988); MD 1980 Iowa

Miller, Eric, Adjunct Instructor, Preventive Community Dentistry, 2008 (2008); DDS 1988 Colorado

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Miller, James Arthur, Adjunct Instructor, Pharmacy Practice and Science, 1997 (1997); BS 1971 Iowa

Miller, Matthew Edward, Adjunct Assistant Professor, Operative Dentistry, 2010 (2013); DMD 2001 Southern Illinois

Miller, Michael P., Clinical Associate Professor, Emergency Medicine, 2010 (2014); BS 1990 Manchester; MD 1995 Iowa

Miller, Michelle, Adjunct Instructor, Pharmacy Practice and Science, 2010 (2010); PHARM 2010 Nebraska Medical

Miller, Nathan, Lecturer, Law-Faculty, 2011 (2011); BA 1998 Dayton; JD 2002 New York Law

Miller, Rachel Ann Warnjes, Clinical Professor, Internal Medicine, 1996 (2008); BS 1986 South Dakota State; MD 1989 Iowa

Miller, Robert T., Professor, Law-Faculty, 2012 (2012);

Miller, Sarah Louise, Clinical Assistant Professor, Emergency Medicine, 2012 (2012);

Miller, William A., Emeritus Professor, Faculty Practice Administration, 1997 (1997); BS 1965 Ohio State; MS 1969 Ohio State; PHAR 1971 Kentucky

Miller Jr., Francis Joseph, Professor, Internal Medicine/Anatomy Cell Biology/Radiation Oncology, 1995 (2013); MD 1989 Iowa

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Minion, F. Chris, Adjunct Professor, Microbiology, 2010 (2010); PHD 1983 Alabama, Birmingham

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Mitchell, Teresa Marie, Adjunct Assistant Professor, Pharmacy, 2009 (2009); PHARM 2008 Iowa

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Moonjely, Joe, Clinical Adjunct Assistant Professor, Internal Medicine, 2003 (2003); BA 1984 Unif of Calicut, India; MD 1995 Trichur Medical College

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Moore, Cathleen M., Professor, Psychology, 2007 (2007); BA 1988 Hamilton; PHD 1994 California-San Diego

Moore, Daniel, Professor, Music, 1996 (2006); BME 1981 East Texas State; MM 1985 Wichita State; DMA 2000 Kentucky


Moore, Duncan, Adjunct Instructor, Health Management Policy, 2003 (2014); BA 1963 Florida State; MA 1965 Iowa

Moore, Jeffrey, Adjunct Instructor, University College Courses, 2011 (2014); BA 1990 Missouri

Moore, Joseph P., Adjunct Assistant Professor, Pharmacy, 2002 (2002); PHARMD 1994 Creighton

Moore, Joyce L., Associate Professor, Psych Quant Foundations, 1994 (2000); BS 1985 Pittsburgh; PHD 1993 Stanford

Moore, Michael Edward, Associate Professor, International Programs/History, 2008 (2011); AB 1984 Michigan; AM 1987 Michigan; PHD 1993 Michigan

Moore, Pamela Sue, Adjunct Instructor, Social Work, 2000 (2000); BA 1982 Iowa; BBA 1983 Iowa; MSW 1987 Iowa


Moore, Steven A., Professor, Pathology, 1986 (1995); BS 1977 Purdue; PHD 1980 Indiana; MD 1982 Indiana

Moores, Kevin Gene, Clinical Associate Professor, Pharmacy, 1987 (2005); PHARMD 1979 Nebraska

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Moran, Michael E., Adjunct Instructor, Health and Human Physiology, 1985 (1985); BA 1978 Northern Colorado; MA 1979 Northern Colorado

Moran, Patrick, Lecturer, Health and Human Physiology, 2014 (2014);

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Morcuende, Jose A., Professor, Pediatrics/Orthopaedics and Rehabilitation, 2001 (2013); MD 1981 Autonoma Madrid

Morcuende, Maria Angeles, Clinical Assistant Professor, Psychiatry, 2007 (2007); MD 1994 Autonoma DeMadrid

Mordkoff, Jonathan Toby, Associate Professor, Psychology, 2007 (2007); MA 1988 Johns Hopkins; PHD 1992 Johns Hopkins

Morelli, Brian A., Adjunct Instructor, University College Courses, 2009 (2011); AA 2002 Des Monies; BA 2005 Iowa

Moreno Uribe, Lina Maria, Assistant Professor, Dows Institute-Research, 2008 (2008); DDS 1991 Medellin Colombia; PhD 2005 Iowa

Moreton, Melissa N., Adjunct Assistant Professor, Interdisciplinary Programs, 2013 (2013); BA 1990 University of Illinois; MA 2003 Syracuse University

Morgan, Dale D., Clinical Adjunct Professor, Anesthesia, 2002 (2002); BA 1947 Cee; MD 1951 Iowa

Morgan, Donald P., Emeritus Professor, Occupational Environmental Health, 1973 (1983); BS 1944 Franklin Marshall; MD 1947 Indiana; MS 1949 Northwestern; PHD 1953 Northwestern

Morgan, Douglas Eugene, Adjunct Assistant Professor, Pharmacy, 1991 (1991); BSPH 1978 Iowa; MS 1980 Iowa

Morgan, John D., Adjunct Associate Professor, Preventive Community Dentistry/Family Dentistry, 2000 (2012); BS 1970 Iowa; DDS 1975 Iowa
Morgan, Melanie, Adjunct Associate Professor, Journalism Mass Communication/Communication Studies, 2012 (2012);

Morgan, Teresa Anne, Clinical Associate Professor, Hospital Dentistry, 2001 (2007); BA 1990 Iowa; DDS 1993 Iowa; MS 1997 Iowa

Morgan, Thomas Gerald, Clinical Adjunct Assistant Professor, Family Medicine, 2014 (2014);

Morio, Dominic Gerard, Adjunct Assistant Professor, Oral Maxillofacial Surgery/Hospital Dentistry, 2007 (2010); BS 1998 Iowa; DDS 2002 Iowa

Morita, Craig T., Associate Professor, Internal Medicine, 1998 (1998); PHD 1990 Calif-San Francisco; MD 1990 Calif-San Francisco

Moritani, Toshio, Clinical Professor, Radiology, 2004 (2013); MD 1987 Showa UNIV Tokyo; PHD 1991 Showa UNIV Tokyo

Mormann, Megan M., Adjunct Assistant Professor, Pharmacy Practice and Science, 2012 (2014);


Morris, Adalaeide, Emeritus Professor, English, 1974 (1985); BA 1964 Wells; MA 1966 Minnesota; PHD 1972 Minnesota

Morris, Hughlett, Emeritus Professor, Otolaryngology-Head Neck Surgery/Communication Sciences and Disorders, 1957 (1969); BA 1952 Iowa; MA 1957 Iowa; PHD 1960 Iowa

Morrison, Dianne R., Adjunct Instructor, Pharmacy, 1997 (1997); BS 1972 Purdue

Morriss, Mary J., Emeritus Professor, Pediatrics, 1987 (2003); BS 1965 Bucknell; MD 1969 Duke


Morton, Roscoe F., Clinical Adjunct Assistant Professor, Internal Medicine, 2001 (2001); MD 1976 Kansas

Mosher, David John, Professor, Psychiatry, 1999 (2011); BA 1989 Colby; MS 1995 Florida; PHD 1997 Florida

Mosher, Mark G., Adjunct Associate Professor, Surgery, 1994 (2014); BS 1986 University of Iowa; MA 1988 Iowa

Mosher, Hilary Jean, Clinical Assistant Professor, Internal Medicine, 2011 (2011); BA 1994 Dartmouth; MFA 1998 Warren Wilson; MD 2008 Iowa

Mosher, Mary A., Adjunct Assistant Professor, Pharmacy, 2008 (2008); PHARMED 2007 Iowa

Moss, Janalyn L., Adjunct Instructor, University College, 2013 (2013); BS 1994 Illinois State; MA 1998 IL @ Springfield; MS 2000 IL, Urbana-Champaign

Moss, Kenton Kraig, Clinical Adjunct Assistant Professor, Family Medicine, 1994 (2002); BS 1974 Iowa; MD 1978 Iowa

Mote, Gale J., Adjunct Lecturer, Management Organizations, 1995 (2000); BA 1981 Coe College; MBA 1994 Iowa

Motwani, Bharat, Clinical Adjunct Assistant Professor, Internal Medicine, 2010 (2010); MBCH 1998 Punjabrao Deshmukh; MBBS 1998 Punjabrao Deshmukh Med Coll

Moulton, Jennifer Renee Pertzborn, Adjunct Instructor, Pharmacy, 1997 (1997); BSN 1991 Iowa

Mount, Jerry, Adjunct Assistant Professor, Geographical and Sustainability Sciences, 2013 (2013);

Mount, Michael K., Professor, Management Organizations, 1981 (1993); BS 1973 Iowa; MS 1975 Iowa State; PHD 1977 Iowa State

Moussa, Hind, Clinical Adjunct Assistant Professor, Obstetrics Gynecology, 2012 (2012);

Moy, Alan B., Adjunct Associate Professor, Biomedical Engineering, 1993 (2000); BS 1981 Calif-Davis; MD 1985 Creighton

Moye-Rowley, William, Professor, Internal Medicine/Physiology, 1989 (2002); BS 1981 Illinois-Urbana; PHD 1986 Purdue

Moyers, John R., Emeritus Professor, Anesthesia, 1979 (1990); BS 1969 Iowa; MD 1973 Iowa

Mozena, Emily Nicole Ratzel, Lecturer, Health and Human Physiology, 2003 (2009); BFA 2001 Iowa; MA 2003 Iowa

Mraz, Royann C., Clinical Associate Professor, Pediatrics, 1999 (2008); BS 1973 Purdue; MD 1978 Maryland

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Muehl, Siegmar, Emeritus Professor, Psych Quant Foundations, 1958 (1966); MA 1948 Chicago; MS 1953 New York State Teachers; PHD 1959 Iowa

Mueller, Kathryn Lyndsay, Adjunct Assistant Professor, Communication Sciences and Disorders, 2012 (2012); BA 2003 University of Nottingham; MS 2006 Reading University

Mueller, Keith, Professor, Health Management Policy/Public Policy Center, 2010 (2010); BA 1973 Wisconsin-Milwaukee; MA 1975 Wisconsin-Milwaukee; PHD 1979 Arizona

Mueller, Martin, Clinical Assistant Professor, Anesthesia, 2008 (2008); MD 1998 Rostock, Germany

Mueller, Rashmi, Clinical Associate Professor, Anesthesia, 2008 (2008); MD 1990 Bombay


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Mulhausen, Paul L., Adjunct Professor, Internal Medicine, 1994 (2008); BA 1982 St. Olaf; MD 1987 Minnesota

Mulholland, Timothy Lloyd, Adjunct Assistant Professor, Urology, 2007 (2007); BS 1993 Iowa; MD 1997 Iowa
Mullan, Brian Francis, Clinical Professor, Radiology, 1996 (2009); BA 1985 Johns Hopkins; MS 1986 Northwestern; MD 1991 Chicago-Pritzker

Muller, Barbara Ann, Clinical Adjunct Professor, Internal Medicine, 1991 (2003); BS 1978 St Peters College; MD 1982 Autonomous Univ of Guadalajara

Mullin, Karen R., Adjunct Assistant Professor, Social Work, 2005 (2005); DR 1994 Cincinnati

Mullins, Robert F., Professor, Physiology/Ophthalmology Visual Science, 2001 (2014); BS 1989 Wheaton; MS 1991 Saint Louis; PhD 1998 Saint Louis

Mulrooney, Thomas P., Adjunct Lecturer, Health Management Policy, 2012 (2012);

Mundt, Jennifer Lynn, Adjunct Assistant Professor, Pharmacy Practice and Science, 2013 (2013);

Munoz, Kristine L., Professor, Spanish Portuguese/Communication Studies, 1995 (2005); BS 1980 Texas-Austin; BA 1980 Texas-Austin; MA 1982 Texas-Austin; PhD 1989 Washington

Murhammer, David W., Professor, Chemical Biochemical Engineering, 1989 (2003); BS 1979 Oregon State; MS 1982 Oregon-State; PhD 1989 Houston

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Murphy, Jody Reed, Associate Professor, Pediatrics/Epidemiology, 1985 (1992); BS 1975 Francis Marion; MD 1979 Medical Univ of South Carolina; MS 1985 Iowa

Murphy, Mary M., Lecturer, Accounting, 2001 (2001); JD 1988 Iowa

Murphy, Maurita, Professor, Music, 1983 (2000); BM 1976 Eastman School of Music; MM 1979 Michigan State

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Murray, Kirk Stephen, Adjunct Instructor, Journalism Mass Communication, 2006 (2006); BA 1994 Iowa; MA 2001 Iowa

Murray, Margaret, Lecturer, Rhetoric, 2005 (2013); SCB 1979 Chicago; MS 1981 Yale; PhD 1983 Yale; MFA 2005 Iowa

Murray, Michael F., Adjunct Instructor, Pharmacy, 1997 (1997); BS 1982 Iowa; BPH 1982 Iowa

Murray, William M., Emeritus Professor, English, 1958 (1974); BS 1956 New Haven Teachers; MA 1958 Iowa; PhD 1964 Iowa

Murrell, Michael David, Clinical Assistant Professor, Family Dentistry, 2012 (2012);

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Murry, John P. Jr., Associate Professor, Marketing, 1999 (1999); BS 1979 Kansas State; MBA 1987 Kansas; PhD 1988 Kansas


Musick, Jennifer, Adjunct Assistant Professor, Pharmacy, 2003 (2003); PHARMD 2001 Iowa

Musselman, Catherine Anne, Assistant Professor, Biochemistry, 2013 (2013);

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Muston, Ray A., Emeritus Associate Professor, Edu Policy Leadership Studies, 1970 (1975); BS 1961 Indiana; MBA 1963 Indiana; EDD 1970 Indiana

Mutel, Robert L., Professor, Physics Astronomy, 1975 (1986); AB 1968 Cornell; PhD 1975 Colorado

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Myers, Laura M., Adjunct Assistant Professor, Dermatology, 2003 (2003); BA 1995 Drake; MD 1999 Dartmouth Medical

Myers, Tony Arthur, Clinical Adjunct Assistant Professor, Family Medicine, 1999 (2000); MD 1990 Iowa

Myers, Virginia A., Emeritus Professor, Art Art History, 1962 (1981); BA 1949 George Washington; MFA 1951 California College of Arts

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Mytnyk, Mark Charles, Clinical Adjunct Assistant Professor, Orthopaedics and Rehabilitation, 1991 (1991); MD 1983 Iowa

Nabhan-Warren, Kristy, Associate Professor, Religion, 2012 (2012);

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Nadkarni, Prakash, Professor, Internal Medicine, 2012 (2012);

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Nagel, Alan F., Emeritus Professor, English/Cinema Comparative Literature, 1968 (1980); AB 1963 Harvard; MA 1965 Cornell; PhD 1969 Cornell

Nagel, Jamie Marie, Adjunct Instructor, Social Work, 2014 (2014); BA 2005 Univ of Puget Sound

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Nair, Vasu, Emeritus Professor, Chemistry, 1969 (1980); BSc 1963 Otago-New Zealand; PhD 1966 Adelaide-Australia; ARACI 1967 Royal Australian Chemical Inst

Nakato, Tatsuaki, Adjunct Professor, Civil-Environmental Engineering, 1977 (1996); BS 1966 Nagoya-Japan; MS 1968 Japan; PhD 1974 Iowa

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Nau, Peter Nealey, Clinical Assistant Professor, Surgery, 2013 (2013);

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Neff, John S., Emeritus Professor, Physics Astronomy, 1964 (1979); BS 1957 Wisconsin; MS 1958 Wisconsin; PhD 1961 Wisconsin

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Nonnenmann, Matthew Winston, Assistant Professor, Occupational Environmental Health, 2011 (2011); MS 1999 Iowa; PHD 2005 Iowa

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Parker, Andrew, Assistant Professor, Music, 2009 (2009); MM 2003 Yale; DMA 2009 Michigan
Parker, Bryce Benjamin, Instructor, Military Science, 2014 (2014);
Parker, Christopher P., Adjunct Assistant Professor, Pharmacy, 2008 (2008); BS 1997 Nebraska; PHARMD 2006 Iowa
Parker, Edith A., Professor, Community Behavioral Health, 2010 (2010); BA 1983 Davidson; MPH 1989 North Carolina; PHD 1995 North Carolina
Parker, I. Reed, Clinical Assistant Professor, Family Dentistry, 1989 (2000); BA 1969 Northwestern; DDS 1978 Iowa
Parker, Stan, Clinical Adjunct Assistant Professor, Radiology, 1991 (1991); MD 1982 Iowa
Parkes, Ford B., Emeritus Associate Professor, German, 1969 (1976); BA 1964 Kent State; MA 1966 Kent State; PHD 1971 Michigan State
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Parsons, Donald, Adjunct Lecturer, Law-Faculty, 2011 (2011); BSEE 1970 Leigh University; BSE 1970 Leigh; MAT 1972 Leigh; JD 1977 Georgetown
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Paulsen, Joseph John, Adjunct Assistant Professor, Pharmacy Practice and Science, 2014 (2014); BA 2007 University of Iowa
Paulsen, Michael, Professor, Educ Policy Leadership Studies, 2004 (2004); BA 1973 St. Ambrose; MA 1974 University of Wisconsin-Milwaukee; PHD 1983 Iowa
Paulson, Brandon Scott, Adjunct Instructor, University College Courses, 2010 (2014); BSC 2005 UW-River Falls; MSED 2009 UW- La Crosse
Paulson, Henry L., Adjunct Professor, Neurology, 1997 (2006); BS 1981 Yale; MD 1990 Yale; PHD 1990 Yale
Paulson, Wayne L., Emeritus Professor, Civil-Environmental Engineering, 1960 (1972); BS 1959 Wisconsin; MS 1960 Wisconsin; PHD 1965 Iowa
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**Porter, Samuel D.**, Emeritus Associate Professor, Surgery, 1974 (1985); BA 1956 Grinnell; MD 1960 Creighton

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Putnam, Shannon Dennis, Adjunct Assistant Professor, Epidemiology, 2005 (2005); BS 1987 Wayne State; MS 1989 Northern Arizona; PHD 1999 Iowa

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Quinby, Gary Edwin, Clinical Adjunct Assistant Professor, Dermatology, 2001 (2001); BS 1988 Iowa; PHD 1996 Iowa; MD 1996 Iowa

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Quinn-Wriedt, Lindsey Taylor, Lecturer, English as Second Language, 2013 (2014);

Quitmeyer, Gordon Kent, Adjunct Lecturer, Accounting, 2014 (2014);

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Rabedeaux, Steven Grant, Adjunct Instructor, Family Dentistry, 1992 (1992); BS 1980 Iowa; DDS 1984 Iowa

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Rachow, John W., Clinical Assistant Professor, Internal Medicine, 1988 (1988); BS 1967 Nebraska-Lincoln; MS 1969 Nebraska-Lincoln; PHD 1976 Nebraska-Lincoln; MD 1976 Nebraska-Omaha

Rademacher, Bruce E., Adjunct Instructor, Pharmacy, 2003 (2003); BSPH 1980 Purdue

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Radley, Jason J., Assistant Professor, Psychology, 2011 (2011); BA 1995 Miami; MA 1997 Princeton; PHD 2001 Princeton

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Rajkumar, Christopher, Clinical Adjunct Assistant Professor, Internal Medicine, 2014 (2014);

Rajput, Maheen, Clinical Assistant Professor, Radiology, 2008 (2008); MD 2000 Illinois

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Ramey, Sandra L., Lecturer, Nursing, 2006 (2013); BS 1992 St Francis; MSN 1995 Iowa; PHD 2002 Iowa State

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Randak, Christoph Oskar, Assistant Professor, Pediatrics, 2009 (2009); MD 1992 Wurzburg, Germany; MSC 1996 Hagen, Germany

Randall, Eric Wayne, Adjunct Instructor, Health and Human Physiology, 2007 (2007); BS 2000 Iowa; MA 2004 Iowa

Randel, Patricia Ann, Adjunct Instructor, Pharmacy, 1997 (1997); BS 1993 Iowa


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Rantanen, Jason, Associate Professor, Law-Faculty, 2011 (2011); AB 1999 Brown; MA 2000 Chicago; JD 2003 Chicago

Rapert, Molly I., Adjunct Associate Professor, Marketing, 2009 (2009); PHD 1992 Memphis

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Rastogi, Rahul, Clinical Associate Professor, Anesthesia, 2014 (2014);

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Raw, Robert Maurice, Clinical Professor, Anesthesia, 2004 (2012); MBCHB 1979 Pretoria, South Africa

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Ray, Thomas L., Emeritus Professor, Dermatology, 1979 (1991); BA 1968 Williams; MD 1972 Oregon

Raza, Tehseen, Adjunct Assistant Professor, Physics Astronomy, 2011 (2011); BS 2001 Eng Tech, Lahore; PHD 2010 Purdue

Read, Charles H., Emeritus Professor, Pediatrics, 1954 (1959); BSC 1939 ACADIA-Nova Scotia; MD 1943 McGill-Canada

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Reasoner, Andrea Leigh, Clinical Assistant Professor, Pediatrics, 1994 (1995); BS 1984 Iowa; MD 1988 Iowa

Rebouche, Charles J., Emeritus Associate Professor, Pediatrics, 1984 (1988); BS 1970 Tulane; PHD 1974 Vanderbilt

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Reddy, Chandan Gopal, Assistant Professor, Neurosurgery, 2012 (2012);

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Reed, Alan I., Professor, Surgery, 2007 (2007); BS 1980 Hobart College; MD 1984 Cornell

Reed, Daniel Allen, Professor, Computer Science/ Electrical-Computer Engineering, 2012 (2012);

Reed, David A., Adjunct Assistant Professor, Nursing, 2003 (2003); BA 1970 Indiana; MA 1972 Indiana; PHD 1989 Indiana

Reed, Ronald Ross, Adjunct Lecturer, Health Management Policy, 2000 (2000); MPH 1983 Pittsburgh

Reese, Jean Ladora, Emeritus Associate Professor, Nursing, 1969 (1980); BSN 1961 Nebraska; MN 1968 Washington; PHD 1984 Iowa

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Reider, Ronald, Clinical Adjunct Assistant Professor, Internal Medicine, 2000 (2000); MD 1971 Virginia
Reimer, Toni Tripp, Professor, Nursing, 1977 (1986); BSN 1969 Maryland; MSN 1973 Ohio State; MA 1974 Ohio State; PHD 1977 Ohio State

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Reinking, Benjamin Evers, Clinical Associate Professor, Pediatrics, 2006 (2012); BA 1996 UNI; MD 2000 Iowa

Reinking, Caitlin Marie, Adjunct Assistant Professor, Pharmacy Practice and Science, 2014 (2014);

Reins-Schweer, Lorie Elaine, Lecturer, Law-Faculty, 2007 (2007); BA 1985 Northern Iowa; JD 2003 Iowa

Reisinger, Heather Schacht, Assistant Professor, Internal Medicine, 2008 (2008); BA 1998 Luther College; PHD 2004 American Univ


Reist, Diane Kay Buresh, Adjunct Assistant Professor, Pharmacy/Pharmacy Practice and Science, 2014 (2014); BS 1981 Iowa

Reist, Jeffrey Clark, Clinical Associate Professor, Pharmacy Practice and Science, 1993 (2014); BS 1982 Iowa; PHARM 2007 Florida

Reitz, John C., Professor, International Programs/Law-Faculty, 1983 (1988); BA 1970 Harvard; JD 1975 Michigan

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Rempher, Kenneth Joseph, Clinical Adjunct Professor, Nursing, 2014 (2014);

Renner, Katherine Anne, Adjunct Assistant Professor, Pharmacy Practice and Science, 2013 (2013);

Renner, Lynnette Michelle, Adjunct Associate Professor, Social Work, 2008 (2012); BS 1994 Mary; MSW 1995 Kentucky; PHD 2005 Wisconsin

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Rettenmaier, Lawrence Joseph, Clinical Adjunct Instructor, Internal Medicine, 2005 (2005); MD 1984 UIHC

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Reyes, Ramon, Clinical Adjunct Assistant Professor, Internal Medicine, 2008 (2008); MD 1991 Santo Thomas

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Reynolds, David R., Emeritus Professor, Geographical and Sustainability Sciences, 1968 (1974); BS 1962 Pennsylvania State; MS 1963 Northwestern; PHD 1966 Northwestern

Reynolds, Hilary Ann, Adjunct Assistant Professor, Pediatric Dentistry, 2012 (2012); BLS 1998 Iowa State Univ; DDS 2002 Univ of Iowa College of Dent

Rezai, Karim, Emeritus Associate Professor, Radiology, 1984 (1988); MD 1971 Shiraz Medical School-Iran

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Rice, James G., Emeritus Associate Professor, Library Information Science, 2004 (1984);

Rice, John Oscar, Clinical Associate Professor, Oral Maxillofacial Surgery, 2004 (2008); DDS 1971 Iowa

Rice, Kevin G., Professor, Pharmacy, 2001 (2001); BS 1983 Marycrest; PHD 1987 Iowa

Rice, Tom W., Professor, Provost Office Administration/Political Science, 1999 (1999); BA 1979 Iowa State; PHD 1983 Iowa

Rich, Michael Jeffrey, Assistant Professor, Art Art History, 2013 (2013);

Rich-Chappell, Meredith Lee, Adjunct Lecturer, Law-Faculty, 2010 (2010); JD

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Richardson, Larry L., Adjunct Instructor, Pharmacy Practice and Science, 2014 (2014);

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Richenbacher, Wayne E., Emeritus Professor, Cardiothoracic Surgery, 1993 (1999); BS 1976 Case Western Reserve; MD 1980 Cincinnati

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Richerson, Hal B., Emeritus Professor, Internal Medicine, 1964 (1974); BS 1950 University of Arizona; MD 1954 Northwestern Univ Med School

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Richman, Lynn Charles, Emeritus Professor, Pediatrics, 1973 (1984); BA 1967 Grinnell; MA 1970 Iowa; PhD 1973 Iowa

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Rickertsen, Sharon, Adjunct Assistant Professor, Pharmacy, 2000 (2000); PHARMD 1997 Iowa

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Riesz, Peter C., Emeritus Professor, Marketing, 1968 (1980); BS 1958 Rutgers; MBA 1963 Columbia; PhD 1971 Columbia

Rietz, Thomas A., Professor, Finance, 1993 (2011); BA 1983 Northern Iowa; PhD 1988 Iowa

Riezman, Raymond G., Professor, Economics, 1976 (1990); BA 1969 Washington-Missouri; PhD 1977 Minnesota

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Riggs, Sheila Marie, Adjunct Assistant Professor, Epidemiology, 1993 (1993); DDS 1986 Iowa; MS 1987 Harvard; MD 1991 Harvard

Rijhsinghani, Asha, Emeritus Professor, Obstetrics Gynecology, 1992 (2012); ISC 1973 Jahind College; MD 1979 ECFMG; MBBS 1979 Grand Medical College

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Riley, TERRANCE PATRICK, Adjunct Assistant Professor, Oral Maxillofacial Surgery/Operative Dentistry, 2007 (2008); BS 1977 Arkansas; DDS 1982 Iowa

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Rinehart, Kathy J., Adjunct Assistant Professor, Pharmacy, 1986 (1986); PHARMD 1985 Iowa

Rinehart, Richard H., Clinical Assistant Professor, Psychiatry, 2002 (2002); BA 1985 Ohio State; MD 1985 Ohio State

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Ringdahl, Joel E., Adjunct Assistant Professor, Pediatrics, 2000 (2000); BS 1992 Florida; PhD 1999 Louisiana State

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Ringen, Jon, Professor, Health and Human Physiology, 1993 (1993); BA 1965 North Dakota; MA 1969 Indiana; PhD 1971 Indiana


Rippentrop, Jonathan Mark, Clinical Adjunct Assistant Professor, Urology, 2006 (2006); MD 1999 Iowa

Rivas, Megan Monaghan, Adjunct Assistant Professor, Theatre Arts, 2012 (2012);

Rivas, Tialoc Antonio, Assistant Professor, Theatre Arts, 2012 (2012);

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Rix, Samantha, Lecturer, English as Second Language, 2013 (2013);

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Robertson, Janice Lee, Assistant Professor, Physiology, 2013 (2013);

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Robertson, Maureen, Associate Professor, Asian Slavic Languages Literature, 1976 (1976); BA 1958 Indiana; MA 1960 Indiana; PhD 1970 Washington

Robillard, Jean E., Professor, Pediatrics, 2003 (2003); BA 1964 Montreal; MD 1968 Montreal

Robin, Debra Kay, Adjunct Instructor, Communication Sciences and Disorders, 1995 (1996); BA 1976 San Diego State; MS 1981 Redlands

Robinson, Arlyn K., Adjunct Associate Professor, Family Dentistry, 1978 (1989); BS 1973 Upper Iowa; DDS 1977 Iowa

Robinson, Jennifer G., Professor, Internal Medicine/Epidemiology, 1998 (2010); BA 1982 Northwestern University; MD 1987 Minnesota; MPH 1995 Minnesota
Robinson, John P., Emeritus Professor, Electrical-Computer Engineering, 1965 (1972); BS 1960 Iowa State; MS 1962 Princeton; PhD 1966 Princeton

Robinson, Marilynne, Professor, Creative Writing/English, 1983 (1993); BA 1966 Brown; PhD 1975 Washington

Robinson, Robert G., Professor, Psychiatry, 1990 (1990); BS 1967 Cornell-Ithaca; MD 1971 Cornell-Ithaca

Robinson, Robert A., Professor, Pathology/Oral Path,Radiology/ Medicine, 1982 (1993); BA 1976 Missouri; MD 1976 Missouri; PhD 1982 Minnesota

Robinson, Stephen Spencer, Adjunct Instructor, Asian Slavic Languages Literature, 2013 (2013);

Robus, Richard, Clinical Adjunct Associate Professor, Pediatrics, 2003 (2006); BS 1994 Texas Christian; MD 1998 Iowa

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Rodnitzky, Robert L., Emeritus Professor, Neurology, 1972 (1982); BS 1963 Chicago; MD 1966 Chicago

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Rogovin, Howard, Emeritus Professor, Art Art History, 1969 (1984);

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Rokes, Christopher Alan, Clinical Adjunct Assistant Professor, Pediatrics, 2011 (2011);

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Rossi, Chris, Adjunct Lecturer, Law-Faculty, 1999 (1999); JD 1982 Iowa; PHD 1992 John Hopkins
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Sanders, Lisa M., Adjunct Instructor, Pharmacy Practice and Science, 2014 (2014);
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Sanderson, Wayne T., Adjunct Professor, Epidemiology, 2002 (2005); BA 1977 Missouri; MS 1978 Central Missouri State; PHD 1997 North Carolina
Sandler, Leonard, Clinical Professor, Law-Faculty, 1990 (1997); BS 1978 Northeastern Univ; JD 1981 Maryland
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Sardzinski, Joel Paul, Adjunct Associate Professor, Family Dentistry, 1999 (2012); BA 1982 Mid America Nazarene; DDS 1994 Missouri-Kansas City
Sargeant, Stephanie Lynne Kuhn, Adjunct Instructor, University College Courses, 2008 (2014); MS 2005 Indiana
Sargent, Daniel, Adjunct Professor, Biostatistics, 2003 (2006); BS 1992 Minnesota; MS 1994 Minnesota; PHD 1996 Minnesota
Sarsour, Ehab Hasan, Adjunct Assistant Professor, Radiation Oncology, 2011 (2011); PHD 2006 Iowa
Sartini-Rideout, Claudia, Lecturer, French Italian, 2009 (2012); MS 1998 Iowa; PHD 2006 Iowa
Sather, Bethany Carol, Adjunct Assistant Professor, Pharmacy, 2007 (2007); PHARMD 2003 Iowa
Satisky, Kevin, Clinical Adjunct Assistant Professor, Psychiatry, 2006 (2006); BS 1996 North Carolina; MD 2001 Brody, East Carolina
Sato, Mariko, Clinical Assistant Professor, Pediatrics, 2014 (2014);
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Sauder, Michael Edward, Associate Professor, Sociology, 2005 (2011); BA 1993 Truman State; MA 1998 Penn State; PHD 2005 Northwestern
Sauers, Sara Thurber, Adjunct Assistant Professor, Interdisciplinary Programs, 2003 (2007); AA 1977 Dupage; BS 1981 Wisconsin-Madison; MA 2003 Iowa
Saunders, Edward J., Associate Professor, Social Work, 1985 (1991); BA 1974 Villanova; MSW 1979 St. Louis; MPH 1985 Pittsburgh; PhD 1985 Pittsburgh
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Saunders, Jennifer Beth, Adjunct Instructor, Social Work, 2014 (2014);
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Scandrett, Forrest R., Emeritus Professor, Prosthodontics, 1970 (1982); DDS 1965 Iowa; MS 1970 Texas
Schaal, David, Emeritus Professor, Theatre Arts, 1956 (1969); BA 1942 Geneva; MA 1946 Western Reserve
Schabillion, Jeffry T., Emeritus Professor, Biology, 1968 (1980); BS 1965 Iowa State; MA 1967 Kansas; PhD 1969 Kansas
Schacht, Elizabeth Ann Tracy, Adjunct Associate Professor, Nursing, 1979 (2004); BA 1972 Iowa; MA 1978 Iowa; PHD 2003 Iowa
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Schafer, James Michael, Adjunct Instructor, University College Courses, 2005 (2014); BA 1990 Truman State; MA 1996 Memphis
Schafer, Maureen M., Adjunct Instructor, University College Courses, 2005 (2014); BA 1991 Northeast Missouri State; MS 1998 Memphis
Schantz, Mark E., Adjunct Assistant Professor, Social Work, 2014 (2014);
Schacht, Elizabeth Ann Tracy, Adjunct Associate Professor, Nursing, 1979 (2004); BA 1972 Iowa; MA 1978 Iowa; PHD 2003 Iowa
Schacht, Leslie Carol, Adjunct Lecturer, University College, 2013 (2013);
Schafer, James Michael, Adjunct Instructor, University College Courses, 2005 (2014); BA 1990 Truman State; MA 1996 Memphis
Schafer, Maureen M., Adjunct Instructor, University College Courses, 2005 (2014); BA 1991 Northeast Missouri State; MS 1998 Memphis
Schantz, Mark E., Emeritus Professor, Law-Faculty, 2010 (2012); BA 1963 Iowa; MA 1965 Oxford; LLM 1968 Yale
Scharf, Denise K., Lecturer, Teaching and Learning, 2010 (2010); DED 1994 Northern Iowa
Scharf, Kevin Michael, Assistant Professor, Radiology, 2009 (2009); MA 1988 Iowa; PHD 1994 Iowa; MCS 2001 Iowa
Schlatteman, Gina C., Emeritus Associate Professor, Health and Human Physiology, 2001 (2005); BA 1975 New College; PHD 1985 Johns Hopkins

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Schilling, Keith Edwin, Adjunct Assistant Professor, Earth and Environmental Sciences, 2010 (2010); PHD 2009 Iowa

Schilling, Margo Lin, Clinical Professor, Internal Medicine, 1998 (2010); BA 1981 Wartburg; MD 1985 Iowa

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Schlichting, Adam Bradford, Clinical Assistant Professor, Emergency Medicine/Internal Medicine, 2013 (2013);
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Schoon, Timothy George, Adjunct Instructor, University College, 2010 (2013); BA 1991 Grinnell; MA 1999 Missouri

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Schouten, Mario, Adjunct Associate Professor, Epidemiology, 1995 (2005); PhD 1993 Iowa

Schopick, Steffi B., Adjunct Instructor, Communication Sciences and Disorders, 2012 (2012);

Schrag, Dennis Michael, Adjunct Lecturer, Management Organizations, 2014 (2000); MA 1972 Iowa; EDD 1982 Drake

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Schultz, Randall L., Emeritus Professor, Marketing, 1988 (1998); BSc 1965 Ohio State; MBA 1967 Wayne State; PhD 1970 Northwestern

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Schutte, Brian C., Adjunct Associate Professor, Pediatrics, 1991 (2005); BS 1983 Creighton; PhD 1988 Wisconsin
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Schwalm, Carla Marourneen, Clinical Adjunct Assistant Professor, Pediatrics, 2012 (2012);


Schwartz, Christopher Elmer, Lecturer, Health and Human Physiology, 2013 (2013);

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Seo, Seongjin, Assistant Professor, Ophthalmology Visual Science, 2011 (2011); PHD 2005 Washington St Louis
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Shaffer, Michael A., Adjunct Instructor, Physical Therapy/Health and Human Physiology, 2003 (2003); BS 1992 Iowa; MS 1994 Beaver College
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Stark, David Wayne, Adjunct Instructor, Pharmacy, 2008 (2008); BSPH 1977 Iowa  
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Starlin, Crystal S., Adjunct Assistant Professor, Pharmacy, 2006 (2006); PHARMD 1999 Creighton
Starner, Timothy Duane, Associate Professor, Pediatrics, 2001 (2010); BS 1987 Colorado State; BS 1991 Colorado State; MD 1995 Colorado-Denver

Starry, Mary J., Adjunct Assistant Professor, Pharmacy Practice and Science, 2014 (2010); BSPH 1980 Iowa

Stasheff, Steven F., Adjunct Assistant Professor, Pediatrics, 2007 (2007); PHD 1991 Duke; MD 1992 Duke

Staub, David, Clinical Adjunct Assistant Professor, Internal Medicine, 2014 (2014)


Stauss, Harald Martin, Associate Professor, Health and Human Physiology, 2002 (2008); MD 1991 Heidelberg; PHD 1999 Humboldt

Stay, Barbara A., Emeritus Professor, Biology, 1967 (1977); BA 1947 Vassar; MA 1949 Radcliffe; PHD 1953 Radcliffe

Stecopoulos, Harilaos, Associate Professor, English, 1999 (2008); BA 1986 Oberlin; PHD 1999 Virginia

Steele, Gillian, Adjunct Instructor, Spanish Portuguese, 2010 (2010); BA 2006 Iowa; MA 2009 Iowa

Steele, Oliver, Emeritus Professor, English, 1967 (1974);

Steelman, Victoria Jean, Assistant Professor, Nursing, 1989 (2009); BSN 1979 Iowa; PHD 1997 Iowa

Steenblock, Douglas F., Clinical Adjunct Assistant Professor, Psychiatry, 2001 (2001); MD 1992 Creighton

Steffen, Angela Lynn, Adjunct Assistant Professor, Pharmacy Practice and Science, 2012 (2012);

Steffensmeier, Andrew Clyde, Adjunct Assistant Professor, Ophthalmology Visual Science, 2011 (2011); BA 2000 Luther; MD 2004 Iowa

Stehbens, James A., Emeritus Professor, Pediatrics, 1967 (1984); BS 1962 Iowa State; PHD 1967 Iowa

Stein, Kyle Matthew, Clinical Assistant Professor, Oral Maxillofacial Surgery, 2013 (2013);

Steinberg, Allen, Emeritus Associate Professor, History, 1991 (1993); BA 1972 Northwestern; MA 1974 Columbia; MPHIL 1975 Columbia; PHD 1983 Columbia

Steinbrech, Nora, Adjunct Lecturer, Teaching and Learning, 2015 (2001); PHD 1991 Iowa

Steinitz, Maya, Associate Professor, Law-Faculty, 2011 (2011); BSL 1999 Jerusalem; LLM 2000 New York; JD 2005 New York

Stellwagen, Earle C., Emeritus Professor, Biochemistry, 1964 (1973); BS 1955 Elmhurst; MS 1959 Northwestern; PHD 1963 California-Berkeley

Stellwagen, Nancy C., Adjunct Professor, Biochemistry, 1993 (1993); BA 1956 Northwestern; MS 1958 California-Berkeley; PHD 1967 California-Berkeley

Stensrud, Emily Dee, Adjunct Instructor, Pharmacy Practice and Science, 2013 (2013);

Stensvaag, John-Mark, Professor, Law-Faculty, 1987 (1987); BA 1969 Augsburg; JD 1974 Harvard

Stephan, Jean-Marie, Clinical Assistant Professor, Obstetrics Gynecology, 2014 (2014);

Stephens, Lindsey J., Adjunct Instructor, Pharmacy, 2003 (2003); BSPH 1998 Drake

Stephens, Ralph L., Emeritus Professor, Mechanical Engineering, 1965 (1972); BS 1957 Illinois; MS 1960 Illinois; PHD 1965 Wisconsin

Stern, Ann Lynnette, Adjunct Instructor, Communication Sciences and Disorders, 2012 (2012);


Stern, Gerald D., Emeritus Professor, Creative Writing, (1994);

Stevens, Hanna, Assistant Professor, Psychiatry, 2014 (2014);

Stevens, Lewis Lee, Assistant Professor, Pharmacy, 2012 (2012);

Stevenson, Chad Bruce, Adjunct Assistant Professor, Family Dentistry, 2010 (2010); DDS 1988 Iowa


Stewart, David E., Professor, Mathematics, 1998 (2006); BSC 1983 Univ of Queensland-Australia; BE 1983 Univ of Queensland-Australia; PHD 1990 Univ of Queensland-Australia

Stewart, Garrett, Professor, English, 1992 (1992); BA 1967 USC; MPHIL 1970 Yale; PHD 1971 Yale

Stewart, Greg L., Professor, Management Organizations, 2002 (2008); BS 1993 Brigham Young; PHD 1993 Arizona State

Stewart, Kathleen, Associate Professor, Geographical and Sustainability Sciences, 2007 (2010); BA 1982 McMaster; MS 1984 British Columbia; PHD 1999 Maine

Stewart, Mary, Emeritus Assistant Professor, Nursing, 1974 (1983);

Stewart, Zoe Ann, Clinical Assistant Professor, Surgery, 2009 (2009); PHD 2000 Vanderbilt; MD 2002 Vanderbilt

Steyers Jr., Curtis M., Adjunct Professor, Orthopaedics and Rehabilitation, 1985 (1994); BS 1971 Bucknell; MD 1975 Temple

Stier, Amy Christine, Clinical Associate Professor, Pediatrics, 2007 (2013); BA 1999 Minnesota; MD 2003 Iowa

Stigler, George Lee, Adjunct Lecturer, Law-Faculty, 2005 (2005); BA 1972 Northern Iowa; JD 1975 Iowa

Still, Dale E., Adjunct Instructor, Physics Astronomy, 1999 (1999); BS 1975 Buena Vista; MS 1979 Iowa

Stilley, Joshua David, Clinical Assistant Professor, Emergency Medicine, 2013 (2013);

Stinemarian, Anita M. Thomas, Clinical Associate Professor, Nursing, 2001 (2004); BSN 1974 Iowa; MSN 1990 Missouri; PHD 2003 Iowa

Stipp, Christopher, Associate Professor, Physiology/Biology, 2003 (2010); BS 1989 Indiana; PHD 1996 MA Institute of Tech

Stoakes, Christopher David, Lecturer, Civil-Environmental Engineering, 2011 (2011); BSE 2003 Iowa; ME 2007 Massachusetts Inst; PHD 2011 Illinois

Stoakes, Kim M., Adjunct Assistant Professor, Pharmacy, 2008 (2008); PHARM 1986 Idaho State

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Stockdale, Crystal Veremelle, Adjunct Instructor, University College Courses, 2010 (2013); BA 2003 Northern Iowa; MBA 2011 The University of Iowa

Stolpen, Alan Howard, Associate Professor, Radiology, 1999 (1999); PHD 1988 Harvard; MD 1988 Harvard

Stoltz, David, Associate Professor, Internal Medicine/Physiology/Biomedical Engineering, 2007 (2013); BA 1993 Mississippi; PHD 1998 Louisiana State; MD 2000 Louisiana State

Stoltzfus, Conrad M., Emeritus Professor, Microbiology, 1979 (1985); BA 1966 Colorado; PHD 1971 Wisconsin


Stone, Elizabeth Anne, Assistant Professor, Chemistry, 2010 (2010); BA 2005 Grinnell; PHD 2009 Wisconsin-Madison

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Storr's, Landon, Associate Professor, History, (2012);

Stover, Peggy Elizabeth, Lecturer, Marketing, 2013 (2013);

Strack, Stefan, Professor, Pharmacology/Pathology, 2000 (2012); BS 1985 Wurzburg; MS 1988 State Univ of New York-Albany; PHD 1991 State Univ of New York-Albany

Strait, Steven Wayne, Adjunct Assistant Professor, Art Art History, 2010 (2010); BS 1976 Northwest Missouri State; MA 1979 Iowa; MFA 1981 Iowa

Stramer, Osnat, Associate Professor, Statistics Actuarial Science, 1994 (2000); BSC 1979 Hebrew-Israel; MA 1984 Haifa; PHD 1993 Colorado State

Stras, David R., Adjunct Lecturer, Law-Faculty, 2014 (2014);

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Streit, Judy Ann, Clinical Associate Professor, Internal Medicine, 1996 (2012); BS 1983 Iowa State; MD 1988 Iowa

Streng, David Joseph, Adjunct Instructor, Pharmacy, 1997 (1997); BS 1974 Iowa

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Sugumaran, Ramanathan, Adjunct Professor, Geographical and Sustainability Sciences, 2012 (2012);

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Sulentic, Joseph Nicholas, Lecturer, Management Organizations, 1998 (1999); MBA 1988 Iowa

Suliman, Faroug Yassin Mohmd, Clinical Assistant Professor, Internal Medicine, 2009 (2013); MBBS 1994 Khartoum

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Sullivan, Shannon J., Clinical Associate Professor, Pediatrics, 2000 (2007); BS 1980 Wisconsin; MD 1985 Wisconsin

Suls, Jerry M., Emeritus Professor, Psychology, 1990 (1990); BA 1968 Temple; MA 1971 Temple; PHD 1973 Temple

Summers, Robert W., Emeritus Professor, Internal Medicine, 1970 (1983); BS 1961 Michigan State; MD 1965 Iowa

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Swailes, Nathan Thomas, Lecturer, Anatomy Cell Biology, 2010 (2010); BS 2000 Leeds; PHD 2005 Leeds

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Swaney, Michelle M., Adjunct Instructor, Pharmacy Practice and Science, 2012 (2012); BS 1981 North Dakota State University

Swanson, Carrie Elizabeth, Assistant Professor, Philosophy, 2013 (2013);

Swanson, David E., Clinical Assistant Professor, Anesthesia, 2002 (2002); BA 1986 Northern Iowa; MD 1991 Iowa

Swanson, Elizabeth Anne, Associate Professor, Nursing, 1974 (1981); BSN 1969 Iowa; MA 1975 Iowa; PhD 1986 Iowa

Swanson, Stephen, Professor, Music, 1994 (2002); BM 1968 North Park; MM 1971 Northwestern

Swaran Singh, Tejinder Singh, Clinical Assistant Professor, Anesthesia, 2012 (2014);

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Swayze, Victor Warren II, Associate Professor, Psychiatry, 1988 (1995); BS 1976 Union-Nebraska; MD 1979 Loma Linda

Swegle, James Robert, Clinical Adjunct Assistant Professor, Surgery, 2009 (2009); MD 1985 Iowa

Swegle, John Matthew, Clinical Associate Professor, Pharmacy, 1997 (2006); BS 1992 Drake; PHARMD 1996 Iowa

Swenson, Andrea, Clinical Assistant Professor, Neurology, 2008 (2008); BA 1999 Colorado College; MD 2003 North Dakota

Swenson, Charles A., Emeritus Professor, Biochemistry, 1960 (1972); BS 1955 Gustavus Adolphus; PhD 1959 Iowa

Swenson, Dale C., Adjunct Assistant Professor, Chemistry, 1994 (1994); BS 1973 Iowa; PhD 1979 Iowa

Swenson, David, Adjunct Lecturer, Urban Regional Planning, 2010 (2010); MA 1985 Iowa

Swett, Alan, Adjunct Associate Professor, Operative Dentistry, 1999 (2013); BS 1980 Iowa; DDS 1983 Iowa

Swett, Keene, Emeritus Professor, Earth and Environmental Sciences, 1966 (1974); BS 1955 Tufts; MS 1961 Colorado; PhD 1965 Edinburgh, Scotland

Swick, Brian Lester, Clinical Associate Professor, Pathology/Dermatology, 2007 (2012); BS 1996 Iowa State; MD 2001 Iowa


Swope, Bri Lee, Adjunct Instructor, Health and Human Physiology, 2009 (2009); BA 2002 Iowa; MA 2009 Univ of Iowa

Swope, Chad M., Adjunct Instructor, University College Courses, 2009 (2014);

Syed, Nasreen A., Clinical Associate Professor, Ophthalmology/Visual Science/Pathology, 2002 (2010); BA 1989 Missouri-Kansas City; MD 1990 Missouri-Kansas City

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Syrbu, Sergei I., Clinical Associate Professor, Pathology, 2004 (2010); MD 1982 Chishinau Moldova; PhD 1987 Moscow, USSR

Syrop, Craig H., Professor, Obstetrics Gynecology, 1986 (1997); MD 1980 Virginia

Szabo, Ellen, Adjunct Instructor, Social Work, 2000 (2000); MED 1986 Columbia

Szecsei, Denise, Lecturer, Mathematics/Computer Science, 2007 (2012); BS 1985 Redlands, CA; MS 1995 Florida State; PhD 2000 Florida State

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Szertics, Joseph, Emeritus Professor, Spanish Portuguese, 1967 (1975); MA 1957 Madrid-Spain; PhD 1962 Madrid-Spain

Szeszyczyki, Donald, Adjunct Lecturer, Economics, 2001 (2001); MA 1980 Northern Illinois

Szot, Joseph F., Clinical Professor, Internal Medicine, 2003 (2014); BS 1990 St Bonaventure; MD 1994 Rochester, NY

Tabor, Anne S., Adjunct Assistant Professor, Epidemiology, 2003 (2003); BS 1975 Iowa State; MPH 1979 Minnesota

Tachau, Katherine H., Professor, History, 1985 (1993); BA 1972 Oberlin; MA 1975 Wisconsin; PhD 1981 Wisconsin

Taeger, Kelli Rae, Adjunct Lecturer, Health and Human Physiology, 2014 (2014);

Tague, Abby L., Adjunct Assistant Professor, Pharmacy Practice and Science, 2010 (2010); PHARMD 2003 Iowa

Tague, Marshall J., Adjunct Assistant Professor, Pharmacy Practice and Science, 2011 (2011); PHARMD 2003 Iowa

Tahbo, Taylor Rahm, Instructor, Military Science, 2014 (2014);

Taj, Jabeen, Clinical Assistant Professor, Internal Medicine, 2009 (2013); MD 2004 Andhra Pradesh India

Takacs, Elizabeth Broghammer, Clinical Associate Professor, Obstetrics Gynecology/Urology, 2006 (2011); MD 1999 Iowa

Takacs, Michael Edward, Clinical Associate Professor, Emergency Medicine, 2006 (2011); MS 1989 SUNY @ Buffalo; MD 2001 Loyola

Takahashi, Gail A., Adjunct Assistant Professor, Communication Sciences and Disorders, 2002 (2003); AB 1978 Occidental; MA 1982 California-San Diego; PhD 1990 Iowa

Talbot, Kyle R., Lecturer, English as Second Language, 2014 (2014);

Talbot, Albert D., Emeritus Professor, Journalism Mass Communication, 1967 (1975); BS 1958 Iowa State; MA 1961 Michigan State; PhD 1968 Michigan State

Talman, William T., Professor, Neurology, 1983 (1990); BA 1966 Virginia Military Institute; MD 1970 Virginia
Talunghit, Supitcha, Adjunct Assistant Professor, Operative Dentistry, 2012 (2012); DDS 1996 Chulalongkorn Univ, Thailand

Tamerius, James D., Assistant Professor, Geographical and Sustainability Sciences, 2013 (2013);

Tan, Aixin, Assistant Professor, Statistics Actuarial Science, 2009 (2009); BS 2003 Peking; MS 2005 Florida; PhD 2009 Florida

Tan, Kai, Associate Professor, Internal Medicine, 2008 (2013); PhD 2004 Washington, St. Louis

Tanas, Munir Raja, Assistant Professor, Pathology, 2014 (2014);

Tang, Qihe, Professor, Statistics Actuarial Science, 2006 (2012); BS 1995 Anhui Univ; MS 1998 Anhui Univ; PhD 2001 U of Science Tech - China

Tang, Wenfang, Professor, Political Science/International Programs, 2009 (2009); BA 1982 Peking; MA 1985 Kansas; PhD 1990 Chicago

Taylor, Christina Linn Harless, Assistant Professor, Internal Medicine, 2008 (2008); MD 2003 Iowa

Taylor, Ryan M., Clinical Adjunct Assistant Professor, Family Medicine, 2012 (2012);

Taylor, Rebecca J., Adjunct Assistant Professor, Pharmacy Practice and Science, 2014 (2014);

Taylor, Ryan M., Adjunct Assistant Professor, Pharmacy Practice and Science, 2014 (2014);


Teahen, Carrie Christine, Adjunct Instructor, Preventive Community Dentistry, 2012 (2012);

Teahen, Peter R., Adjunct Lecturer, Rehabilitation and Counselor Education, 2009 (2009); AS 1974 Worsham Coll Mortuary Science; BA 1985 Coe

Teixeira, Erica C., Associate Professor, Operative Dentistry, 2014 (2014);

Teixeira, Fabricio, Professor, Endodontics, 2014 (2014);

Temple, Scott D., Clinical Professor, Psychiatry, 1999 (2005); BA 1974 Oregon; PhD 1980 Temple; MS 1998 Kansas

Teng, Yue, Clinical Adjunct Assistant Professor, Family Medicine, 2011 (2011); MD 1999 Xinhua, China

Tennapel, Mindi Joy, Adjunct Instructor, Radiation Oncology, 2010 (2010); BS 2001 Iowa; MBA 2004 Iowa; MS 2010 Iowa

Teoh-Fitzgerald, Melissa Lai Tee, Adjunct Assistant Professor, Radiation Oncology, 2010 (2010); PHS 2005 Alberta, Canada

Tephly, Thomas R., Emeritus Professor, Pharmacology, 1971 (1971); BS 1957 Connecticut; PhD 1962 Wisconsin; MD 1965 Minnesota

Tessier, Joshua J., Clinical Adjunct Assistant Professor, Family Medicine, 2012 (2012);

Tewson, Timothy, Emeritus Professor, Radiology/Radiation Oncology, 2000 (2000); PhD 1972 London

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Thangaraj, Yuvaraj, Clinical Adjunct Assistant Professor, Epidemiology, 2011 (2011); BS 1998 Oklahoma State; MPH 2001 Iowa; PhD 2006 Iowa

Thayer, David L., Emeritus Professor, Theatre Arts, 1955 (1968); BS 1952 Lewis and Clark; MA 1955 Iowa; PhD 1960 Iowa

Thayer, Keith E., Emeritus Professor, Prosthodontics, 1955 (1963); BA 1951 Cornell; DDS 1955 Iowa; MS 1956 Iowa
Thein, Amanda Haertling, Associate Professor, Teaching and Learning, 2011 (2011); PHD 2005 Minnesota
Theis, Megan Ann, Adjunct Instructor, University College Courses, 2014 (2014);
Theisen, William, Associate Professor, Music, 2013 (2013); HS 1978
Thenuwaru, Hennadige Nandasiri, Adjunct Assistant Professor, Economics, 2008 (2012); PHD 1997 Iowa
Thenuwaru, Kokila, Clinical Assistant Professor, Anesthesiology, 2004 (2004); MBBS 1991 N Colombo Med, SriLanka; MD 2002 Uni Colombo,SriLanka
Therrien, William J., Adjunct Associate Professor, Teaching and Learning, 2006 (2009); BA 1993 Penn State; MED 1998 Arizona State; PHD 2004 Penn State
Thibodeau, Megan Elizabeth, Adjunct Instructor, Social Work, 2012 (2012);
Thieman, Corey J., Adjunct Assistant Professor, Pharmacy, 2009 (2009); PHARMD 2004 Creighton
Thies, Patrick William, Adjunct Assistant Professor, Pharmacy, 1982 (1983); MS 1981 Iowa
Thoma, Kate Duchene, Clinical Assistant Professor, Family Medicine, 2010 (2010); BA 2001 St. Thoma, MN; MD 2005 Iowa
Thomas, Alexandra, Clinical Associate Professor, Internal Medicine, 2001 (2004); AB 1987 Princeton; MD 1995 Johns Hopkins
Thomas, Barbara Schalk, Emeritus Professor, Nursing, 1971 (1980); BS 1951 Iowa State; MA 1964 Iowa; PHD 1968 Iowa
Thomas, Barrett, Associate Professor, Management Sciences, 2002 (2009); BA 1996 Grinnell; MS 1999 Michigan; PHD 2002 Michigan
Thomas, Carole L., Emeritus Associate Professor, Music, 1970 (1977); BS 1964 Northern Illinois; MM 1966 Northern Illinois; MS 1968 Northern Illinois
Thomas, Christie P., Professor, Obstetrics Gynecology/Internal Medicine, 1992 (2005); MBBS 1982 Madras
Thomas, Jon Gregory, Clinical Adjunct Assistant Professor, Family Medicine, 1992 (2002); BS 1976 Iowa; MD 1982 Iowa
Thomas, Joss John, Clinical Associate Professor, Anesthesiology, 2006 (2012); MBBS 1994 St. John’s Medical; MPH 1999 Johns Hopkins
Thomas, Karl William, Clinical Professor, Internal Medicine, 2001 (2011); BA 1991 Williams; MD 1995 Johns Hopkins
Thomas, Larry Dean, Adjunct Instructor, Pharmacy Practice and Science, 2014 (2014);
Thomas, Michael Steven, Adjunct Associate Professor, Family Dentistry, 1982 (2000); BS 1977 Iowa; DDS 1981 Iowa
Thomas, Syeda, Lecturer, Nursing, 2014 (2014);
Thomas, Tammara Pettrill, Adjunct Assistant Professor, Rehabilitation and Counseling Education, 2010 (2014); BA 1997 Southern Illinois; MA 2000 Southern Illinois
Thomas, Volker, Professor, Rehabilitation and Counseling Education, 2011 (2014); PHD 1990 Minnesota
Thompson, Brad Howard, Associate Professor, Radiology, 1990 (1996); BA 1981 Luther; MD 1986 Iowa
Thompson, Duane E., Emeritus Professor, Management Organizations, 1969 (1987); BS 1953 Iowa State; MS 1954 Iowa State; PHD 1969 Iowa
Thompson, Edward S., Emeritus Professor, Nursing, 1998 (2005); BA 1970 Cincinnati; MS 1973 North Dakota; BSN 1975 North Dakota; PHD 1997 Minnesota
Thompson, Gregory, Adjunct Instructor, University College, 2008 (2013); BS 2000 Eastern Illinois; MA 2002 Missouri - Columbia
Thompson, H. Stanley, Emeritus Professor, Ophthalmology Visual Science, 1967 (1976); BA 1953 Minnesota; MD 1961 Minnesota; MS 1966 Iowa
Thompson, Jonathan Glenn, Clinical Adjunct Assistant Professor, Pathology, 2009 (2009); MD 2002 Iowa
Thompson, Margaret Mary Kallaus, Adjunct Lecturer, Management Organizations, 2013 (2013); BBA 1981 The University of Iowa; MBA 1986 The University of Iowa
Thompson, Michael L., Adjunct Instructor, Social Work, 1995 (1995); BA 1970 Missouri; MPA 1976 Missouri
Thompson, Nancy J., Associate Professor, Community Behavioral Health, 1980 (1986); BS 1969 California State-Stanislaus; MS 1971 Columbia; MPH 1974 Columbia; PHD 1979 Columbia
Thompson, Robert James, Adjunct Assistant Professor, Operative Dentistry, 2011 (2013); BA 1999 Central; MS 2001 Iowa State; DDS 2011 Iowa
Thompson, Scott A., Adjunct Assistant Professor, Pharmacy, 2002 (2002); BS 1990 Drake; PHARMD 1994 Drake
Thompson, Stewart, Assistant Professor, Ophthalmology Visual Science, 2011 (2011); BSC 1997 Kingston; MSC 2000 Kings; PHD 2004 Imperial,UK
Thomsen, David J., Adjunct Instructor, Pharmacy, 1998 (1998); BS 1991 Iowa; BSPH 1991 Iowa
Thomsen, Teri, Clinical Associate Professor, Neurology, 2007 (2012); MD 2001 Iowa
Thomsen, Timothy Alan, Clinical Professor, Orthopaedics and Rehabilitation/Surgery/Internal Medicine, 1976 (2004); MD 1974 Iowa
Thomson, William, Adjunct Instructor, Anthropology, 2003 (2003); BA 1973 NC WESLEYAN
Thoreson, Joseph D., Clinical Adjunct Assistant Professor, Internal Medicine, 1979 (1979); MD 1969 Iowa


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Throgmorton, James A., Emeritus Professor, Urban Regional Planning, 1986 (2004); BA 1966 Notre Dame; MS 1972 Louisville; PhD 1983 California-Los Angeles

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Tighe, Sarah Kathryn, Assistant Professor, Psychiatry, 2013 (2013);

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Tinker, A. James, Adjunct Lecturer, Health Management Policy, 1983 (1983); MHA 1967 Michigan

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Toth, Keri M., Adjunct Assistant Professor, Pharmacy, 2007 (2007); BSC 1999 Slipper Rock Univ; PHARMD 2004 Ohio State
Totten, Susan Lynn, Adjunct Instructor, Music, 2014 (2014);

Tovar, Elizabeth Anne, Adjunct Assistant Professor, University College Courses, 2014 (2014);

Towfic, Farah Marie, Adjunct Assistant Professor, Pharmacy Practice and Science, 2013 (2013);

Townsend, Andrew Keith, Adjunct Instructor, Preventive Community Dentistry, 2012 (2012);

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Tranchel, Mary C., Associate Professor, Rhetoric, 1989 (1996); BA 1975 Iowa; MA 1980 Pennsylvania State; PHD 1987 Texas-Austin

Tracy, Chad, Clinical Associate Professor, Urology, 2009 (2014); BS 1999 Richmond; MD 2003 Iowa

Tranel, Daniel Thomas, Professor, Neurology/ Psychology, 1986 (1994); BA 1979 Notre Dame; MA 1981 Iowa; PHD 1982 Iowa


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Treacy, Journey, Adjunct Assistant Professor, Pharmacy, 2007 (2007); PHARMD 2004 Iowa

Treat, Teresa Ann, Associate Professor, Psychology, 2010 (2010); BA 1991 Indiana; PHD 2000 Indiana

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Tricot, Guido Jozek, Professor, Internal Medicine, 2012 (2012);

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Trot, Robert Kevin, Adjunct Lecturer, Accounting, 2006 (2006); MA 1980 Nebraska; MAC 2003 Iowa

Troutman, Beth Renee, Clinical Professor, Psychiatry, 1989 (2014); BA 1981 Creighton; MA 1984 Iowa; PHD 1988 Iowa

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Tuerk, Alexander H., Adjunct Lecturer, Law-Faculty, 2014 (2014);

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Tully, Melissa, Assistant Professor, Journalism Mass Communication, 2011 (2011); BA 2005 Boston; MA 2005 Wisconsin; PHD 2011 Wisconsin

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Turner, Melissa Louise Finlay, Lecturer, Theatre Arts, 2012 (2012);

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Vaidya, Jatin Girish, Assistant Professor, Psychiatry, 2005 (2005); BS 1996 Illinois; PhD 2004 Iowa

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Van Heukelom, Jon, Clinical Associate Professor, Emergency Medicine, 2009 (2014); BA 2002 Central; MD 2006 Iowa

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Van Thournout, Nicole Renae, Adjunct Assistant Professor, Pharmacy, 2005 (2005); PHARMD 2004 Kansas
Van Voorhis, Brad, Professor, Obstetrics Gynecology, 1990 (2001); BS 1981 Iowa State; MD 1984 Iowa
Van Voorst, Tanya, Adjunct Instructor, Communication Sciences and Disorders, 2007 (2007); BA 2000 University of Northern Iowa; MA 2002 Northern Iowa
Van Winkle, James L., Adjunct Assistant Professor, Pharmacy, 2003 (2003); AA 1997 Southwestern Community; PHARMD 2002 Iowa
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Vandenbosch, Daniel Todd, Clinical Adjunct Assistant Professor, Family Medicine, 1999 (2002); BA 1988 Dordt; MD 1992 Iowa
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Vanderveelde, Lea S., Professor, Law-Faculty, 1978 (1985); BS 1974 Wisconsin; JD 1978 Wisconsin
Vanderwal Nwadike, Londa Sue, Adjunct Assistant Professor, Occupational Environmental Health, 2010 (2010); PHD 2009 Iowa
Vandyke, Don C., Emeritus Professor, Epidemiology/Pediatrics, 1987 (2001); BS 1968 Villanova; MD 1975 Pennsylvania State
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Vannucci, Gregory P., Adjunct Assistant Professor, Oral Maxillofacial Surgery, 2000 (2000); BS 1988 San Francisco; DDS 1993 Loyola
Vanvoorst, Wendy A., Clinical Adjunct Assistant Professor, Psych Quant Foundations, 2009 (2009); BA 2000 Prude; MA 2002 Central Michigan; PHD 2005 Central Michigan
Varga, Steven M., Associate Professor, Microbiology/Pathology, 2003 (2009); BS 1993 Notre Dame; PHD 1999 Univ Mass-Med School
Vargas, Marcos Alfredo, Professor, Family Dentistry, 1994 (2008); BS 1985 Peruvian Cayetano Heredia-Peru; DDS 1985 Peruvian Cayetano Heredia; MS 1994 Iowa
Vargo, John David, Adjunct Assistant Professor, Occupational Environmental Health, 2003 (2003); BS 1978 Murray State; PHD 1983 Tennessee
Varnum, Kelly Leigh, Adjunct Instructor, Communication Sciences and Disorders, 1992 (1996); MA 1989 Iowa
Vaschevici, Renata, Adjunct Instructor, Pharmacy Practice and Science, 2014 (2014);
Vasi, Ion Bogdan, Assistant Professor, Sociology, 2013 (2013);
Vaughan Sarrazin, Mary Susan, Associate Professor, Internal Medicine, 2005 (2010); BBA 1983 Iowa; MA 1986 Northwestern; PHD 1997 Iowa
Vaughn, Thomas E., Associate Professor, Nursing/Health Management Policy, 1995 (2003); BS 1974 Eastern Michigan; PHD 1993 Michigan
Vavra, Theresa Anne, Adjunct Assistant Professor, Pharmacy, 2008 (2010); PHARMD 2006 Iowa
Veach, Lisa A., Clinical Adjunct Associate Professor, Internal Medicine, 1991 (2001); MD 1983 Iowa
Veach, Stevie Rae, Clinical Assistant Professor, Pharmacy Practice and Science, 2007 (2007); PHARMD 2006 Iowa
Veeck, Ann Mcconnell, Adjunct Professor, Marketing, 2014 (2014);
Veeder, Tobias A., Adjunct Lecturer, Management Organizations, 2014 (2014);
Veerman, Lori Schmidt, Adjunct Assistant Professor, Operative Dentistry, 2011 (2011); BS 1981 Minnesota; MS 1983 Iowa; DDS 1987 Iowa
Veit, Lisa Marie, Adjunct Assistant Professor, Pharmacy Practice and Science, 2007 (2007); PHARMD 2005 Iowa
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Velur, Sathvika, Clinical Assistant Professor, Internal Medicine, 2012 (2014);
Veng-Pedersen, Peter, Professor, Pharmacy, 1984 (1994); PHAR 1970 Copenhagen; PHD 1977 Sydney
Venteicher, Andrea Lynn, Clinical Adjunct Assistant Professor, Family Medicine, 2012 (2012);
Venzon, Michael Andrew, Adjunct Instructor, University College Courses, 2005 (2014); AB 2001 St. Ambrose; MED 2003 St. Ambrose
Vermeer, Micah Jess, Adjunct Instructor, Preventive Community Dentistry, 2013 (2013); BA 2005 Central College
Vezceau, Patrick Joseph, Adjunct Assistant Professor, Oral Maxillofacial Surgery, 1994 (1994); BS 1980 Missouri-Columbia; DDS 1984 Missouri-Kansas City; MS 1991 Iowa

Vick, Melanie Anne, Adjunct Instructor, Health and Human Physiology, 2008 (2008); BA 2001 Iowa Wesleyan; MS 2008 Saint Ambrose

Viergutz, Dina Nayeri, Adjunct Lecturer, Economics, 2013 (2013);

Vigil, Gretchen Elizabeth, Clinical Associate Professor, Pediatrics, 2000 (2007); BS 1994 Drake; MD 1997 Iowa

Vigmostad, Sarah Celeste, Assistant Professor, Biomedical Engineering, 2008 (2008); BS 2001 Iowa; MS 2003 Iowa; PhD 2007 Iowa


Vikas, Praveen, Clinical Adjunct Assistant Professor, Internal Medicine, 2012 (2012);

Villamil, Anne Patricia, Professor, Economics, 2013 (2013);

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Vizzini, Robert Charles, Lecturer, Communication Sciences and Disorders, 2010 (2010); BA 1982 Gallaudet; MA 1992 Liberty, VA

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Vogan, Travis Thad, Assistant Professor, American Studies/Journalism Mass Communication, 2012 (2012);

Vogel, Julie M., Clinical Adjunct Assistant Professor, Internal Medicine, 2010 (2010); DO 2006 Des Moines

Vogelgesang, Scott A., Clinical Professor, Internal Medicine, 1995 (2004); BS 1980 Minnesota; MD 1987 South Dakota

Voigt, Michael D., Clinical Professor, Internal Medicine, 1996 (2004); MBCHB 1978 Pretoria-South Africa

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Vollstedt, Keith Alan, Clinical Adjunct Assistant Professor, Surgery, 2008 (2008); MD 1987 Iowa

Vombatkere, Sudhir Gurunandan, Adjunct Associate Professor, International Programs, 2009 (2009); ME 1974 Poona; PHD 1987 Indian Inst, Madras

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Vos, Susan Staggs, Clinical Associate Professor, Pharmacy, 2006 (2013); BS 2000 Tennesee @ Knoxville; PHARM 2003 Tennessee Hlth Sci Cen

Voss, Alex Joseph, Adjunct Instructor, Health and Human Physiology, 2013 (2013);

Voss, Michelle Webb, Assistant Professor, Psychology, 2012 (2012); BS 2004 Illinois-Champaign; MA 2008 Illinois-Champaign; PHD 2011 Illinois-Champaign

Voyce, Stephen Charles, Assistant Professor, English, 2011 (2011); BA 1997 Queen's; MA 2002 Western Ontario; PHD 2009 York

Vyas, Yatin Mahendra, Professor, Pediatrics, 2013 (2013);

Vyverberg, Emily Ann, Adjunct Assistant Professor, Pharmacy Practice and Science, 2011 (2011); PHARM 2009 Iowa

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Wachtel, Ruth E., Associate Professor, Anesthesia, 1988 (1993); BA 1974 Cornell; PHD 1980 Duke


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Wadsworth, John Steele, Associate Professor, Rehabilitation and Counselor Education, 1997 (2006); BA 1980 Iowa; MA 1989 Iowa; PHD 1996 Iowa

Wadwekar, Devendra, Clinical Adjunct Assistant Professor, Internal Medicine, 2007 (2007); MD 1996 B.J. Medical College, India

Wagener, Chadwin J., Adjunct Associate Professor, Operative Dentistry, 2004 (2013); BS 1986 Grandview, Des Moines; DDS 1990 Iowa

Wagner, Michele Louise, Clinical Adjunct Instructor, Nursing, 2000 (2000); MSN 1998 Iowa

Wagoner, Michael D., Professor, Ophthalmology Visual Science, 1999 (1999); BS 1975 Texas; MD 1978 Baylor

Wahle, Andreas, Adjunct Associate Professor, Electrical-Computer Engineering, 2000 (2004); MS 1991 Berlin; PHE 1996 Berlin-Charlottengerg; PHD 1997 Technical Berlin

Wahle, Joann G., Adjunct Instructor, Preventive Community Dentistry, 2002 (2002); DDS 1984 CREIGHTON

Wahle, Steven M., Clinical Adjunct Assistant Professor, Urology, 1999 (1999); MD 1985 Indiana

Wahls, Terry Lynn, Clinical Professor, Internal Medicine, 2000 (2003); BFA 1976 Drake; MD 1982 Iowa; MBA 2001 St. Thomas
Wald, Moshe, Associate Professor, Urology, 2005 (2011); MD 1999 The Hebrew Univ
Walder, Joseph A., Adjunct Professor, Biochemistry, 1978 (1988); PHD 1978 Northwestern
Waldron, Debra Beth, Clinical Professor, Community Behavioral Health/Pediatrics, 2008 (2013); MD 1984 New York Medical; MPH 2005 Minnesota
Waldschmidt, Thomas J., Professor, Pathology, 1988 (1997); BS 1977 Marquette; PHD 1984 Texas-Dallas
Walizer, Benjamin James, Adjunct Instructor, University College Courses, 2014 (2014); HS 2003 Verona HS, Verona, WI; BA 2007 UW-Oshkosh; MED 2009 Clemson University
Walker, Elizabeth Ann, Adjunct Instructor, Communication Sciences and Disorders, 2013 (2013); MA 2002 University of Minnesota
Walker, Jennifer J., Adjunct Assistant Professor, Pharmacy, 2008 (2008); PHARM 2001 South Dakota State
Walker, Jerry D., Emeritus Professor, Pediatric Dentistry, 1968 (1984); BA 1958 Iowa; DDS 1962 Iowa; MA 1969 Iowa
Walker, Kimberlee A., Clinical Adjunct Instructor, Nursing, 2007 (2004); BSN 1996 Marycrest International; BN 1999 Clarkson; MN 1999 Clarkson
Walker, Kristy Platz, Adjunct Lecturer, Health Management Policy, 2012 (2012); BS 1983 University of Iowa; MBA 1992 University of Iowa
Walker, Mary Jo, Adjunct Instructor, Music, 2003 (2003); BA 1976 William Penn; MA 1989 Iowa
Walker, Robert Bruce, Lecturer, Management Organizations, 2014 (2014);
Walker, Roger Dale, Adjunct Professor, Community Behavioral Health, 2014 (2014);
Walkner, Laurie Marie, Adjunct Lecturer, Community Behavioral Health, 2004 (2004); BSN 1980 Iowa; MA 1992 Iowa
Wall, Geoffrey, Clinical Adjunct Assistant Professor, Internal Medicine, 2014 (2014);
Wall, Michael, Professor, Ophthalmology Visual Science/Neurology, 1991 (1996); BS 1972 Tulane; MD 1976 Tulane
Wall, Susan Dale, Clinical Adjunct Associate Professor, Dermatology, 1995 (2000); MD 1981 Missouri
Wall-Saueugling, Kimberly Lynn, Adjunct Assistant Professor, Pharmacy Practice and Science, 2011 (2011);
Wallace, Andrea Schneider, Assistant Professor, Nursing, 2010 (2010); BA 1996 Colorado @ Boulder; DNP 2002 Colorado Denver Health; PHD 2006 Colorado - Denver Health
Wallace, Anne Marie, Clinical Associate Professor, Communication Sciences and Disorders, 1992 (1992); BA 1978 Iowa; MA 1979 Iowa
Wallace, Peter D., Clinical Adjunct Associate Professor, Health Management Policy, 1974 (1989); MD 1969 Iowa
Wallace, Robert B., Professor, Epidemiology/Internal Medicine, 1972 (1979); BS 1964 Northwestern; MD 1967 Northwestern; MSC 1972 State Univ of New York-Buffalo
Walsh, Brian Patrick, Clinical Associate Professor, Neurosurgery, 2014 (2014); AB 1991 Lawrence University; MD 1996 Medical College of Wisconsin
Walsh, Emily O., Adjunct Assistant Professor, Earth and Environmental Sciences, 2010 (2010); PHD 2003 California
Walsh, Thomas, Lecturer, Marketing, 2013 (2003); BS 1979 Eastern Michigan; MBA 1981 Michigan State
Walter, Kathy Brenneman, Lecturer, Health and Human Physiology, 2005 (2006); BS 2002 Iowa; MA 2004 Iowa
Walter, Patrick J., Adjunct Instructor, Pharmacy, 2005 (2005); BSPH 1983 Creighton
Walters, Katherine Susan, Adjunct Lecturer, Anatomy Cell Biology, 2011 (2011); BS 1988 Northern Iowa
Wan, Shaowei, Adjunct Instructor, Pharmacy Practice and Science, 2014 (2014); BS 1998 Shenyang Pharmaceutical Univ; MA 2002 Univ of International Bus Ec
Wanat, Karolyn A., Clinical Assistant Professor, Dermatology/Pathology, 2013 (2013);
Wang, Dongxu, Assistant Professor, Radiation Oncology, 2011 (2011); BSC 2006 Najing University, China; BS 2006 Najing, China; MS 2009 Wisconsin; PHD 2011 Wisconsin
Wang, Jing, Associate Professor, Marketing, 2005 (2012); PHD 2005 Northwestern
Wang, Kai, Professor, Biostatistics, 1999 (2013); BA 1986 Lanzhou; MA 1989 Nankai; MA 1996 Iowa; PHD 1999 Iowa
Wang, Lihe, Emeritus Professor, Mathematics, 1993 (1997); BA 1979 Peking-China; MS 1983 Peking-China; MS 1986 Chicago; PHD 1989 Courant
Wang, Wei-Yeh, Emeritus Professor, Biology, 1975 (1987); BS 1966 National Taiwan; PHD 1972 Missouri
Wannemuehler, Michael J., Adjunct Professor, Microbiology, 2010 (2010); PHD 1981 Louisville
Wanzer-Serrano, Darrel, Assistant Professor, Communication Studies, 2012 (2012);
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Ward, Kelly, Clinical Associate Professor, Obstetrics Gynecology, 2004 (2011); BS 1996 UNI of the Pacific; MD 2000 South Dakota SOM
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Wassink, Thomas Henry, Professor, Psychiatry/Pediatrics, 1999 (2012); BA 1985 Northwestern; MD 1993 Illinois-Chicago

Wastyn, Linda, Lecturer, Journalism Mass Communication, 2013 (2014);

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Watson, David B., Emeritus Professor, Psychology, 1993 (1993); BS 1975 Santa Clara; PHD 1982 Minnesota


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Webster, Stuart Kent, Adjunct Professor, Accounting, 2013 (2013);

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Weeks, Daniel L., Professor, Biochemistry/Pediatrics, 1987 (2001); BS 1976 Purdue; PHD 1983 Purdue

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Weenig, Duane Robert, Adjunct Assistant Professor, Periodontics, 2009 (2009); BS 1991 Brigham Young; DDS 1999 Iowa; MS 2002 Iowa

Weest-Carrasco, Pam, Adjunct Assistant Professor, Music, 2013 (2013);

Weetman, David Brian, Adjunct Assistant Professor, Pharmacy, 1997 (1997); BSPH 1991 Iowa; BS 1991 Iowa; MS 1995 Johns Hopkins

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Weiler, Kay Boese, Emeritus Associate Professor, Nursing, 1982 (1995); BS 1972 Indiana; JD 1985 Iowa; MA 1986 Iowa

Weinberger, Miles, Professor, Pediatrics, 1975 (1980); BA 1960 Pittsburgh; MD 1965 Pittsburgh

Weiner, George J., Professor, Internal Medicine, 1989 (2000); BA 1978 Johns Hopkins; MD 1981 Ohio State

Weiner, Joshua, Associate Professor, Psychiatry/Biology, 2004 (2011); BA 1992 Northwestern; PHD 1999 California


Weinkauf, Adam, Adjunct Assistant Professor, Pharmacy Practice and Science, 2013 (2013);

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Welsh, Michael James, Professor, Physiology/Internal Medicine/Neurosurgery, 1981 (1987); BS 1970 Iowa; MD 1974 Iowa

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Westermann, Shawna Jane, Clinical Assistant Professor, Internal Medicine, 2008 (2009); BS 1989 Central; MD 1996 Iowa; PHD 1996 Iowa

Westfall, Ruth Ellen, Lecturer, Spanish Portuguese, 2005 (2012); BA 1984 Iowa; MA 1987 Indiana; PHD 1995 Texas @ Austin
Westlund, Kurt Jeffrey, Adjunct Associate Professor, Oral Maxillofacial Surgery, 1990 (1990); MS 1989 Iowa
Weston, Burns H., Emeritus Professor, Law-Faculty, 1966 (1969); BA 1956 Oberlin; LLB 1961 Yale; SJD 1973 Yale
Wetlauffer, Gerald, Emeritus Professor, Law-Faculty, 1985 (1991); BA 1967 Princeton; JD 1972 Yale
Wetrich, Doug, Adjunct Instructor, Pharmacy, 2002 (2002); BS 1988 Iowa
Wever, William, Adjunct Instructor, Preventive Community Dentistry, 2003 (2003); BA 1991 Iowa; DDS 2002 Iowa
Weydert, Jamie Allen, Clinical Adjunct Assistant Professor, Pathology, 2005 (2005); BS 1996 Iowa; MD 2001 Iowa
Weyer, Peter J., Adjunct Associate Professor, Geographical and Sustainability Sciences/Occupational Environmental Health, 2000 (2013); BA 1974 Iowa; MS 1987 Iowa; PHD 1998 Iowa
Whaley, Deborah Elizabeth, Associate Professor, African-American Studies/American Studies, 2007 (2011); PHD 2002 Kansas
Wheaton, Natasha Bosma, Clinical Assistant Professor, Emergency Medicine, 2013 (2013);
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Whipple, Bradley Dale, Adjunct Instructor, Social Work, 2011 (2011); BA 2005 Spring Arbor; MSW 2009 Iowa
Whiston, John Booker, Clinical Professor, Law-Faculty, 1994 (2006); BA 1970 Yale; JD 1984 Montana
White, Brian Alan, Adjunct Associate Professor, Health Management Policy, 2007 (2013); BA 1999 Iowa; JD 2002 Iowa
White, Jerrold Lee, Clinical Adjunct Assistant Professor, Family Medicine, 1994 (1994); MD 1987 Iowa
White, Katherine Margaret, Clinical Assistant Professor, Internal Medicine, 2012 (2012);
White, Pamela J., Adjunct Assistant Professor, Law-Faculty/Art History, 2000 (2000); BA 1973 Graceland; JD 1978 Missouri-Kansas City; MA 1984 Kansas; PHD 1991 Kansas
White, Robert Thomas, Adjunct Instructor, Preventive Community Dentistry, 2005 (2005); BA 1987 Wartburg; DDS 1991 Iowa
White, Susan Chrysler, Professor, Art History, 2000 (2014); BA 1977 California-Berkeley; MFA 1980 California-Davis
Whitehill, Dawn Marie Marcellus, Adjunct Associate Professor, Pharmacy, 2008 (2008); PHARMD 2001 Iowa
Whiteman, Charles H., Emeritus Professor, Economics, 1980 (1992); BA 1975 Kansas; PHD 1981 Minnesota
Whiteman, D. Bruce, Adjunct Lecturer, Interdisciplinary Programs, 2012 (2012);
Whiteside, Douglas M., Clinical Professor, Psychiatry, 2014 (2014);
Whitten, Blake, Lecturer, Statistics Actuarial Science/Economics, 2004 (2007); BS 1983 NORTHERN AZ; MS 1992 WISCONSIN; PHD 2001 Florida State
Whitter, Tyrone Bruce, Clinical Associate Professor, Anesthesia, 1995 (2000); BS 1982 Rochester; PHD 1988 University of Iowa; MD 1991 University of Iowa
Wibbenmeyer, Lucy A., Clinical Associate Professor, Surgery, 1997 (2008); BA 1987 Missouri-Columbia; MD 1991 Tennessee
Wiblin, Raymond Todd, Clinical Associate Professor, Internal Medicine, 1996 (2004); MD 1990 Case Western Reserve
Wichman, Michael D., Adjunct Assistant Professor, Occupational Environmental Health, 2000 (2000); BS 1976 Iowa Western Community College; BS 1978 Creighton; MS 1980 Creighton; PHD 1984 Kansas State
Wicklund, Gary A., Emeritus Associate Professor, Management Sciences, 1967 (1973);
Wickman, Lynette Kay, Adjunct Assistant Professor, Pharmacy Practice and Science, 2010 (2012); BA 2006 Coe; PHARMD 2010 Iowa; PHD 2010 Iowa
Widen, Michael Dean, Adjunct Instructor, Health and Human Physiology, 2007 (2007); BS 1997 Iowa; MA 2000 Iowa
Wiebel, Cara Christine Dehekker, Adjunct Instructor, University College Courses/University College, 2013 (2013);
Wieck, Charlotte, Adjunct Assistant Professor, Psych Quant Foundations, 2015 (2015);
Wiedenfeld, Sara, Clinical Assistant Professor, Pharmacy, 2007 (2014); PHD 2007 Drake; PHARMD 2007 Drake
Wieland, Julie A., Adjunct Instructor, Communication Sciences and Disorders, 2012 (2012); BA 1988 University of Iowa; MA 1990 University of Northern Iowa; DR 2004 Arizona School of Health Scie
Wiemer, David F., Professor, Chemistry/Pharmacology, 1978 (1989); BS 1972 Marquette; PHD 1976 Illinois
Wiese, Chad Michael, Adjunct Assistant Professor, Family Dentistry, 2011 (2011); DDS 2003 Iowa
Wieting, Stephen George, Emeritus Associate Professor, Sociology, 1971 (1977); BA 1962 Whitworth; BD 1965 Princeton Theological Seminary; PHD 1971 Minnesota
Wiggins, Tabitha Nicole, Adjunct Lecturer, University College, 2013 (2013); HS 2004 W.M. Young Magnet HS - Chicago; BA 2009 Western Illinois, Macomb, IL; MS 2011 Univ of Central Missouri
Wilbur, Jason K., Clinical Associate Professor, Family Medicine, 2003 (2006); BS 1995 Missouri-Columbia; MD 1999 Saint Louis
Wilgenbusch, Tammy Lynn Vinzant, Adjunct Assistant Professor, Psych Quant Foundations, 2010 (2010); MA 1997 Mankato State; PhD 2002 IOWA

Wilkinson, Krista Joi, Adjunct Assistant Professor, Pharmacy Practice and Science, 2011 (2011); PHARMD 2010 Purdue


Willard, Andrew, Adjunct Instructor, University College Courses, 2014 (2014); AB 1975 Stanford

Willard, Derek Hunt, Emeritus Associate Professor, Preventive Community Dentistry, 1974 (1981); BA 1964 Rhode Island; MA 1968 Pennsylvania; PhD 1975 Iowa

Willard, Pamela H., Emeritus Assistant Professor, Occupational Environmental Health/Nursing, 1982 (1998); BSN 1966 Cornell-New York; MS 1979 Iowa

Willenborg, Melissa, Clinical Assistant Professor, Orthopaedics and Rehabilitation, 2012 (2012);

Williams, Chad L., Emeritus Associate Professor, Internal Medicine, 1973 (1983); BA 1964 Wabash; MD 1968 Iowa

Williams, Charles J., Adjunct Lecturer, Law-Faculty, 2001 (2001); BBA 1985 Iowa; JD 1988 Iowa; LLM 1997 Missouri

Williams, Glenn, Associate Professor, Physical Therapy/ Orthopaedics and Rehabilitation, 2003 (2012); BA 1991 Kings College, Briarcliff; MPT 1994 Baylor; PhD 2004 Delaware

Williams, Glenys O., Emeritus Professor, Family Medicine, 1974 (1989); BSC 1950 Wales; MBBCH 1953 Welsh Nat School of Med

Williams, Janet Karen Day, Professor, Nursing, 1969 (2002); BSN 1968 Iowa; MA 1972 Iowa; PHD 1989 Iowa

Williams, Kristin Kelly, Adjunct Assistant Professor, Pharmacy Practice and Science, 2011 (2011); PHARMD 2000 Drake

Williams, Kristine Elise, Lecturer, Biology, 2001 (2011); BA 1992 Grinnell College; MS 2001 IOWA

Williams, Kristine Nordlie, Professor, Nursing, 2012 (2012);

Williams, Michael J., Adjunct Instructor, Pharmacy, 2008 (2008); BSPH 1996 Ferris State

Williams, Nancy Ann, Clinical Professor, Psychiatry, 1998 (2011); BS 1989 Iowa State; MD 1990 Iowa

Williams, Norman E., Emeritus Professor, Biology, 1957 (1967); BA 1952 Youngstown; MS 1954 Brown

Williams, Rachel Marie-Crane, Associate Professor, Teaching and Learning/Art Art History/Gender, Women's and Sexuality Studies, 1999 (2005); BFA 1993 East Carolina; MFA 1995 Florida State; PHD 1999 Florida State

Williams, Terence H., Emeritus Professor, Anatomy Cell Biology, 1973 (1973); MD 1953 Manchester-England; PHD 1960 Wales

Williams, Vincent D., Emeritus Professor, Family Dentistry, 1972 (1991);

Williamson, Ann Marie, Clinical Adjunct Professor, Nursing, 2008 (2008); BSN 1978 North Carolina-Chapel Hill; MSN 1985 Texas - Austin; PhD 1999 California - San Fran

Williamson, Anne Elizabeth, Associate Professor, Endodontics, 2003 (2007); BS 1984 Nebraska; DDS 1988 Nebraska; CER 2003 University of Iowa; MSD 2004 University of Iowa

Williamson, H. E., Emeritus Professor, Pharmacology, 1960 (1970); BS 1953 Wisconsin; PHD 1959 Wisconsin

Williamson, Richard Alan, Clinical Associate Professor, Family Dentistry, 2001 (2008); BS 1976 Texas A M; DDS 1980 Texas; MS 2001 Nebraska


Williamson, Thomas Calvin, Adjunct Assistant Professor, Preventive Community Dentistry, 2007 (2007); DDS 1991 Iowa

Willour, Virginia Lea, Associate Professor, Psychiatry, 2011 (2011); BS 1992 Michigan; PHD 1998 Stanford

Wilson, Brent David, Adjunct Professor, Finance, 2009 (2009); BA 1969 Weber State; MBA 1971 Northwestern; DBA 1971 Northwestern

Wilson, Christopher G., Adjunct Assistant Professor, Civil-Environmental Engineering, 2011 (2011); PHD 2004 Case Western Reserve Univ.

Wilson, Elizabeth Marie, Adjunct Instructor, Pharmacy Practice and Science, 2013 (2013);

Wilson, Jeffrey Scott, Clinical Professor, Internal Medicine, 1989 (2003); BS 1978 Iowa; MD 1983 Iowa

Wilson, Jessica Hope, Adjunct Lecturer, Management Organizations, 2012 (2012); BA 2004 Brown University

Wilson, John Thurlow, Emeritus Associate Professor, Teaching and Learning, 1973 (1977); BA 1959 Northern Colorado; MA 1962 Northern Colorado; PhD 1973 Florida

Wilson, Mark Cooper, Clinical Professor, Medicine Administration/Internal Medicine, 2004 (2004); BA 1981 Westminster; MD 1985 Texas Tech; MPH 1991 Johns Hopkins

Wilson, Mary Edythe, Professor, Internal Medicine/ Microbiology/International Programs/Epidemiology, 1986 (1997); BA 1975 Carleton; MD 1980 Rochester

Wilson, Saul, Assistant Professor, Neurosurgery, 2011 (2012); MD 2003 Louisiana State

Wilson, Scott Robert, Clinical Professor, Internal Medicine, 2000 (2006); BS 1981 Fairfield; DO 1986 Des Moines Osteopathic

Wilson, Sherree A., Adjunct Assistant Professor, Education Policy Leadership Studies, 2014 (2014);

Wilson, Thad Rahn, Clinical Professor, Nursing, 2013 (2013);
Wilson, Thomas, Adjunct Instructor, Preventive Community Dentistry, 1989 (1989); DDS 1987 Iowa

Wilson Kimber, Marian, Associate Professor, Music, 2004 (2004); BA 1983 NC Greensboro; MM 1989 Florida State; PhD 1993 Florida State

Wilson Peters, Virginia Lee, Adjunct Lecturer, Management Organizations, 2002 (2002); MBA 1995 Iowa

Windschitl, Paul D., Professor, Psychology, 1997 (2009); BA 1991 Creighton; MS 1993 Iowa State; PhD 1996 Iowa State

Winet, Jon, Professor, Art Art History/International Programs, 2002 (2014); MA 1979 San Francisco State; BA 1979 California-Berkeley

Wing, Adrien K., Professor, Law-Faculty/International Programs, 1987 (1993); AB 1978 Princeton; MA 1979 California-Los Angeles; JD 1982 Stanford

Winga, Edward R., Clinical Adjunct Assistant Professor, Internal Medicine, 1982 (1991); MD 1962 Iowa

Winkler, Mark Alan, Adjunct Lecturer, Marketing, 2012 (2012); BS 1979 Shippensburg University, PA; MBA 2001 The University of Iowa

Winn, Bryon Stephen, Professor, Theatre Arts, 1995 (2011); BA 1992 Weber State; MFA 1995 Iowa

Winn, Richard, Adjunct Professor, Neurosurgery, 2010 (2010); MD 1968 Pennsylvania

Winnike, Rebecca Jane, Clinical Assistant Professor, Obstetrics Gynecology, 2015 (2015);

Winokur, Patricia Lee, Professor, Medicine Administration/Internal Medicine, 1993 (2009); BA 1981 Brown; MD 1985 Washington-St. Louis

Winter, Allison Ann, Adjunct Instructor, Preventive Community Dentistry, 2001 (2001); BS 1981 University of Iowa

Witry, Matthew John, Assistant Professor, Internal Medicine/Pharmacy Practice and Science, 2014 (2014);

Witt, Doris S., Associate Professor, English, 1994 (2001); BA 1984 Centre; MA 1987 Virginia; PhD 1995 Virginia

Witte, Suzanne Bakke, Adjunct Instructor, Social Work, 2005 (2005); BA 1985 Iowa; MSW 1990 Iowa

Wittenberg, Craig, Clinical Adjunct Associate Professor, Family Medicine, 2004 (2004); BA 1987 Iowa; MD 1991 Iowa

Wittenberg, David H., Associate Professor, English/Cinema Comparative Literature, 1998 (2004); BA 1987 Yale; MA 1989 Northwestern; PhD 1995 Johns Hopkins; MARCH 1996 Univ of California, Berkeley

Witzke, Brian J., Adjunct Associate Professor, Earth and Environmental Sciences, 1982 (1995); BA 1974 Wisconsin-Milwaukee; MS 1976 Iowa; PhD 1981 Iowa

Wocher, John, Adjunct Instructor, Health Management Policy, 1994 (2014); BA 1991 Maryland

Woerner, Robert F., Emeritus Associate Professor, English, 1957 (1966);

Wohlgenannt, Markus, Associate Professor, Physics Astronomy, 2002 (2008); MS 1997 Graz-Austria; PhD 2000 Utah

Wojciak, Armeda Jean, Assistant Professor, Rehabilitation and Counselor Education, 2014 (2014);

Wold, Marc S., Professor, Biochemistry/Radiation Oncology, 1989 (2000); BS 1979 California Inst of Technology; PhD 1984 Johns Hopkins

Wolf, Anthony David, Assistant Professor, Military Science, 2005 (2005); BGS 1987 Iowa; AA 1995 Kirkwood Community; MA 2002 Iowa

Wolf, Brian Robert, Associate Professor, Orthopaedics and Rehabilitation/Physical Therapy, 2003 (2011); BA 1989 Loyola; MD 1997 Loyola; MS 2006 Iowa

Wolf, Karen Kay Maxfield, Adjunct Assistant Professor, Periodontics, 2005 (2005); DDS 1998 Iowa

Wolf, Margery, Emeritus Professor, Gender, Women's and Sexuality Studies/Anthropology, 1985 (1985);

Wolfe, Katherine, Associate Professor, Music, 2004 (2004); BM 1992 Indiana; MM 1994 Manhattan School of Music

Wolfe, Steven L., Emeritus Professor, Family Medicine, 2001 (2008); BA 1968 Cornell; MD 1976 Iowa

Wolfsen, Sara C., Emeritus Associate Professor, Educ Policy Leadership Studies, 1971 (1977); BS 1957 Appalachian State; MS 1962 North Carolina; EDD 1971 Houston

Wolfsen, Sherwood, Emeritus Associate Professor, Oral Maxillofacial Surgery, 1971 (1976); BS 1953 Westminster; DDS 1957 Pittsburgh

Wolinsky, Fredric D., Professor, Health Management Policy/Nursing/Internal Medicine, 2003 (2003); BA 1972 Friends UNI; MA 1974 Drake; PhD 1977 Southern Illinois

Wolken, Stephen H., Clinical Adjunct Assistant Professor, Ophthalmology Visual Science, 1975 (1996); MD 1968 Iowa

Wolt, Jeffrey D., Adjunct Professor, Epidemiology, 2013 (2013);

Wolterman, Courtney, Adjunct Instructor, Preventive Community Dentistry, 2014 (2014);

Wong, John Kong-Fah, Adjunct Associate Professor, Marketing, 2014 (2014);

Wong, Pamela Florence, Adjunct Assistant Professor, Pharmacy Practice and Science, 2013 (2013); BA 2008 University of Iowa

Wood, Kelly Elizabeth, Clinical Assistant Professor, Pediatrics, 2010 (2010); BS 2000 Iowa; MD 2004 Iowa

Wood, Shari M., Adjunct Instructor, Pharmacy, 2000 (2000); BS 1993 Iowa; BSpH 1993 Iowa

Wood, Susannah Margaret, Associate Professor, Rehabilitation and Counselor Education, 2006 (2012); BA 1997 Richmond(VA); MED 2000 William Mary; PhD 2006 William Mary

Woodard, Fredrick, Emeritus Associate Professor, English, 1973 (1979); BA 1961 Iowa Wesleyan; MA 1971 Iowa; PhD 1976 Iowa

Woodhead, Jerold C., Associate Professor, Pediatrics, 1979 (1988); BA 1967 Stanford; MD 1971 Yale
Woodman, Catherine L., Associate Professor, Family Medicine/Psychiatry, 1990 (2000); BA 1981 Brown; MD 1985 Brown

Woods, Anna Marie, Adjunct Instructor, Preventive Community Dentistry, 2013 (2013);

Woods, Kenneth Todd, Adjunct Instructor, Radiology, 2013 (2013); BS 1990 Medical College of Georgia

Woods-Groves, Suzanne, Associate Professor, Teaching and Learning, 2008 (2014); BS 1998 Auburn; MED 1999 Auburn; PHD 2007 Auburn

Woods-Jaeger, Briana A., Adjunct Assistant Professor, Community Behavioral Health, 2012 (2012);

Woods-Swafford, Wendy, Clinical Adjunct Assistant Professor, Pediatrics, 2009 (2009); MD 2002 Missouri - KC; MPH 2008 Vanderbilt

Woodworth, George, Emeritus Professor, Statistics Actuarial Science/Biostatistics, 1971 (1996); BA 1962 Carleton; PHD 1966 Minnesota


Workman, Douglas M., Clinical Adjunct Assistant Professor, Family Medicine, 1995 (2001); MD 1989 Iowa

Worrell, James B., Emeritus Associate Professor, Neurology, 2001 (2001); BA 1964 Iowa; MD 1967 Iowa

Wortman, Gloria Deanne, Adjunct Assistant Professor, Art Art History, 2012 (2012);

Wretman, Debra, Adjunct Lecturer, Teaching and Learning, 2015 (2014);

Xia, Junyi, Assistant Professor, Radiation Oncology, 2011 (2011); BS 1996 Xhe Jian, China; MS 2003 Memphis; PHD 2009 Florida

Xia, Ting, Adjunct Assistant Professor, Biomedical Engineering, 2009 (2014); PHD 2007 Iowa

Xia, Shaoqing, Associate Professor, Mechanical Engineering, 2003 (2008); BS 1995 Univ of Science and Tech China; MS 1998 Univ of Science and Tech China; PHD 2002 Northwestern

Xing, Yi, Adjunct Associate Professor, Internal Medicine, 2006 (2012); BE 2000 Univ of Science and Tech China; BS 2001 Univ of Science and Tech China; PHD 2006 UCLA

Xiong, Jinhui, Associate Professor, Radiology/Biomedical Engineering, 2003 (2003); MEE 1986 Tsinghua Beijing; PHD 1995 Texas

Xu, Weiyu, Assistant Professor, Electrical-Computer Engineering, 2011 (2011); MS 2005 Tsinghua,(Beijing); MS 2006 Cal Tech; PHD 2008 Cal Tech

Xue, Hai-Hui, Associate Professor, Microbiology, 2006 (2012); MD 1991 China Medical; MS 1994 China Medical; PHD 2000 Hamamatsu

Yablon, Nicholas, Associate Professor, American Studies, 2003 (2009); BA 1994 Birmingham, England; PHD 2002 Chicago

Yack, H. John, Associate Professor, Physical Therapy, 1994 (1994); BS 1973 New Hampshire; MS 1981 North Carolina; PHD 1987 Waterloo-Canada

Yager, Robert E., Emeritus Professor, Teaching and Learning, 1956 (1967); BA 1950 Iowa State; MS 1953 Iowa; PHD 1957 Iowa

Yahr, Timothy Lee, Professor, Microbiology, 2001 (2013); BS 1991 Wisconsin-Stevens Point; MS 1995 Medical College of Wisconsin; PHD 1998 Medical College of Wisconsin

Yang, Elizabeth Esther, Adjunct Assistant Professor, Interdisciplinary Programs, 2014 (2014);

Yamada, Thoru, Emeritus Professor, Neurology, 1975 (1984); MD 1966 Nagoya
Yang, Jianming, Adjunct Associate Professor, Mechanical Engineering, 2007 (2011); PHD 2004 Maryland

Yang, Jingzhen, Adjunct Associate Professor, Community Behavioral Health, 2004 (2010); BA 1982 Suzhou, China; MPH 1999 Indiana; PHD 2004 North Carolina

Yang, Limin, Clinical Assistant Professor, Radiology, 2010 (2010); MD 1987 Beijing Medical, China; MS 1990 Peking Union, China; PHD 1996 Peking Union, China

Yang, Ling, Assistant Professor, Anatomy Cell Biology, 2014 (2014);

Yang, Shujie, Assistant Professor, Obstetrics Gynecology, 2013 (2013); PHD 2004 Johns Hopkins University

Yang, Tianbao, Assistant Professor, Computer Science, 2014 (2014);

Yankowitz, Jerome, Emeritus Professor, Obstetrics Gynecology, 1993 (2003); BS 1980 Yale; MD 1986 State U of NY-Dwnst Med Cntr


Yao, Tong, Associate Professor, Finance, 2008 (2013); BA 1991 Fudan; PHD 2001 Boston College

Yarahmadi, Alireza, Clinical Adjunct Assistant Professor, Neurology, 2011 (2011);

Yarbrough, Donald B., Professor, Educ Policy Leadership Studies/Psych Quant Foundations, 1982 (2009); BA 1971 Hendrix; MA 1973 Kentcuy; PHD 1982 Georgia

Ye, Guibo, Lecturer, Mathematics, 2012 (2013);

Ye, Yangbo, Professor, Mathematics, 1990 (1999); BS 1981 QingHua-China; MA 1982 Columbia; PHD 1986 Columbia;

Yeager, Anson, Clinical Adjunct Assistant Professor, Surgery, 2004 (2004); BA 1976 Augustana; BS 1978 South Dakota MED; MD 1980 Tufts Med, MA

Yeager, Rebecca, Lecturer, English as Second Language, 2012 (2012);

Yeake, Gregory J., Adjunct Assistant Professor, Pharmacy, 2005 (2005); BSPH 1974 Drake

Yeaman, Charles A., Associate Professor, Internal Medicine/Anatomy Cell Biology, 2001 (2006); BS 1986 Calif-San Diego; PHD 1993 Wisconsin

Yeates, Randhall Robert, Adjunct Instructor, Pharmacy, 2009 (2009); BSPH 1986 Iowa; MBA 1998 Iowa

Yeats, Robert Evan, Emeritus Associate Professor, Music, 1973 (1981); BS 1966 Ithaca; MA 1971 Iowa; MFA 1977 Iowa

Yeh, Malcolm H., Clinical Associate Professor, Neurology, 1992 (2004); BA 1980 Calif-Berkeley; MD 1985 Calif-Davis

Yerkes, Lawrence John, Adjunct Instructor, Interdisciplinary Programs, 1983 (1983);

Yi, Kai, Adjunct Assistant Professor, Physics Astronomy, 2014 (2014); PHD 2004 Johns Hopkins University

Yin, Youbing, Adjunct Assistant Professor, Mechanical Engineering, 2011 (2011); PHD 2011 Iowa

Yockey, Joseph W., Associate Professor, Law-Faculty, 2010 (2010); BA 2000 Kansas; JD 2004 Illinois

Yockey, Joseph W., Adjunct Assistant Professor, History, 2000 (2000); BA 1988 Iowa; MA 1989 Chicago; PHD 1999 Chicago

Yoder, Holly Blosser, Adjunct Lecturer, Honors Program, 2010 (2010); BA 1985 Eastern Mennonite; MA 2009 Iowa

Yoder, Reagan Lee, Adjunct Assistant Professor, Art Art History, 2001 (2001); BA 1971 Bethel; MA 1985 Iowa; MFA 1987 Iowa

Yoder Dowden, Amy Melinda, Clinical Assistant Professor, Internal Medicine, 2007 (2008); BA 2000 Missouri-Kansas; MD 2000 Missouri-Kansas

Yohe, William Tyson, Adjunct Assistant Professor, Pharmacy Practice and Science, 2010 (2010); PHARMD 2000 Iowa

Yoon, Sang-Seok, Lecturer, Asian Slavic Languages Literature, 2012 (2012);

Yorek, Mark A., Professor, Internal Medicine, 1987 (2002); BS 1976 Bemidji; PHD 1981 North Dakota

York, Doughas Kent, Adjunct Instructor, Emergency Medicine, 2009 (2009); AA 1979 Des Moines Community

Yost, William J., Clinical Adjunct Professor, Internal Medicine, 1997 (2010); MD 1988 Iowa

Young, Dan, Adjunct Instructor, Preventive Community Dentistry, 2011 (2011); DMD 2008 Nova Southeastern

Young, Donald Carleton, Clinical Adjunct Assistant Professor, Obstetrics Gynecology, 2009 (2009); BA 1981 Drake; DO 1985 Des Moines University

Young, James R., Emeritus Assistant Professor, Family Medicine, 1976 (2002); BS 1967 Iowa State; MD 1970 Iowa

Young, Joann L., Adjunct Instructor, Social Work, 1998 (1998); MA 1974 Drake

Young, Lance B., Adjunct Assistant Professor, Communication Studies/Preventive Community Dentistry, 2008 (2008); BA 1989 Duke; MBA 1991 Tulane; MA 1996 West Florida

Young, Mark A., Associate Professor, Chemistry, 1990 (1997); BA 1979 Princeton; PHD 1987 California-Berkeley

Young, Nathan Cline, Adjunct Assistant Professor, Civil-Environmental Engineering, 2008 (2008); BSE 1998 Iowa; MS 2000 Iowa; PHD 2006 Iowa

Young, Rachel, Assistant Professor, Journalism Mass Communication, 2013 (2013);

Youngblood, Dawn Michelle, Adjunct Assistant Professor, Pharmacy, 2008 (2008); PHARMD 1998 Iowa

Yousufuddin, Mohammed, Clinical Adjunct Assistant Professor, Internal Medicine, 2010 (2010); MBBS 1980 Osmania Medical India

Yu, Liping, Adjunct Professor, Biochemistry, 2014 (2014); BS 1982 Southern Yangtze Univ, China; MS 1985 Univ. of California Davis; PHD 1989 Univ. of California Davis

Yuen, Kee-Ho, Professor, Art Art History, 2000 (2009); BA 1983 Chinese of Hong Kong; MA 1988 Iowa; MFA 1989 Iowa

Zabner, Joseph, Professor, ICTS - Pilot Studies/Internal Medicine, 1995 (2004); MD 1987 UnivCentral de Venezuela

Zadeii, Gholam Reza, Clinical Adjunct Associate Professor, Internal Medicine, 2004 (2014); BA 1978
Incarnate Word College; MS 1980 Incarnate Word College; MD 1984 Santiago U School of Medicine

Zaharis, Catherine Ann, Adjunct Lecturer, Finance, 2010 (2010); BBA 1982 Iowa; MBA 1983 Drake

Zaheer, Asgar, Associate Professor, Neurology, 1995 (2011); PHD 1979 Bombay-India

Zahr, Firas, Clinical Assistant Professor, Internal Medicine, 2013 (2013);

Zaiger, Laurie, Adjunct Lecturer, Teaching and Learning, 2015 (2014);

Zajacz, Rita, Assistant Professor, Communication Studies, 2005 (2005); BA 1995 Budapest, Hungary; MA 1998 Indiana; PHD 2005 Indiana

Zakharia, Youssef, Clinical Assistant Professor, Internal Medicine, 2014 (2014);

Zalenski, Anne Whitehead, Adjunct Assistant Professor, Rehabilitation and Counselor Education, 2009 (2012); MA 1985 Iowa; PHD 2001 Iowa

Zaloznaya, Marina, Assistant Professor, Sociology, 2012 (2012);

Zamba, Gideon Kd, Associate Professor, Biostatistics, 2003 (2012); MS 1995 DU Benin; PHD 2003 Minnesota

Zavala, Donald, Emeritus Professor, Internal Medicine, 1969 (1976);

Zavazava, Nicholas, Professor, Internal Medicine/Biomedical Engineering, 2001 (2003); BSC 1980 ZIMBABWE; MBCHB 1987 Kiel; MD 1988 Kiel; PHD 1993 Kiel

Zearley, Jennifer Rose, Adjunct Assistant Professor, Pharmacy, 2009 (2009); PHARMD 2002 Iowa

Zebrowski, Patricia, Professor, Communication Sciences and Disorders, 1988 (2009); BS 1977 State Univ of NY-Genesee; MS 1981 Syracuse; PHD 1987 Syracuse

Zeithamel, Marcia C., Adjunct Assistant Professor, Pharmacy, 2008 (2008); PHARMD 2005 Kansas

Zellmer, Kimberly Anna, Adjunct Assistant Professor, Pharmacy Practice and Science, 2011 (2011); PHARMD 2008 Iowa

Zeman, Christine Lynn, Adjunct Assistant Professor, Pharmacy, 2008 (2008); PHARMD 2000 Iowa

Zepeda-Orozco, Diana, Clinical Assistant Professor, Pediatrics, 2012 (2012);

Zepeski, Kay Ilene, Adjunct Instructor, Pharmacy, 1998 (1998); BS 1981 Iowa

Zhai, Guangshu, Adjunct Assistant Professor, Civil-Environmental Engineering, 2012 (2012); PHD 2008 RCEES Chinese Academy of Science

Zhan, Fenghuang, Professor, Internal Medicine, 2012 (2012);

Zhang, Hantao, Professor, Computer Science, 1988 (2000); BS 1981 Wuhan-China; PHD 1984 Nancy-France; PHD 1988 Rensselaer Polytechnic-France

Zhang, Qin, Assistant Professor, Marketing, 2009 (2009); MS 2000 Washington - St. Louis; PHD 2002 Washington - St. Louis

Zhang, Quanjiang, Assistant Professor, Internal Medicine, 2013 (2013);

Zhang, Weizhou, Assistant Professor, Pathology/Radiation Oncology, 2012 (2012);

Zhang, Xiaoyi, Associate Professor, Mathematics, 2009 (2012); BA 1998 Zheng Zhou, China; PHD 2003 China Academy

Zhang, Ying J., Adjunct Professor, Biostatistics, 2004 (2010); BS 1985 Fudan-China; MS 1988 Fudan-China; MS 1994 Florida State; PHD 1998 Washington

Zhang, You-Kuan, Professor, Civil-Environmental Engineering/Earth and Environmental Sciences, 1993 (2006); BS 1978 Chamgchun Institute-China; MS 1982 Nanjing-China; PHD 1990 Arizona

Zhao, Chen, Assistant Professor, Pathology, 2014 (2014);

Zhao, Kang, Assistant Professor, Management Sciences, 2012 (2012);

Zhao, Xiaoyuan, Lecturer, Asian Slavic Languages Literature, 2008 (2008); MA 2008 Memphis

Zhorne, Derek James, Clinical Assistant Professor, Pediatrics, 2014 (2014);

Zhorn, Leah Marie, Clinical Assistant Professor, Pediatrics, 2014 (2014);

Zhou, Xun, Assistant Professor, Management Sciences, 2014 (2014);

Zhu, Jing, Lecturer, Teaching and Learning, 2014 (2014);

Zhu, Xi, Assistant Professor, Health Management Policy, 2011 (2011); BS 2000 East China Univ; MS 2003 East China Univ; PHD 2011 Minnesota

Zhu, Xiaodong, Assistant Professor, Internal Medicine, 2012 (2012);

Zhupanska, Olesya I., Associate Professor, Mechanical Engineering, 2007 (2013); MS 1996 Kiev Taras Schevchenk; PHD 2000 Kiev Taras Schevchenk

Zhuraw, Sean, Adjunct Assistant Professor, Business Administration-Undergraduate, 2014 (2014);

Ziebart, Nicolas L., Assistant Professor, Economics, 2012 (2012);

Ziegler, Ekhard E., Professor, Pediatrics, 1973 (1981); MD 1964 Innsbruck-Austria

Zike, Wilbur L., Emeritus Associate Professor, Surgery, 1969 (1975); AB 1953 Houghton; MD 1957 McGill

Zilio, Silvia, Adjunct Lecturer, French Italian, 2013 (2013);

Zimmer, John, Adjunct Instructor, Preventive Community Dentistry, 2012 (2012);

Zimmerman, Dale, Professor, Statistics Actuarial Science/Biostatistics, 1986 (1999); BS 1980 Iowa State; MS 1982 Minnesota; PHD 1986 Iowa State

Zimmerman, Miriam Bridget, Clinical Professor, Biostatistics, 2003 (2008); BS 1978 Phillips; MS 1982 Phillips; MS 1984 Iowa State; PHD 1987 Iowa State

Zimmermann, Gerald Neal, Adjunct Associate Professor, Communication Sciences and Disorders, 1977 (1982); PHD 1973 Iowa
Zingman, Leonid, Associate Professor, Internal Medicine, 2007 (2014); MD 1984 First Leningrad Medical

Ziuchkarski, Kirsten, Adjunct Instructor, Preventive Community Dentistry, 2011 (2011); BA 1998 Colorado; DDS 2003 Colorado

Zlab, Mark K., Clinical Adjunct Assistant Professor, Otolaryngology-Head Neck Surgery, 1998 (1998); MD 1985 Nebraska

Zlatnik, Frank J., Emeritus Professor, Obstetrics Gynecology, 1975 (1984); BA 1962 Carleton; MD 1966 Cornell

Zmolek, Michael A., Lecturer, History/Division of Interdisciplinary Program, 2013 (2014);

Zubow, Lauren Faith Danna, Clinical Adjunct Instructor, Communication Sciences and Disorders, 2014 (2014); MS 2006 University of Iowa

Zukin, Jane, Adjunct Instructor, University College Courses, 2007 (2014); BA 1970 Wayne State; MA 1997 Eastern Michigan

Zurbriggen, Thomas L., Clinical Adjunct Instructor, Internal Medicine, 1982 (1988); MD 1978 Iowa

Zweng, Marilyn J., Emeritus Professor, Mathematics/Teaching and Learning, 1965 (1972); BS 1953 Michigan State; MS 1957 Wisconsin; PHD 1963 Wisconsin
Iowa Administrative Code

The Code of Iowa contains information about admission and residency rules common to Iowa's three state universities—the University of Iowa, Iowa State University, and the University of Northern Iowa. It also provides supplemental information about application to the University of Iowa. Visit Iowa Code on the Iowa Legislature web site to search and read the Iowa Administrative Code.
University Calendar

Some University Calendar dates may change; see Calendars/Deadlines on the Office of the Registrar web site for the most up-to-date academic calendar.

2015 Fall Semester

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>August 24</td>
<td>Classes begin</td>
</tr>
<tr>
<td>September 7</td>
<td>University holiday, offices closed</td>
</tr>
<tr>
<td>November 22-29</td>
<td>Thanksgiving recess</td>
</tr>
<tr>
<td>November 26-27</td>
<td>University holidays, offices closed</td>
</tr>
<tr>
<td>December 11</td>
<td>Classes end</td>
</tr>
<tr>
<td>December 14-18</td>
<td>Final exam week</td>
</tr>
<tr>
<td>December 24-25</td>
<td>University holidays, offices closed</td>
</tr>
</tbody>
</table>

Fall commencement ceremonies: dates vary by college; see Commencement on the Office of the Registrar web site.

2015-16 Winter Session

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>December 28</td>
<td>Classes begin</td>
</tr>
<tr>
<td>January 1</td>
<td>University holiday, offices closed</td>
</tr>
<tr>
<td>January 15</td>
<td>Classes end</td>
</tr>
</tbody>
</table>

2016 Spring Semester

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>January 18</td>
<td>University holiday, offices closed</td>
</tr>
<tr>
<td>January 19</td>
<td>Classes begin</td>
</tr>
<tr>
<td>March 13-20</td>
<td>Spring break</td>
</tr>
<tr>
<td>May 6</td>
<td>Classes end</td>
</tr>
<tr>
<td>May 9-13</td>
<td>Final exam week</td>
</tr>
</tbody>
</table>

Spring commencement ceremonies: dates vary by college; see Commencement on the Office of the Registrar web site.

2016 Summer Sessions

The University of Iowa offers several summer sessions: one 12-week session, one 8-week session, two 6-week sessions, and one 4-week session. Each session is listed below in order by its starting date.

<table>
<thead>
<tr>
<th>Session</th>
<th>Starting Date</th>
<th>Ending Date</th>
<th>Final Exam Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Four-week session (final exam day: June 10)</td>
<td>May 16-June 9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Six-week session I (final exam day: June 24)</td>
<td>May 16-June 23</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Twelve-week session (final exam day: August 5)</td>
<td>May 16-August 4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>University holiday, offices closed</td>
<td>May 30</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eight-week session (final exam day: August 5)</td>
<td>June 13-August 4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Six-week session II (final exam day: August 5)</td>
<td>June 27-August 4</td>
<td></td>
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Office of the Registrar Calendars

The Office of the Registrar provides additional calendars that list detailed academic deadlines, final exam schedules, and University holidays. It also publishes a five-year academic calendar (PDF file available). See Calendars/Deadlines on the Office of the Registrar web site.

Individual College Calendars

Some University of Iowa colleges have academic year schedules that vary from the one listed above. Contact the individual colleges or visit their web sites; use the A-Z Search or the Phonebook/E-mail directory on the University of Iowa home page.
Campus Visits

Each year the University of Iowa is the destination for visitors with wide-ranging interests. Prospective and new students and their parents, new faculty and staff members, fans of intercollegiate athletics, University of Iowa Health Care patients, audiences for the visual and performing arts, museum visitors, and conference and continuing education participants are among those drawn to the campus.

Prospective and New Students
Prospective and new students should come first to the Admission Visitors Center, C110 Pomerantz Center, 213 N. Clinton Street. The center is open weekdays 8:00 a.m. to 4:30 p.m., except on University holidays. It is best to visit the campus on weekdays, when classes are in session and when other University offices are open. Please call to arrange for a campus visit: 319-335-1566.

Attractions, Campus Maps, Parking
For links to campus maps, walking tours, how to arrange visits to varied attractions, and where to park on campus, see Campus Maps. For additional information about the University, use the A-Z Search on The University of Iowa home page.
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